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ANNOUNCEMENT

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EDITORIAL

Poor Proficiency in English - A Blackman's Limiting Factor in Medical Education

"If a process is affected by more than one factor then its rate will be determined by the Factor which is nearest to its minimum value"

Blackman (1905)

The people of the third world Countries are clamouring for attention to the decline in the quality of the doctors being produced: One reason of this decline may be due to the burgeoning of large number of Government and Private Medical Colleges on populist demand, making quality control difficult.

But many Medical educationists feel the lack of proficiency in the English language among Medical Students and even Teachers could be an important cause of decline of Medical Education in non- English speaking Countries. It may be noted that medium of teaching and examination in such Countries is English. Invariably the Medical books are in English. Hence it becomes imperative for even a non-native speaker of English to gain a good or a reasonable proficiency in English, besides, learning his mother tongue and the National language (a real onerous task). Seemingly, the Medical Students taught and trained in a good English medium school do well than the Students who had no such opportunity. Such Students have motivation and perseverance but no comprehension of the Subject is possible due to the deficiency in English (A real Blackman's Limiting Factor).

It would be desirable for the 10+2 Syllabi makers to make the Syllabi of English more Language Centric than Literature Centric. This may not be construed as Sententious or a censorious comment.

Prof. S.M. Mishra
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Editor In Chief

Hepatic Encephalopathy in Liver Cirrhosis: Precipitating factor and Outcome

Khadka D[1], Shrestha A[2],Bassi SD[3], Bhandari B[4]

ABSTRACT

Introduction: Hepatic encephalopathy, one of the major decompensating events of liver cirrhosis manifest as a wide spectrum of neurological or psychiatric abnormalities ranging from subclinical alterations to coma. The main aim of this study was to determine precipitants of hepatic encephalopathy (HE) and their impact on hospital stay and mortality. **Methods:** A hospital based cross sectional study carried out in the Department of Medicine, Nepalgunj Medical College, Kohalpur from September 2018 to May 2019.Patients of liver cirrhosis with signs and symptoms of hepatic encephalopathy(HE) were enrolled in the study. Detailed history was taken with patients or patient's visitor regarding precipitating factors. Child Turcotte Pugh (CTP) class was used for assessing liver disease severity and West Haven classification was used for grading of hepatic encephalopathy. **Results:** Total patients of hepatic encephalopathy studied were 150**.** Among which, 114 (76%) were male and 36 (24%) were female. Mean age was 45 ± 11years. Common precipitating factors for hepatic encephalopathy identified were constipation 25.3%, Upper gastrointestinal bleed (9.3%), Spontaneous bacterial peritonitis (8%).No identifiable factor was observed in 6.7%. cases. Significant relationship was noted with CTP class and grading of Hepatic encephalopathy. Hospital stay was also found longer (≥5 days) among patients having more than one precipitating factor. **Conclusions:** Early recognition of precipitants and patient education is very crucial in the management of hepatic encephalopathy. Patients having ≥ 2 precipitating factor had longer hospital stay and higher grade of hepatic encephalopathy.

Keywords*: *CTP, Hepatic encephalopathy; Liver cirrhosis; Spontaneous bacterial peritonitis

INTRODUCTION

Cirrhosis is the end-stage of every chronic liver disease, characterized by the formation of regenerative nodules of liver parenchyma that are separated by and encapsulated in fibrotic septa and associated with major angioarchitectural changes [1]. Hepatic encephalopathy is one of the major decompensating event in liver cirrhosis, median survival after appearance of encephalopathy is 1–2 years [2]. The prevalence of overt HE at the time of diagnosis of cirrhosis is 10%–14% in general [3], 16%–21% in those with decompensated cirrhosis [2] and 10%–50% in patients with transjugular intrahepatic portosystemic shunt (TIPS) [4]. Hepatic encephalopathy may arise spontaneously but more commonly will develop as a result of some precipitating factor in the course of acute or chronic liver disease [5].Early detection of precipitating factor may halt the progression of HE and prevent fatal complication[6].Therefore the present study was under taken for early detection of precipitating factor , which will be helpful in initiating proper management and may also decide the final outcome of patient in terms of hospital stay and mortality.

MATERIAL AND METHODS

The study was a cross sectional study conducted in the Department of Medicine, Nepalgunj Medical College, Kohalpur from September 2018 to May 2019. Ethical approval was taken from Institutional Review Board (IRB), NGMC and written informed consent was taken from each patient. Patients with liver cirrhosis of age between 18 to 70 years, irrespective of sex with feature of hepatic encephalopathy were included in the study. Patients less than 18 years and more than 70 years of age, Patients with feature of non cirrhotic portal hypertension, acute liver failure, hypo and hyperglycemic coma, stroke and chronic kidney disease with uremia and patients who refuse to participate in the study were excluded from the study.

Patients attending Medicine unit on outdoor basis and or admitted in ward were enrolled in the study, who fulfilled the criteria of liver cirrhosis on clinical, biochemical and radiological background [7]. Hepatic encephalopathy was diagnosed on the basis of history and clinical examination and graded according to West Haven Classification [8]. Severity of liver disease was assessed through the Child Turcotte Pugh (CTP) class[9]. Routine blood examination like complete blood count, liver function, serum albumin, prothrombin time, renal function test, ascitic fluid analysis, urine routine examination,

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chest x-ray, ultrasonography abdomen done. Detailed history was taken with patient or patient's visitor regarding precipitating factor like constipation, hematemesis , malena, fever, pain abdomen, diarrhea, intake of high prorein diet, intake of any drugs like sedative, diuretics, large volume paracentesis, trauma or surgery. All patients received standard medical treatment during hospital stay with ammonia lowering and gut cleansing agents such as lactulose and L-ornithine and L-aspartate and other supportive measures. Grade III and IV HE was managed in ICU. Patient with upper gastrointestinal bleeding subsequently underwent an upper gastrointestinal endoscopy upon improvement of HE or earlier in cases of continuing bleeding. Patients were assessed daily till hospital stay.

The desired sample size calculated as

$$N = \frac{z^2 pq}{d^2}$$

z – Value for 95% confidence level

p- Prevalence of hepatic encephalopathy

q- 1-p

d- Allowable error

Based on different studies, prevalence of HE is 10-14% in general[3]. Taking prevalence 10% with allowable error 0.05, minimum sample size was 138. Here 150 cases have been studied.

Data collected in structured proforma were entered in Microsoft Excel 2007 and statistical analysis was done with SPSS 20 software. Descriptive analysis of patients with hepatic encephalopathy was performed for demographic and laboratory parameters and results presented as mean ± standard deviation for quantitative variables Relationship of number of precipitating factors was categorized into 2 categories; one precipitating factor, and more than and equal to 2 precipitating factors and compared it with different parameters using chi-square test. All p-values were two sided and considered as statistically significant if < 0.05.

RESULTS

A total of 150 patients of liver cirrhosis with HE of different grades were studied, among which 114 (76%) were male and 36 (24%) were female. Mean age was 45 ± 11years.Out of 150 cases, majority 130 (86.7%) patients were alchohol related followed by 10 (6.7%) Hepatitis B virus related and cryptogenic 4 (2.6%). NASH, Autoimmune hepatitis and Hepatitis C infection related cirrhosis was noted in equal percentage 1.33%. Main precipitating factor for HE were constipation (25.3%), Upper gastrointestinal bleed (9.3%), Spontaneous bacterial peritonitis (8%).No identifiable factor was observed in 6.7%.Electrolyte imbalance (hypokalaemia in 4%, hyponatremia in 5.3%), high protein diet in 4% ,use of sedative in 2.7% along with combination of one or more precipitating factor noted. Other demographic and laboratory parameters were shown in table I.

Variables	Minimum	Maximum	Mean±Standard Deviation
AGE (years)	21	70	45.87±11.39
HEMOGLOBIN (g/dl)	5.7	12.5	9.811±1.3
WBC(cell/cumm)	1250	18900	7424.67±4103.4
PLATELETS (cell/µl)	8700	292000	144542.67±62993.1
BILIRUBIN (mg/dl)	1.2	7.1	3.596±1.3
ALBUMIN (g/l)	1.9	3.8	2.925±0.4
INR	1.0	1.9	1.372±0.2
S.NA (mEq/l)	120	142	131.64±4.4
S.K (mEq/l)	3.0	4.2	3.624±0.3
CREATININE (mg/dl)	.6	2.1	1.111±0.2

Table I: Demographics and laboratory parameters of all patients with Hepatic Encephalopathy

S.NA-serum sodium;S.K-serum potassium

Significant relationship was observed between CTP classes and grading of HE. Majority of patients with grade 3 HE were in CTP class C as shown in table II.

		GRADING OF HE				Total	p-value
		1	2	3	4		
CTP CLASS	A	22	2	0	0	24 (16.0%)	< 0.05
	B	0	18	8	0	26 (17.3%)	
	C	0	0	76	24	100 (66.7%)	
Total		22	20	84	24	150 (100.0%)	

Table II: Relationship between CTP class and grading of HE

Majority of patients (96) out of 150 were having one precipitating factor. There was no significant relationship observed between CTP class and number of precipitating factor but significant relation observed for grading of HE and duration of hospital stay with increase in number of precipitating factors but not with patients survival as shown in table III.

Variable	<= 1 precipitating factor	>= 2 precipitating factor	Total	p-value
CTP CLASS				
A	18(18.8%)	6(11.6%)	24(16.0%)	0.095
B	20(20.8%)	6(11.6%)	26(17.3%)	
C	58(60.4%)	42(77.8%)	100(66.7%)	
Grading of HE				
1	18(18.8%)	4(7.4%)	22(14.7%)	
2	14(14.6%)	6(11.1%)	20(13.3%)	<0.05
3	60(62.5%)	24(44.4%)	84(56.0%)	
4	4(4.2%)	20(37.0%)	24(16.0%)	
Duration of hospital stay				
< 5days	40(41.7%)	4(7.4%)	44(29.3%)	<0.05
≥ 5days	56(58.3%)	50(92.6%)	106(70.7%)	
Outcome				
Alive	94(97.9%)	50(92.6%)	144(96.0%)	0.19
Dead	2(2.1%)	4(7.4%)	6(4.0%)	
Total	96	54	150	

Table III: Relationship of numbers of precipitating factors with different parameters

DISCUSSION

Hepatic encephalopathy (HE) is a complex, potentially reversible neuro-psychiatric condition may arise spontaneously but more commonly will develop as a result of some precipitating factors. Modern research has proved time and again that identifying and removing precipitating factors is still the key step in the overall management[10]. In our study, significant relationship was noted between grading of HE with CTP class which represents disease severity. Higher grade of HE with CTP class C was also reported by Nayak, et al[11]. Among different precipitating factors of HE, constipation, upper gastrointestinal bleeding and spontaneous bacterial peritonitis, high protein intake were found in majority. Similar observations were reported by other studies too[12,13]. Constipation and gastrointestinal bleed increases ammonia production and absorption thus precipitate HE. The present study demonstrates that a longer hospital stay in patients with ≥ 2 precipitating factors as compared to Strauss et al[14]. Longer hospital stay is associated with increased risk of hospital acquired infections which further exacerbate HE episodes. Thus, it is very important that early recognition of precipitating factor play a key role in final outcome of patients of HE.

CONCLUSION

Hepatic encephalopathy is one of the major decompensating events of liver cirrhosis usually associated with precipitating factors. Constipation, GI bleeding, Infection were identified as major precipitating factor. Patient education is very important regarding knowledge of disease condition and its precipitating factors because HE is reversible condition if precipitating factors are recognized early and treated properly.

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ORIGINAL ARTICLE

Prediction Of Mortality By Pediatric Risk Of Mortality (PRISM) III Score In NGMC Pediatric Intensive Care Unit

Km R[1]

ABSTRACT

Background: The pediatric risk of mortality (PRISM) III score helps in predicting prognosis. It is being used in most of the pediatric intensive care units of developed world and few of developing ones. We have undertaken this study to evaluate efficacy of PRISM IIIscore in prediction of mortality. Material and Methods: Prospective hospital based analytical study conducted from May 2018 to April 2019 in patients admitted to pediatric intensive care unit (PICU) of NGMC, Nepal. The pediatric risk of mortality score (PRISM) III which includes 14 parameters (physiological and laboratory) was recorded within 24hours of admission. A total of 480 patients were included. The final outcome was recorded as death or discharge. Result: It was observed that mortality increased with increasing PRISM III score approaching almost 100% by PRISM III score of 25 and more. The variables that were found to be risk factors for death were readmission, diseases of hepatobiliary system, mechanical ventilation (MV) and use of vasoactive drugs with p value of <0.001. PRISM III score offers a good discriminative power with 0.866 (95% CI) area under the ROC curve. Conclusion: The pediatric risk of mortality score was found to be a useful tool for prediction of prognosis.

Keywords: Pediatric risk of mortality score, mortality, pediatric intensive care unit

INTRODUCTION

The pediatric intensive care unit facilities are improving for last few years in different parts of our country with opening and improvement of the pediatric intensive care units. The outcome of the patients admitted to PICU is not widely reported in Nepal, despite the necessity to know the scope of improvement and work on it, need of more advanced equipment and aggressive treatment of critically ill children of units being known. Reduction of mortality is the basic aim of PICU. Estimation of mortality risk predictions by pediatrician is highly subjective.[1]Therefore there is need of a scoring system to predict risk of mortality of patients admitted to PICU. PRISM III score is very useful in estimating the risk of mortality, prognosis and to evaluate quality of care. It also helps selection of appropriate treatment modality, ethical and economic issues. PRISM III score is one of the main indicators used in PICU. There are 14 parameters (physiological and laboratory) and each parameter records highest severity value in first 24 hours.[2] The aim of present study is the prediction of mortality rate in PICU by application of PRISM III score.

To improve the quality of care in PICU, it is very important to have a constant relationship between test parameters and outcome of patients. The PRISM score has been developed and validated in most of the PICUs of developed countries and there are very few reports from some developing countries[1,3,4]. Google search using term "PRISM III scoring in Nepal" did not show any study done in Nepal. Expertise of health personal managing PICUs varies depending upon their experience and training. PICUs are managed by pediatric consultants, residents, nurses who have different subjective perceptions of score to be given. There are some reports from India which support usefulness of PRISM III score for prediction of prognosis[3,4].

MATERIALS AND METHODS

This is a prospective hospital based study conducted at the PICU of Nepalgunj Medical College, Nepalgunj catering to critical care needs of 500 – 600 children per year from 1 month to 15 years of age. This study was conducted over a period of 1 year from May 2018 to April 2019. During the study period a total of 480 cases were enrolled in the study. Readmission was taken as separate admission. PRISM III score was calculated for all the patients within 24 hours of admission. Pediatric cases aged between 1 month and 15 years admitted directly to PICU were included in the study. Patients not giving consent to be enrolled in the study, death occurring within first 10 hours of PICU admission, case which were discharged from PICU within 24 hours of admission, patient requiring continuous CPR and not being stable for ≥ 2 hours and patients who left against medical advice were excluded from the study.

The study design was approved by the Institution's Ethical review committee. Written and informed consent was taken from the guardian of patients. The information collected on each PICU admission included name, age, requirement of

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ventilator, PICU stay, diagnosis, outcome (survived or not). Necessary investigations were done as per need. PRISM III score was calculated within 24 hours of admission in PICU. Calculation of PRISM III score was done as per recommendation of Pollack et al[5]. Total PRISM III score was calculated for every patient by summing of all the sub scores within 24 hours of admission. The data was analyzed by SPSS version 20.

Variables	Age restrictions and Range		Score
Systolic blood pressure in mmHg	**Infants**	**Children**	2
	130-160	50-200	
	55-65	65-75	6
	>160	>200	
	40-54	50-64	7
	<40	<50	
Diastolic Blood pressure in mmHg	All ages		6
	>110		
Heart rate in beats per minute	**Infants**	**Children**	
	>160	>150	4
	<90	<80	4
Respiratory rate in breaths per minute	**Infants**	**Children**	
	61-90	51-70	1
	>90	>70	5
	Apnea	Apnea	5
PaO2/FiO2	All ages	200-300	2
		<200	3
PaCO2 in torr(mmHg)	All ages	51-65	1
		>65	5
Glasgow coma score	All ages	<8	6
Pupillary reactions	All ages	Unequal or dilated	4
		Fixed and dilated	10
PT/ PTT	All ages	1.5 times control	3
Total bilirubin mg/dL	>1 month	>3.5	6
Potassium in mEq/L	All ages	3.0-3.5	1
		6.5-7.5	1
		<3.0	5
		>7.5	5
Calcium in mg/dL	All ages	7.0-8.0	2
		12.0-15.0	2
		<7.0	6
		>15.0	6
Glucose in mg/dL	All ages	40-60	4
		250-400	4
		<40	8
		>400	8
Bicarbonate in mEq/L	All ages	<16	3
		>32	3

Table I: PRISM III score Pollack et al.5

RESULTS

During the study period 531 cases were admitted in the Pediatric Intensive Care Unit from May 2018 to April 2019 out of which only 480 cases met inclusion criteria and hence were enrolled in the study. The mean age was found to be 39±47 months and mean duration of PICU stay was 56±44 hours. There were 317 males and 163 females; mortality among different sexes was not statically significant (P value 0.175). The majority of patients were clinical (98.5%) and the most common cause of death was the diseases of respiratory system (38.8%). Mechanical ventilation and vasoactive drugs were required in 22.5% and 23.1% cases respectively. Mortality was 9.2%. The characteristics of the study population are detailed in Table II. Mortality associated with PRISM score of expired and survived patients is detailed in table III. The variables that were found to be risk factors for death were readmission, diseases of hepatobiliary system, mechanical ventilation (MV) and use of vasoactive drugs with p value of <0.001. Variables found to be risk factors of death are given in table IV. PRISM III score in our center offers a good discriminative power with 0.866 (95% CI) area under the ROC curve. This area under the curve is an expression of the overall accuracy of a model in differentiating outcome groups and is a good measure of its
predictive ability. Inspecting the ROC curve, cut off point 15 was found to be appropriate to predict mortality so taking 15 as cut off point the sensitivity was 72.7% and specificity was 91.1%.

Variables	N (%)	
Total patients	480	
Age (months)		
Length of PICU stay (hours)		56 ±44.182
Gender		
Male	317 (66)	
Female	163 (34)	
Patients		
Clinical	473 (98.5)	
Surgical	7 (1.5)	
Underlying disease		
Central Nervous System	160 (33.3)	
Respiratory System	186 (38.8)	
Hepatobiliary	11 (2.3)	
Infectious disease	42 (8.8)	
Hematological disease	31 (6.5)	
Renal disease	10 (2.1)	
Gastrointestinal disease	9 (1.9)	
Cardiovascular disease	12 (2.5)	
Others	19 (4)	

Use of mechanical ventilation		
Yes	108 (22.5)	
No	372 (77.5)	
Use of vasoactive drugs		
Yes	111 (23.1)	
No	369 (76.9)	
Deaths	44 (9.2)	

Table II -Characteristics of study population

PRISM III Score	Death	Survival	Total	Observed morality (%)
0-4	5	151	156	3.2
5-9	2	175	177	1.1
10-14	5	71	76	6.6
15-19	5	25	30	16.7
20-24	3	10	13	23.1
25-29	6	2	8	75
30-34	5	2	7	71.4
35-39	5	0	5	100
40-44	4	0	4	100
45-49	4	0	4	100

Table III-PRISM comparison between expired and survived patients

Variable	Category	Deaths n (%)	p
Age (months)	1-12 13-60 61-180	24 (10.7) 12 (7.6) 8 (8.2)	0.540
Length of PICU stay (hours)	25-72 73-168 >168	40 (10.5) 4 (4.5) 0 (0)	0.116
Gender	Male Female	25 (7.9) 19 (11.7)	0.175
Patients	Clinical Surgical	44 (9.3) 0 (0)	0.397
Readmission	Yes No	5 (55.6) 39 (8.3)	<0.001
Underlying disease	Central Nervous System Respiratory System Hepatobiliary Infectious disease Hematological disease Renal disease Gastrointestinal disease Cardiovascular disease Others	9 (5.6) 18 (9.7) 5 (45.5) 5 (11.9) 3 (9.7) 0 (0) 0 (0) 3 (25) 1 (5.3)	<0.001
Use of mechanical ventilation	Yes No	35 (32.4) 9 (2.4)	<0.001
Use of vasoactive drugs	Yes No	34 (30.6) 10 (2.7)	<0.001

Table IV -Risk factors for death

Patient	PRISM Mean	p
Expired	25.20	<0.001
Survived	7.27	

Table V – PRISM comparison between patients who died and survived

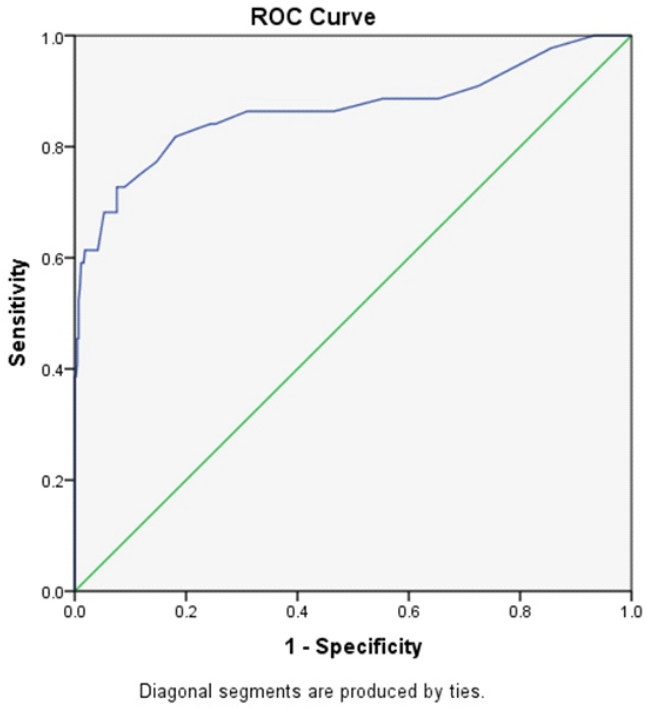

Figure 1: ROC curve for prism score area under curve = 0.866

Area under the ROC curve (AUC)	0.866
Standard Error	0.039
95% Confidence interval	0.790 -0.942
Significance level P	<0.001

DISCUSSION

Response to an insult differs in different individuals so recovery from illness also varies in different individuals. Prediction of outcome of patients admitted to PICU helps in formulating policy and optimum use of limited resources of the country. Intent of pediatric intensive care unit is to improve quality of care and to reduce the morbidity and mortality. PRISM III score helps in prediction of morality risk by changes of normal physiological values during diseased state. This was designed by Pollack et al. in 1996[5]. Various studies have shown PRISM III score to be a good predictor of mortality risk assessment. At our center we found the mortality of 9.2% which is low in comparision to studies[6-8]and is more as compared to studies.[9-11]Bilan et al[12] found mortality of 9.05% in their study done in Pakistan which is similar to ours. We found that as the PRISM score increases mortality also increases and this fact is supported by various Indian, Asian and other studies[6,7,9,10,12,13,14]. There was no significant gender difference in mortality in our study. Costa et al[15] also found no gender difference for mortality whereas Aragao et al[16] found mortality to be more in males. The use of mechanical ventilation and vasoactive drugs were found to be risk factors for death, corroborating the findings of other authors who also showed a higher mortality rate in patients undergoing these procedures[16,17]. PRISM III score of ≥25 was associated with very high mortality in our study. Martha et al[18] and several other studies[19,20] also reported higher mortality with higher PRISM scores. Shann et al[21] stated that if the area under the curve of ROC is equal to one, the model is perfect. An area between 0.9 and 0.99% is very good, between 0.8 and 0.89% is good and finally, between 0.7 and 0.79% is acceptable. If the area is 0.5, the model is bad. In our study, the area under the curve was 86.6%, so it is good to predict mortality in patients admitted to PICU. Khajeh A et al[22] reported area under the curve to be 80% which is similar to our study.

CONCLUSION

The mortality increases with increasing PRISM III score. PRISM III score offers a good discriminative power in prediction of mortality with 0.866 (95% CI) area under the ROC curve. In our study variables found to be risk factors for death were readmission, diseases of hepatobiliary system, mechanical ventilation (MV) and use of vasoactive drugs.

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Abdominal Wound Closure In Gynaecological Or Obstetrical Surgery With Vicryl® (Polyglactin910) Versus Vicryl Plus® (Polyglactin910 With Triclosan Added): A Comparative Study

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ABSTRACT

Background: surgical site infection is the most common post-surgical complication in surgical patients. The incidence of surgical site infection varies from 3-20% (or even more) in different part of the world. To date, the best method and material for skin closure has not been recommended by anybody. Triclosan is an antiseptic agent used for coating a suture material to prevent the infections. **Objective:** This case-controlled study was carried out to determine the comparative efficacy of sutures; vicryl® and vicryl plus® (triclosan, an antisepticincorporated with suture), in reducing surgical site infection in laparotomy for clean Gyn/Obs operations. **Material and method:** This case-controlled study was carried out in Dept. Of Gynae/Obs at Nepalgunj Medical College Teaching Hospital, Kohalpur. The period of the study was from Jan 2018 to January 2019. A total of 50 participants were enrolled in the study, who met the inclusion criteria. The patients were divided into two groups A and B, each consisting of 25 patients. The patients were allocated in the groups alternately to remove bias. The Group A consisted of patients where Vicryl plus® (Ethicon, Johnson & Johnson Company, Ahmadabad, India) polyglactin910 with triclosan) was used and Group B consisted of patients where vicryl ® (Ethicon, Johnson & Johnson Company, Ahmadabad, India) polyglactin910 alone) was used. Patients whose abdominal wounds were found infected, pus swab for culture were taken and sent for aerobic culture and sensitivity. All patients received ceftriaxone and metronidazole single dose before operations prophylactically. **Result:** Surgical site infection in group A was 3 cases out of 25 (12%) and in group B it was 6 cases out of 25(24%). Triclosan added polyglactin910 suture found to be statistically non significant concerning prevention of SSI as compared to polyglactin910 (p=0.472). The mean age of the study population was in group A was (29.76±7.47) and in group B was (27.12±7.42).

Key Words: *Abdominal Surgery, Surgical Site Infection (SSI), Vicryl® (Polyglactin910), Vicryl plus® (Polyglactin910 with added triclosan)*

INTRODUCTION

Surgical site infection (SSI) is one of the most common post-operative complications encountered in surgical practice. Incidence ranges from 3 to 20 percent or more worldwide[1]. Though Skin closure is an integral step of all abdominal route of surgery, yet there is no unanimity about the addition of antibiotics or antiseptics material in the wound closure[2-4]. Polyglactic910 is a synthetic, absorbable, braided suture made of polyglactin910 coated with a copolymer of L-lactide and glycolide (Polyglactin370) and calcium stearate. Polyglactic910 retains 65% of its tensile strength at 2 weeks and 40% at 3 weeks. It is extremely useful as a completely buried suture to approximate wound edges until the wound has gained enough strength to keep the edges from separating[5]. Complete absorption of Polyglactin910 occurs between 60 and 90 days. The antibacterial suture is an absorbable suture with an antimicrobial coating that was first developed using triclosan, a well-known antimicrobial material with a long history of safe use as the active agent in consumer health care products[6]. Most of the research carried by other surgical disciplines to identify the efficacy of triclosan added suture but in gynae obs practice lacking this type of study. Thinking of this, the study was carried out to determine the effectiveness of skin closure with suture polyglactin910 versus polyglactin910 with triclosan in gynae /obs surgery. It may be noted that the price of vicryl plus® costs more (500) compare with vicryl®.

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MATERIALS AND METHOD

The present study is a case-controlled hospital-based study. The study was conducted in the Gynae/Obs dept. of the teaching hospital kohalpur between Jan 2018 to Jan 2019.

A total of 50 participants were divided into two groups, group A (consisting of 25 patients) had closure with Vicryl plus® (polyglactin910 with triclosan) and group B(consisting of 25 patients) had closure with Vicryl® (polyglactin910) only.

Clinically wound infection was considered if the abdominal wound post operatively showed any of these signs:

1. Erythrema of the wound margin with or without swelling.
2. Serosanguenous discharge
3. Frank abscess or pus discharge from the operative wound.

Only such patients were included who had no intra-abdominal infection i.e. abdominal hysterectomy, ovarian cyst removal, salpingectomy and caesarean section. All patients received ceftriaxone and metronidazole single dose prophylactically before operation.

Follow up – on the 4th day of surgery wound was inspected for infections or earlier if the patients complains of pain at the wound site or fever. A swab was taken if any sign of infection was noted and sent for aerobic culture and sensitivity.

RESULTS

The Group A clinically showed evidence of infection in 3 cases (12%). One case had erythrema and two cases had sero-sanguinous discharge. The aerobic microflora grew in one sample, it was, klebsiella. The Group B clinically showed evidence of infection in 6 cases (24%). One case had erythrema and 5 cases had sero-sanguinous discharged. The aerobic microflora grew in four samples, it was,staphylococcus aureus in 5 cases and in one case it was klebsiella (Table I and II).

Infection	Yes	No	p-value
Group A	3(12%)	22(88%)	0.472
Group B	6(24%)	19(76%)	
Total SSI in 50 cases	9(18%)	41(82%)	

Table I: Showing infection clinically

Microflora grew in group A vicryl plus® 1 out of 3 and in group B vicryl® group4 out of six.p value calculated by fisher,s exact test which was statistically not significant(p=0.472)

Microorganism	Yes	N0
Group A	Klebsiella-1 cases	2- cases
Group B	Klebsiella-1 cases and staphylococcus in 3 cases	2-cases

Table II: Microorganism growth in culture

Group A (vicryl plus®)- only one showed growth of klebsiella and in group B (vicryl®), grew klebsiella one case and three casesof staphylococcus aureus.

DISCUSSION

The present study consisting of a total of 50 cases admitted to Gynae/Obs ward, who had a laprotomy were divided into two groups each consisting of 25 patients/ group A had wound closure with vicryl plus and group B, was vicryl alone.

There is no unamity about the use of triclosan added suture in reducing SSI of abdominal wound, as some studies have found it statistically significant in reducing the SSI and others have failed to confirm it.

Justinger C et al[5] reported (4/9%) of SSI in triclosan added group (4.9%) and in non – added group (10.8%) (p=0.01) showing that in his cases, there was significant reduction in SSI in triclosan added group. Galal II et al.[7] found (7%) SSI in triclosan group and in non triclosan group it was (15%) (p=0.011) which proved significant reduction of SSI in triclosan added group.

DienerMK et al[9] reported the incidence of SSI in 14.8% cases(87 out of 587) triclosan added group (PDSII plus) as compared to PDSII group it was16·1% (96 out of 598) (p=0.64) .

In our series the group which received viryl plus® (triclosan added) showed SSI in 3 cases (12%) and in plain vicryl® group 6 cases (24%) show SSI. (P value=0.472, Fischers exact test double tailed). Our study confirms the findings of Diener MK et al[9]. The variation of results with other workers namely Justinger C et al[5] and Galal II et al[7]., may be due to the selection of the cases as they have included large numbers of emergency and potentially infected cases. The p value in the present study (p=0.472) is statistically non significant in reducing SSI.

CONCLUSION

vicryl® (polyglactin910) suture when used for the abdominal wound closure in clean Gynae/Obs operations fairs equally well as the vicryl plus® (polyglactin910 with triclosan added)as far as SS isI concerned. Moreover vicryl plus® is about 500 NRS costlier than the vicryl®. Hence more over there is no justification of using vicryl plus® in clean Gynae/Obs surgeries.

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ORIGINAL ARTICLE

Clinical Correlation Of Chronic Rhinosinusitis With Nasal Polyps

Verma LR[1], Sharma A[2]

ABSTRACT

Background: Chronic rhinosinusitis with and without nasal polyps represent different group of one chronic inflammatory disease of the mucosa of the nasal cavity and paranasal sinuses. Coexistence of chronic rhinosinusitis with nasal polyps' has similar characteristics of inflammation that supports assumption that chronic rhinosinusitis and nasal polyps may at least be in part, the same disease process. **Objectives:** This study is aimed to correlate the chronic rhinosinusitis associated with nasal polyps. **Methods:** This was a prospective descriptive study was conducted on the patients attending the department of ENT in NGMC teaching hospital from March 2016 to September 2017.**Result :** There were 70 cases including 47male and 23 female, with an age range of 17years to 65 years. **Conclusion:** This study supports that a patient with chronic rhinosinusitis associated with nasal polyps is a subtype of chronic sinus disease.

Keywords: *Chronic rhinosinusitis (CRS), Nasal endoscopy, Nasal polyps (NPs)*

INTRODUCTION

Rhinosinusitis is a significant health problem which seems to mirror the increasing frequency of allergic rhinitis and it poses in a large financial burden on society. The last decade has seen the development of a number of guidelines, consensus documents and position papers on the epidemiology, diagnosis and treatment of rhinosinusitis and nasal polyposis[1]. Chronic rhinosinusitis (CRS) is an inflammatory disease of the mucosa of the nasal cavity and paranasal sinuses with symptoms lasting longer than 12 weeks. Based on the presence of nasal polyps on endoscopy, CRS is clinically divided in CRS with and without nasal polyps (NPs)[2].

The European position paper on rhinosinusitis and nasal polyps proposed the criteria for diagnosis of chronic rhinosinusitis in adults as 12 or more weeks of persistent symptoms and signs with no complete resolution[3]. The European position paper on rhinosinusitis and nasal polyps (EPOS) has now defined rhinosinusitis as a diagnosis made on clinical grounds based on the presence of characteristic symptoms, combined with objective evidence of mucosal inflammation. Nasal polyps represent the end stage local manifestation of chronic inflammatory disease of the sinonasal tract. The condition is a distinct subgroup of chronic rhinosinusitis, chronic rhinosinusitis with polyps (CRSwNP). Despite the prevalence of polyps, the long history of recognition and extensive research and literature, their etiology remains elusive and poorly understood. In the last few decades numerous studies have tried to determine the exact pathogenesis of this disease and although many have shown factors thought to be related and associated, none have come to a definitive conclusion about causation. CRSwNP can significantly affect quality of life, and places significant financial burden on society, directly as a result of outpatient appointments, prescriptions, investigations and hospitalization, and indirectly as a result of missed work days and decreased productivity at work. Despite adequate treatment CRSwNP runs a chronic and recurrent course. Nasal polyps continue to be a challenge for rhinologists treating patients with this chronic disease and for those searching for a cause[4].

Nasal polyps are best thought of as 'chronic rhinosinusitis with nasal polyps' (CRSwNP), and European guidelines define these conditions clinically as[4]:

- ☞ inflammation of the nose and paranasal sinuses associated with two or more symptoms, one of which should be nasal blockage/obstruction/congestion or nasal discharge:
  - o +/– facial pain/pressure
  - o reduction or loss of smell

and either

- ☞ endoscopic evidence of
  - o polyps and/or
  - o mucopurulent discharge from the middle meatus or oedema, mucosal obstruction primarily in the middle meatus

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and/or

- ☞ CT changes:
- o mucosal changes within the osteomeatal complex and/or sinuses

Nasal polyps and chronic rhinosinusitis are often taken together as one disease entity, because it seems impossible to clearly differentiate between them. Nasal Polyposis is therefore considered a subgroup of Chronic Rhinosinusitis. Present study is conducted to evaluate the chronic rhinosinusitis associated with nasal polyps.

MATERIALS AND METHODS

This was a prospective descriptive study conducted in the patients attending the department of ENT in NGMC teaching hospital. We collected data of 70 consecutive patients with chronic sinus disease, over a period from March 2016 to September 2017. Demographic profile and clinical presentation of patients were assessed. Written informed consent was taken from all patients.

The patients were divided into two different groups according to clinical presentation of CRS and endoscopic appearance of nasal polyps. The groups were as follows:

Group 1: CRS, no polyps (Group 1, CRS);

Group 2 CRS and polyps (Group 2, CRSwNPs).

Nasal polyps were detected by nasal endoscopy and graded on a 0–3 point scale. Polyps were scored as follows:

Grade 1 when restricted to the middle meatus,

Grade 2 when they reach beyond the middle turbinate,

Grade 3 when they reach the inferior turbinate or fill the nasal cavity

Radiological evaluation with CT scan done in patients presented with nasal polyps.

RESULT

The study conducted in the patients attending the department of ENT in NGMC teaching hospital from March 2016 to September 2017. During the period under study, a total of 70 patients with established chronic rhinosinusitis were studied. 47(67.1%) were males and 23 (32.9%) females. Their ages ranged from 17 year to 65 years with mean age was 32.37 (SD 11.17). Patients in the age group of 10-20 years were 6 (8%), followed by 21-30 were 34(48%), 31-40 were 16(22%), 41-50 were 9 (12%) and >50 were 5 (7%).

There were 47(67.1%) male and 23(32.9%) female in this study. The demographic and clinical characteristics of patients with CRS and nasal polyp are given in Table. Nasal polyps were detected endoscopically in 19(27.1%) patients; 1(5.3%) patients had grade I polyps, 6(31.6%) patient had grade II polyps and 12(63.2%) patient had grade III polyps. Most common complaint of the patients is nasal obstruction 68(97.1%), followed by nasal discharge 52(74.3%), sneezing 27(38.6%), olfactory dysfunction 20(28.6%) and facial pain 13(18.6%). Olfactory impairment was present in 68.4% of patients only with NPs. There were 19(27.1%) patients who presented with nasal polyp. On nasal endoscopy, 1(5.3%) patient had grade one polyp, 6(31.6%) had grade two polyp and 12(63.2%) had grade three polyp. Mucoprulent discharge are seen only in patients with nasal polyps, however nasal mucosal oedema and mucosal obstructions are least common presentation in this study.

Variable	Total patients	Group 1 CRS	Group 2 CRSwNPs	*P* value
Total number	70	51(72.9%)	19(27.1%)	
Mean age years (SD)	32.37(11.17)	28.43 (7.52)	42.95 (12.6)	0.046
Sex (M/F)	47/23	38/13	9/10	0.032
Mean duration of symptoms years, (SD)	3.27(1.36)	2.78(0.96)	4.58(1.42)	0.000
Nasal obstruction , N= (%)	68(97.1)	49(96.1)	19(100)	0.381
Nasal discharge , n (%)	52(74.3)	33(64.7)	19(100)	0.003
Sneezing, N= (%)	27(38.6)	23(45.1)	4(21.1)	0.006
Facial pain, N= (%)	13(18.6)	8(15.7)	5(26.3)	0.309
Olfactory dysfunction, N= (%)	20(28.6)	7(13.7)	13(68.4)	0.000
Congestion, N= (%)	24(34.3)	22(43.1)	2(10.5)	0.011
Edema/mucosal obstruction, N= (%)	6(8.6)	1(2)	5(26.3)	0.001
Mucoprulent discharge, N= (%)	15(21.4)	-	15(78.9)	0.000
Nasal polyp, N= (%)	19(27.1)	-	19(100)	0.000
Grade I, N= (%)	-	-	1(5.3)	
Grade II, N= (%)	-	-	6(31.6)	
Grade III, N= (%)	-	-	12(63.2)	

Table: Demographic and clinical characteristics of patients with Chronic rhinosinusitis (CRS), and with CRS and nasal polyps (CRSwNPs)

DISCUSSION

According to most recent position statements in chronic sinus disease, CRS is considered a disease continuum with "extremes" such as CRS with and without NPs[2]. In this study, we aimed to scrutinized the chronic rhinosinusitis and its associations with nasal polyps. Moreover, our results indicate that looking from a clinical point of view, there is an apparent

profile of symptoms, sign, radiologic changes, in different subgroups of CRS. In this study the most common symptoms are nasal obstruction, nasal discharge and sneezing. Olfactory impairment is more common in patients with nasal polyps and CRS, although a complete olfactory loss was a characteristic feature of NPs[5].

In this study, sinus CT scan was done in patients with nasal polyp to evaluate the extent of disease. Nasal endoscopy made it possible to directly investigate the extent of Sino nasal polyposis. Mucoprulent discharge are seen only in patients with nasal polyps. It should be mentioned that in most of cases, NPs were diagnosed late (Grade II & III) when it filled the nasal cavity, and this suggests inadequate, ineffective, or delayed management in community care of patients with CRS. Patient with chronic rhinosinusitis appears to associated with nasal polyps is a subtype of chronic sinus disease.

CONCLUSION

CRS associated with nasal polyps is the most severe form of disease with longer duration of nasal symptoms. From the clinical standpoint, these observations support that in patients with chronic sinus disease often associated with nasal polyps, which should be otherwise evaluated and treated as early as possible. Further studies are needed to identify the key factors underlying CRS and development or formation of NPs. This study vindicates that a patient with chronic rhinosinusitis associated with nasal polyps is a subtype of chronic sinus disease. Identifying the causal factors and variants in NPs are important to the path towards improved prevention, diagnosis and treatment of CRS with or without NPs.

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Correlation Between Clinical Symptoms Of Various Colorectal Diseases And Colonoscopic Findings

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ABSTRACT

Background: About 30% of patients presenting to surgical outpatient department has lower gastrointestinal (LGI) symptoms. Colonoscopy is a low risk and at the same time investigation of choice in these patients which allows visualization of the entire colon and the terminal portion of ileum. This study was done to find out the diagnostic accuracy of colonoscopy in relation to the clinical symptoms of the disease. **Methods:** This was a prospective, hospital based study from February 2014 to March 2019, carried out at Nepalgunj Medical College and Teaching Hospital. The colonoscopic diagnosis was compared with the clinical symptoms and further confirmed with histological examination. **Results**: 341 patients underwent colonoscopy. There were 234 (68.62%) males and 107 (31.37%) females with the male to female ratio of 2.18: 1. The age ranged from 16 to 81 with the mean age of 59.63±10.37. The most common presenting symptom was per rectal bleeding (40.34%) the after were alteration in bowel habit (17.30%), constipation (12.90%), hematochezia (11.43%). The least common indication for colonoscopy was unexplained anemia. Haemorrhoids were the most common findings consisting 32.55%. In 19.94% it was normal. Majority had various inflammatory conditions, among them 10.85% had proctocolitis, 2.34% were suspected to have ulcerative colitis. There were 17(4.98%) patients with colonic and 13(3.18%) with rectal carcinoma. 10.55% had colorectal polyps. Out of 111 patients suspected to have hemorrhoids clinically 102 had same findings on colonoscopy. Similarly 34 patients presenting with chronic diarrhea with bleeding and 59 with alteration in bowel habit where inflammatory conditions were suspected had similar findings on colonoscopy in 29 and 34 patients respectively. Similarly the suspicion of malignancy on clinical basis was also correlated on colonoscopy. The inflammatory conditions diagnosed on colonoscopy were confirmed in 85.04 % by histology. Similarly malignancy and the presence of polyps diagnosed on colonoscopy were confirmed by histology in 97.05% and in 97.22% cases respectively. **Conclusion**: Colonoscopy is a safe and effective investigation to diagnose various colorectal conditions. There was a correlation between the clinical symptoms and the colonoscopic diagnosis especially in conditions like inflammatory and neoplastic colorectal diseases. When combined with histology the diagnostic accuracy can be near 100% in conditions like inflammatory and benign or malignant diseases.

***Key words**: Colonoscopy, Clinical symptoms, Histopathology*

INTRODUCTION

Various conditions like neoplastic, inflammatory, infectious and vascular malformations can affect the colon and rectum. The clinical presentation of these conditions is different but many times the symptoms may be common for different diseases. Colonoscopy is now accepted as a gold standard modality for the diagnosis of different colorectal conditions. Colonoscopy has not only revolutionized the diagnostic aspect of colorectal diseases but also the therapeutic aspect. Conditions like polyps and lower gastrointestinal (GI) bleeding can be treated by colonoscopy which required a surgical intervention in the past[1].

Entire colon and the terminal part of the ileum can be visualized with the help of colonoscopy. One of the greatest advantages of colonoscopy is to take biopsy for histological examination. The indications of colonoscopy are lower GI bleeding, alteration in bowel habit, constipation, chronic diarrhea etc.[2] presence of fecal occult blood is a strong indicator of colonoscopy[3] colonic polyps are frequently found in colonoscopy and polypectomy is a routine a routine part of colonoscopy[4].

This study aimed to find out the diagnostic accuracy of colonoscopy in relation to the clinical symptoms of the disease. The accuracy was confirmed by histological diagnosis.

METHODS AND MATERIALS

It was a prospective, hospital based study from February 2014 to March 2019, carried out at Nepalgunj Medical College and

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Teaching Hospital, department of surgery. All patients who underwent colonoscopy were included. Patients below 16 years age and patients with severe cardiopulmonary disease were excluded. Informed consent was taken from the patients and ethical clearance was also taken from the ethical board. Bowel preparation was done with polyethelene glycol. Colonoscopy was done without sedation. Sedation was given only when needed. The procedure was performed using a fibre optic video colonoscope (Fujinon). Biopsy was taken as per the requirement. The colonoscopic findings were compared with the clinical symptoms to find out the accuracy of diagnosis and further confirmed with histological diagnosis.

RESULTS

341 patients underwent colonoscopy during the study period. There were 234 (68.62%) males and 107 (31.37%) females with the male to female ratio of 2.18: 1. The age ranged from 16 to 81 with the mean age of 59.63±10.37. The clinical symptoms are showed in table I.

Clinical symptoms	No. of patients (%)
Per rectal bleeding	141(40.34%)
Alteration in bowel habit	59(17.30%)
Constipation	44(12.90%)
hematochazia	39(11.43%)
Chronic diarrhea with bleeding	34(9.97%)
Abdominal masses	13(3.81%)
Unexplained anemia	11(3.22%)

Table I: Clinical symptoms

Hemorrhoids were the most common finding followed by inflammatory conditions and then were the neoplastic lesions (Table II)

Colonoscopic Finding	No. of patients (%)
Haemorrhoids	111(32.55%)
Normal	68(19.94%)
Colorectal polyps	36(10.55%)
Proctocolitis	37(10.85%)
Colitis	29(8.50%)
Proctitis	19(5.57%)
Carcinoma colon	17(4.98%)
Carcinoma rectum	13(3.81%)
Tuberculosis	11(3.22)
Ulcerative colitis	8(2.34%)
Carcinoma anal canal	4(1.17%)

Table II: Colonoscopic finding

There were 141 patients with per rectal bleeding. Among them 102 (91.81%) had hemorrhoids. Among the patients with alteration in bowel habit, in 36 (61.01%) the findings were suggestive of various inflammatory diseases, in 6 (16.66%) suggestive of malignancy and in 17 the colonoscopy was unremarkable. 39 (88.63%) patients with constipation had normal colonoscopy, 5 (11.36%) had features of colorectal malignancy. Those who presented with hematochezia, 21 (53.84%) had inflammatory diseases and 7 (17.94%) had features of colorectal cancer. The colonoscopic finding of patients with chronic diarrhea with bleeding was also suggestive of inflammatory (70.58%) and colorectal cancers (8.82%). Eleven patients were suspected to have intestinal tuberculosis on colonoscopy. Among them 6 (54.54%) presented with abdominal mass. (Table III)

Symptoms	Haemorrhoids	Normal	CR polyp	Proctocolitis	Colitis	Proctitis	Ca colon	Ca rectum	TB	UC	Ca anal canal
PR bleeding	102	0	31					4	1		4
Alteration in bowel habit		17		19	11	4	3	3	1	1	
Constipation		39					1	4	1		
Haematochezia	5	4	3	6	5	9	7		1		
Chronic diarrhea with bleeding		0		11	12	6	3		1	7	
Abdominal mass		3					4		6		
Anemia	4	2	2	1			2				

CR polyp: colorectal polyp, TB: tuberculosis, UC: ulcerative colitis

Table III: Correlation of clinical symptoms with colonoscopy findings

Histology	No. of patients
Non specific inflammatory diseases	91 (52.90%)
Juvenile polyp	17 (9.88%)
Ca colon (adenocarcinoma)	16 (9.30%)
Ca rectum (adenocarcinoma)	13 (7.55%)
Adenomatous polyp	10 (5.81%)
Hamartomatous polyp	8 (4.65%)
Tuberculosis	8 ((4.65%)
Ulcerative colitis	5 (2.90%)
Ca anal canal (squamous cell carcinoma)	4 (2.32%)

Table IV: Histopathological examination was done in 172 patients with various findings

Clinical findings were correlated with histological findings. Colonoscopy overall could diagnose the inflammatory condition in 85.04 %. Similarly malignancy and the presence of polyp could also be suspected in 97.05% and in 97.22% cases respectively.

DISCUSSION

Colonoscopy is the investigation of choice in the diagnosis of the disease affecting the colon and rectum. The most common indication for colonoscopy was per rectal bleeding followed by alteration in bowel habit and constipation. There was a male dominance which is in consistency with other studies[5]. The mean age in this study was 59.63. The relatively younger age group may be explained by the commonest findings being haemorrhoids which occur commonly after the fifth decade of life[6]. The colonoscopy was normal in 68 (19.94%). The rate of normal findings were higher in the beginning when it was started and with time, started decreasing which may be due to improvement in patients selection. Other similar studies also showed same data[7].

The most common finding was haemorrhoids, followed by nonspecific inflammatory bowel disease, colorectal polyps and colorectal carcinomas. The prevalence of haemorrhoids was similar to other studies[7,8]. The second common finding was nonspecific inflammatory bowel disease. Many of them were of infective etiology and resolved with antibiotics, antiamoebic and antihelminthics.

The occurrence of colorectal polyps is generally thought to be lower in this part of the world and in this series the colorectal polyps were third common finding commonly found in younger patients. We found a prevalence of 10.55% which is in consistent with other studies[9]. All of them were less than five in numbers and none showed any morphologic or histologic characteristics of any syndromic colorectal diseases. The incidence of colorectal cancer in Nepal is uncertain. In our study it was found to be in 9.97% patients.

When the clinical symptoms were correlated with colonoscopic findings, it was found that the findings were correlated in patients with per rectal bleeding, alteration in bowel habit, hematochezia and chronic diarrhea with bleeding. Haemorrhoids were common in patients who presented with fresh bleeding during defecation (PR bleeding), which is the common symptom of haemorrhoids. Similarly when symptoms like altered bowel habit, chronic diarrhea and hematochezia underwent colonoscopy, inflammatory diseases and malignant lesions were common findings. Colonoscopy could detect colorectal polyps in almost all patients. Overall colonoscopy could identify the pathology depending on the symptoms but could not differentiate between specific inflammatory disease like ulcerative colitis or nonspecific inflammatory disease. Similarly polyps were easily diagnosed but colonoscopy was not able to categorize the type. Depending on clinical symptoms malignancy could be suspected on colonoscopy but cannot be confirmed.

Overall 107 patients had findings suggestive of inflammatory bowel disease on colonoscopy among them 91 had nonspecific inflammation, 8 patients had tuberculosis and 5 had ulcerative colitis. Only 3 patients where inflammatory disease was suspected didn't have inflammation on histology. Nonspecific inflammation is commonest[10]. Similarly malignant lesion on colonoscopy were proved to be malignancy in 97.05%. The polyps which were diagnosed on colonoscopy turned out to be different types of polyps on histology also.

CONCLUSION

Colonoscopy is an important modality of investigation in patients with lower gastrointestinal symptoms. The diagnostic yield is significant with an added advantage of biopsy. The diagnostic accuracy when compared with clinical symptoms was also high, specially for malignancy, colorectal polyps and inflammatory conditions and when adjuncted by histology, diagnostic yield may reach near 100% in conditions like polyps, colorectal cancers, and in differentiating between specific (e.g. ulcerative colitis) and nonspecific inflammatory diseases.

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A Comparative evaluation of Non-descent vaginal hysterectomy versus Total Abdominal hysterectomy: A hospital based case control study

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ABSTRACT

Background: Hysterectomy is a common surgery performed by gynecologist worldwide. It can be done either by vaginal, abdominal or laparoscopic route. Non decent vaginal hysterectomy (NDVH) is less invasive, less time consuming and scar less surgery. The blood loss during surgery, intra-operative and post-operative complications are less in NDVH compare to TAH (total abdominal hysterectomy). **Aim and objective**: to compare the clinical outcome between NDVH and TAH. **Method:** A hospital based prospective study was done at Nepalgunj medical collage Kolhapur between March 2018–March 2019, 60 cases fulfilling selection criteria were selected ,30 cases underwent NDVH next 30 cases underwent TAH. Outcome is measured on the basis of operating time, blood loss during surgery, hospital stay and post-operative complications. **Result:** The most common indication for hysterectomy was fibroid uterus in both the groups (NDVH and TAH). The operating time, blood loss, hospital stay and post-operative complications were less in NDVH as compare to TAH. **Conclusion:** NDVH is a choice of surgery over TAH for freely mobile uterus with benign pathology and uterus size less than twelve weeks and without adenexal pathology.

Keyword: *Non decent vaginal hysterectomy (NDVH), Total abdominal hysterectomy (TAH).*

INTRODUCTION

Hysterectomy is one of the major gynecological surgeries performed worldwide. It can be performed either by vaginal, abdominal or laparoscopic routes.

Non descent vaginal hysterectomy is less invasive scar-less hysterectomy for non-descended uterus done for benign pathology of like fibroid uterus, DUB and adenomyosis with uterus size less than 12 weeks and mobile uterus. The operative time is less, postoperative comfort is better, hospital stay is less, blood loss during surgery is minimal, and chances of surgical site infection are also minimal.

There are certain limitations of NDVH like difficult to perform in uterus size > 12wks, (Bisection, Myomectomy, and Morsellation) can be done in big sized uterus. The uterus should be freely mobile with absence of adnexal pathology and it is difficult to perform in scared uterus. It increases the complication.

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Abdominal hysterectomy gives better operative field vision, can be performed in uterus size >12 weeks and uterus with adnexal pathology. So, both the method has certain limitation and benefit equally, while deciding the route of hysterectomy. It depends upon the case selection and expertise on surgeon. NDVH should be performed by competent surgeon with better vaginal surgery skill.

Objectives of study:

1. To compare the outcome of the NDVH and TAH

METHODS

A hospital based prospective study carried out from March 2018- March 2019 at Nepalgunj Medical College Teaching Hospital, Kohalpur, to compare the outcome in vaginal hysterectomy for non-descended uterus (NDVH) and abdominal hysterectomy over the period of one year, 60 patient were taken, among them 30 patient underwent NDVH(group A) and 30 patient underwent abdominal hysterectomy(group B).

Patient requiring hysterectomy and fulfilling inclusion criteria were selected from OPD detail history, examination, investigation performed and informed consent is taken. Hysterectomy is performed either by vaginal or abdominal route. Data were collected on the basis of indication for hysterectomy, hospital stay, operating time, post-operative complications and blood loss during surgery. The blood loss during surgery is measured by weighing of pre and post surgery gauze.

Inclusion Criteria for NDVH or TAH

- Uterus sizes less than 12 weeks
- Freely mobile uterus without adnexal pathology
- Non-scared uterus
- Non descended uterus

RESULTS

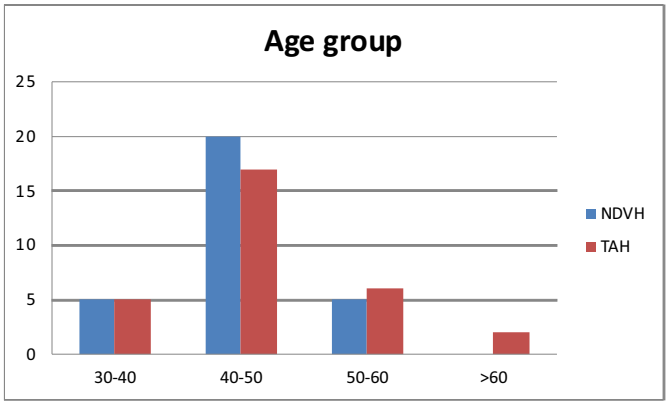

Fig 1: Distribution according to the age group

The maximum hysterectomies either through vaginal or abdominal route has been performed in ladies in between age of 40-50 yrs, standard deviation is (0.069) and least number of hysterectomies has been performed after age of sixty which is common for both the group. (fig.1)

Time consumed	Route of Surgery		Total	pValue
	NDVH	TAH		
<90min (count/%within route of surgery)	24/ (80%)	10/ (33.3%)	34	0.000
>90min (count/%within route of surgery)	6/ (20%)	20/ (66.7%)	26	
Total	30	30	60	

Table I : Time consumed during surgery

In our study about 80% of NDVH cases are operated within 90 minute and only 20% of cases required more than 90 minute time but 66.7% of TAH cases required more than 90 minute and only 33.3% of TAH cases were operated within 90 minute .This study shows that operating time in NDVH is less than in TAH. Data are statically significant hence p Value is 0.000. (Table I)

Blood loss during surgery	Route of surgery		Total	P value
	NDVH	TAH		
<200ml (% within surgery route)	19(63.3%)	7(23.3%)	26(43.3%)	0.002
>200ml(% within surgery route)	11(36.7%)	23(76.7%)	34(56.7%)	
Total	30(100%)	30(100%)	60(100%)	

Table II: Estimation of blood loss during surgery

Our study shows that blood loss during NDVH is less as compare to TAH which is statically significant. (Table II)

Duration of hospital stay	Route of surgery		Total	P Value
	NDVH	TAH		
<5 days	27(90%)	0(0%)	27	0.000
5-7 days	3(10%)	24(80%)	27	
>7 days	0(0%)	6(20%)	60	
Total	30	30	60	

Table III: Distribution according to duration of hospital stay

The duration of hospital stay in NDVH group is less as compared with TAH group, maximum cases (90%) following NDVH were discharged with 5 days following surgery but patients who underwent TAH had longer hospital stay about 80% cases stayed till 7 days postoperative and about 20 % cases even stayed more than 7 days which is statically significant p value (0.000). (Table III)

COMPLICATIONS (Count and % within complications)	ROUTE OF SURGERY		Total
	NDVH	TAH	
No complication	21(70%)	13(43.4%)	34
UTI	5(16.6%)	5(16.6%)	10
Vault infection	2(6.7%)	0(0%)	2
Fever	2(6.7%)	8(26.7%)	10
Wound infection	0(0%)	4(13.3%)	4
TOTAL	30	30	60

Table IV: Complications of surgery

In our study out of 60 cases 34 cases had no complication UTI is common in both group, i.e. 16.6 %. Wound infection (13.3%) and postoperative fever (26.7%) is more in those cases who underwent TAH. (Table IV)

DISCUSSION

This is the era of non-invasive surgery so NDVH is becoming choice of hysterectomy for non-descended uterus with benign lesions and freely mobile uterus with size not more than 12 weeks .

In our study the maximum hysterectomy either TAH or NDVH is being performed between age group of 40- 50 years. This is similar to the study conducted by L.Pranathi, Y.Madhavi [1].

In our study most common indication for hysterectomy either (NDVH or TAH) is fibroid uterus followed by DUB in case of NDVH and uterus with ovarian pathology in case of TAH. This is similar to the study done by Mehta K et al[3].

UTI is common complication in both NDVH and TAH and incidence is 16.6%, which is similar to the study done by Goswami D et al[2].

The incidence of wound infection and fever is high in TAH as compared to NDVH which is similar to the study done by Chen B,et al[7].

In the study conducted by Bansal N et al. They reported 4 cases of vesico-vaginal fistula out of 117 patients who underwent TAH. In our study no vesico-vaginal fistula case is reported in cases that underwent TAH[13].

In our study the hospital stay in patient who underwent NDVH is less as compared to TAH which is similar to the study conducted by Mehta. K et al[3]

Intra operative blood loss in TAH is more as compared with NDVH about 63.3% 0f NDVH cases had blood loss less than 200ml and 36.7% of NDVH cases had blood loss more than 200 ml and about 76.3% of TAH cases had blood loss more than 200ml. Ultimately blood loss in TAH is more which is similar to the study conducted by Mehta K et al[3].

The operative time is less in NDVH cases than in TAH cases about 80% cases of NDVH were finished within ninety minutes but maximum number of TAH cases requiring more than 90 minutes time it is similar with the study conducted by Goswami D et al[2].

CONCLUSION

From our study we came to the conclusion that NDVH should be the choice of surgery in those cases who fulfill the inclusion criteria like (uterine size less than twelve weeks size ,freely mobile and non-scared uterus without adenexal pathology) because intra-operative blood loss, operating time intra-operative and post-operative complication are less as compared to TAH.

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ORIGINAL ARTICLE

Dermatological Conditions Associated with Pregnancy: A Hospital Based Study

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ABSTRACT

Background: Pregnancy Changes can be both physiologic and pathologic, affecting commonly the skin, nails, and hair shafts. Pregnancy has immunologic, endocrine, metabolic and vascular changes, which leads to changes of skin and its appendages and can affect every organ of pregnant women including the skin. Pregnancy also modifies the course of a number of preexisting dermatological conditions. **Objectives:** The aim of our study was to study the common skin manifestation during pregnancy. **Material and Method:** Hundred pregnant women were enrolled in the study**.** This is a hospital- based prospective cross- sectional descriptive study, conducted in the out-patient department (OPD) of Department of Dermatology and Venereology and Department and Obstetrics and Gynecology at Nepalgunj Medical College Teaching Hospital Kohalpur, Banke Nepal, conducted over a period of two year, June 2016 to May 2018. A detailed history along with complete cutaneous examination was carried out in all patients. Relevant investigations were done wherever necessary. **Result:** A total of 100 pregnant women were recruited in our study from June 2016 to May 2018 .Out of these, 65(65%) were primigravidas and 35(35%) were multigravidas. Their age range was 18 to 37 years with the mean of 24. Most of them presented in the third trimester. Pruritus was the commonest symptom accounting for 28(28%) cases. Physiological changes were seen in 75(75%) cases and 10 (10%) cases of specific dermatoses of pregnancy were seen. **Conclusion:** Skin manifestations are quite common in pregnancy and physiological changes were frequently seen. This study emphasizes the need for a scrupulous and meticulous search for dermatological and sexually transmitted diseases instead of a casual cursory examination and clinicians need to distinguish between physiological skin changes and specific dermatoses of pregnancy for better patient care.

Key words**:** *Cutaneous changes, Pregnancy*

INTRODUCTION

Pregnancy has immunologic, endocrine, metabolic and vascular changes which leads to changes of skin and its appendages and can affect every organ of pregnant women including the skin. Some of these changes are due to de novo production of a variety of protein and steroid hormones by the fetoplacental unit as well as the increased activity of maternal pituitary, thyroid and adrenal glands. Recognition of these changes is important for proper classification and appropriate treatment[1]. Pregnancy changes can be both physiologic and pathologic, affecting commonly the skin, nails, and hair shafts. Moreover, pregnancy modifies the course of a number of preexisting dermatological conditions[2]. Previously normal skin may show changes, preexisting dermatoses may become aggravated, improved or be unaffected[3]. Lab investigations are required when the diagnosis remains in question despite a careful history and thorough physical examination[1]. Dermatoses of pregnancy is divided into three categories which includes physiological skin changes, skin diseases affected by pregnancy and specific dermatoses of pregnancy[4].There is a group of inflammatory dermatoses specifically related to pregnancy. A condition like pemphigoid gestation is, polymorphic eruption of pregnancy is specific to pregnancy.

Our study aimed to examine the common skin manifestation during pregnancy in women coming for antenatal checkup at Nepalgunj Medical College Teaching Hospital Kohalpur and therefore have a working knowledge of both physiological and pathological cutaneous lesions during pregnancy.

MATERIALS AND METHOD

This is a hospital based prospective cross- sectional study. The study was conducted in the outpatient department (OPD) of Department of Dermatology and Obstetric and Gynecology at Nepalgunj Medical College Teaching Hospital Kohalpur Nepal. The study was conducted over a period of two year, June 2016 to May 2018. The study population comprised patients attending the department of Dermatology and Venereology

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and Department of Obstetric and Gynecology of the NGMCTH Kohalpur Banke. One hundred pregnant women attending the Outpatient department were included in the study. All pregnant women irrespective of age, parity presenting with skin manifestation were included. Altogether 100 patients were included irrespective of their dermatological complains and all of their skin manifestations were recorded. The diagnosis based on detailed history, clinical features, clinical examinations, and appropriate investigations. Diagnosis was essentially clinical in most cases. Diagnostic laboratory investigations were performed when required and where clinical diagnosis was difficult. Detailed history included chief complaints (if present) related to skin, presence of itching, skin lesions, onset in relation to duration of pregnancy, jaundice, vaginal discharge, past or family history of similar lesions, exacerbating factors, associated medical or skin disorders etc. was elicited and recorded. Relevant systemic examination was carried out. If any preexisting skin disease was present, any evidence of exacerbation or remission was recorded. All statistical analysis was performed using the SPSS 20 and Microsoft excel 2010 software program. Data were tabulated in terms of age, parity, trimester, different skin disorders.

RESULTS

A total of 100 pregnant women were included in our study from June 2016 to May 2018 .Out of these, 65 (65%) were primigravidas and 35(35%) were multigravidas (FIGURE 1). Their age range was 18 to 37 years (TABLE 1) with the mean of 24. Most of them presented mainly in the third trimester.

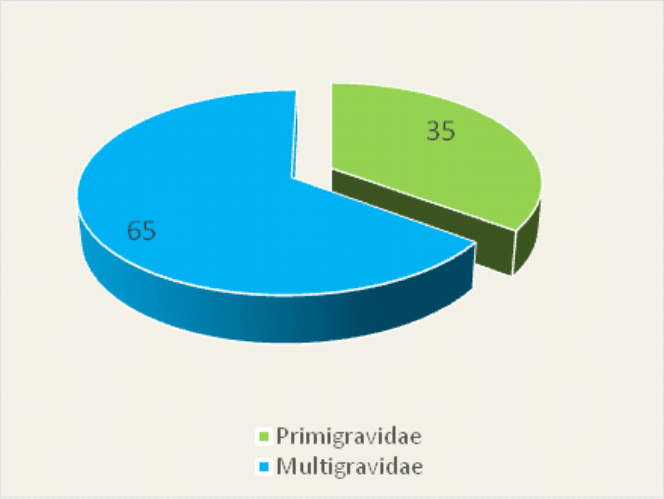

Figure 1: Parity Index of Pregnant Women

Age Distribution (Years)	Numbers	Percentages
15 -20	8	8
21 -25	53	53
26 -30	33	33
31 -35	5	5
36 -40	1	1
Total	**100**	**100**

Table I: Age distribution of pregnant women

Clinical manifestation in pregnant woman

Pruritus was the commonest symptom accounting for 28(28%) cases. Physiological changes were seen in 75(75%) cases and 11 (11%) cases of specific dermatoses of pregnancy were seen. Other dermatoses affected by pregnancy were seen in 35 cases (35%)(Figure 2). Out of 3 patients who suffered from sexually transmitted diseases, 2 had condyloma acuminata and 1 had latent syphilis.

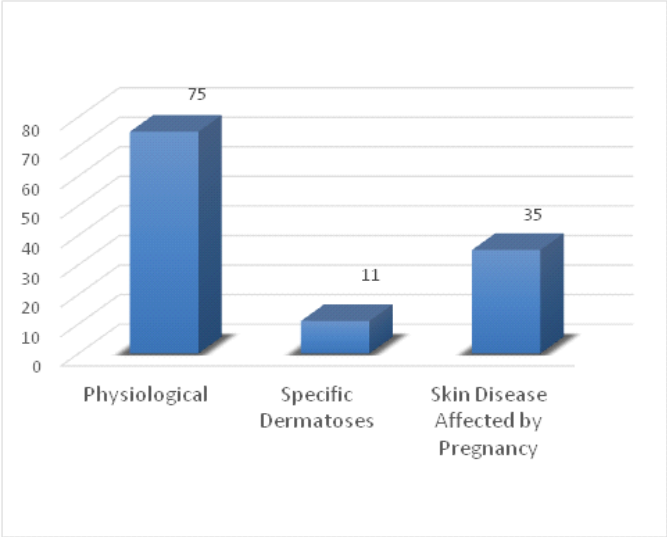

Figure 2: Type of skin condition in pregnant women

Physiological skin changes

Among the physiological skin changes observed, most common were pigmentary changes (41 cases) including melasma, linea nigra, areolar hyperpigmentation and hyperpigmentation of the skin (Figure 3). Melasma were seen in 32 cases, among which malar (80%) were the frequent presentation (Figure 4 and 5). In this study the vascular changes were seen in 15 cases (15%). Out of which non-pitting edema was the commonest 11 cases (11%) (Table II)

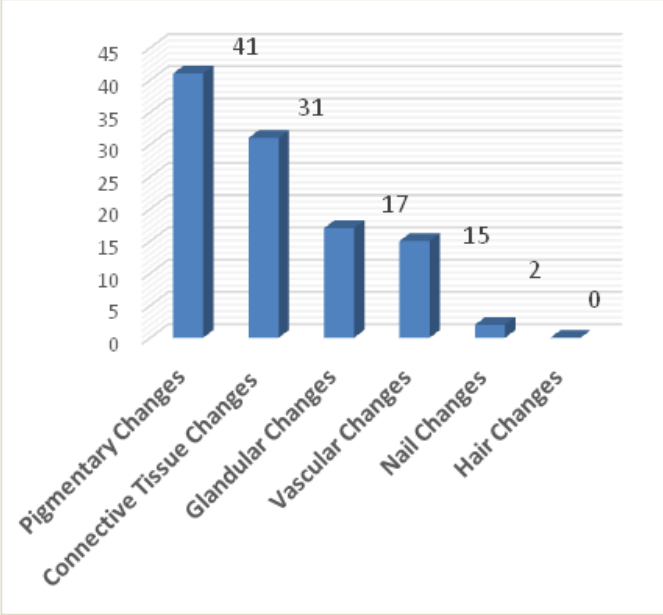

Figure 3: Pattern of physiological changes

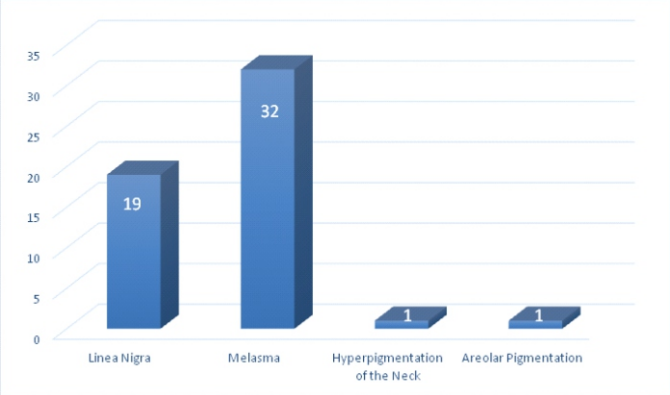

Figure 4: Pattern of pigmentary changes

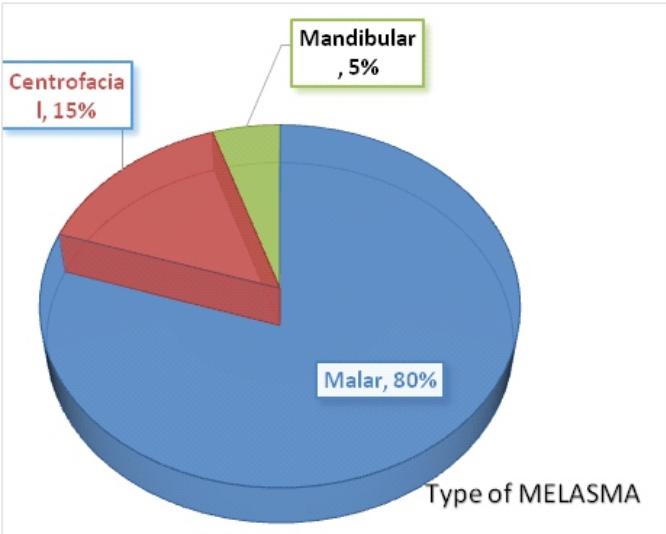

Figure 5: Pattern of Melasma

Type of Vascular Changes	Frequency
Non Pitting Edema of the Legs	10
Varicosity	2
Spider Telagiectasia	1
Jacquemier-Chadwick Sign	1
Goodell's Sign	1
TOTAL	15

Table II: Pattern of Vascular Changes

Specific dermatoses of pregnancy

Out of 100 pregnant women seen during the study, 10 pregnant women had specific dermatoses of pregnancy. In this study, 5 were found to have pruritic urticarial papules and plaques of pregnancy. Out of these 4 were primigravidae and 1 were multigravidae. Three cases of pruritis gravidarum were seen in this study. Out of these 2 were primigravidas and 1 was multigravidas. In all these 3 cases liver function tests were normal expect for raised alkaline phosphatase. One case of pruritic folliculitis of pregnancy and she was a primigravida. Two cases of prurigo of pregnancy and 2 cases of atopic eczema of pregnancy were seen (Figure 6).

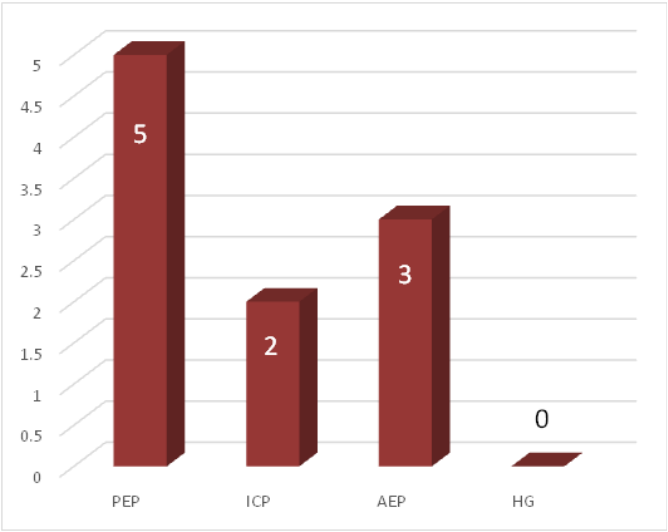

Figure 6: Pattern of Specific Dermatoses

Dermatoses affected by pregnancy

Pruritus was the commonest symptom accounting for 28 cases (28%). Among this infection were the commonly seen dermatoses. Out of 14 cases (14%) of infection, fungal infection was the commonest (6 cases) (Table III).

Type of INFECTION	Frequency
Bacterial	1
Fungal	6
Viral	4
Infestation	3
TOTAL	**14**

Table III: Pattern of Infection

DISCUSSION

Pruritus was the commonest symptom accounting for 28% and 7% cases had itching without any skin changes. According to Winton *et al*, pruritus from all causes may occur in 17% of pregnant women[2]. In our study the pruritus was due to dermatophytic infection, scabies, eczema and urticaria and contact dermatitis besides the pregnancy specific dermatoses which underscores the need for a meticulous search for the underlying disorder. Patients complaining of white discharge per vagina, candidiasis accounted for 1% of the cases. In contrary to our study, candidal vaginitis occurs 10 to 20 times more frequently during pregnancy according to Dotz *et al* and the view is shared by Winton *et al*[2,5]. Out of 3 patients who suffered from sexually transmitted diseases, 2 had condylomata acuminata and 1 had latent syphilis. In the study by Raj *et al* the incidence of syphilis was 0.9%. This emphasizes the need for routine serological screening for syphilis in all pregnant women[6].

In this study pigmentary changes occurred in 41 (41%) cases which included melasma (32%) 32cases, linea nigra seen was 19 cases (19%), hyperpigmentation of the neck was seen in 1% cases and areolar pigmentation was seen in 1%cases. Pigmentary changes occurred in 98.82% of the patients in a study done by Shivakumar *et al* [7]. Melasma was observed in 10.58% similar to the finding of Raj et al[6] Literature incidence of melasma in white skin is reported between 50 to 70%[2,8].

Wong Rc *et al*[8] reported 90% cases of striae distensae and in this study only 31% had striae distensae in which 20 cases were primigravidae and 11 cases were multigravidae. The onset was commonly seen during the third trimester .The most common site seen in primigravidas was lower abdomen and pink shiny striae whereas multigravidas showed mostly white atrophic striae. Striae is uncommon in Asian and African-American women and there seems to be a familial tendency[1]. Poindevin *et al*[9] in 1959, observed that women with lighter complexions had a greater tendency to develop striae compared with women of darker complexions.

In this study no pregnant women gave any history of hair changes and only 2 complained of brittle nail. In a study done by Rashmi Kumari *et al*[4], among 607 women, 11 gave a history of increased hair loss and only 5 patients noticed lengthening and improvement in their scalp hair, whereas 591 (97.4%) gave history of no change in hair density. Muzaffar *et al* [10] reported hair changes in 18 (12.8%) cases. Out of those 18 cases, diffuse thinning of scalp hair was noted in 7 (38.9%) cases. Nine (50%) patients noticed lengthening and improvement in their scalp hair. Frontoparietal recession and hypertrichosis was seen in one case each. Increased appearance of Montgomery's tubercles is well known during pregnancy in 30-50% of pregnant women[11]. In this study, montgomery's tubercles were seen in 15 cases (15%).

Vascular changes result from distention, instability and proliferation of vessels and regress postpartum. Non pitting edema of legs, eyelids, face and hands is present in about 50% of women during the third trimester[2]. The edema decreases during the day and is thought to be due to secondary sodium and water retention in conjunction with increased capillary permeability[11].Vascular changes seen in Rashmi Kumari *et al* study included nonpitting edema of feet in 59 (9.8%) cases and abdominal wall edema in 3 cases [4]. In this study the vascular changes were seen in 15 cases (15%). Out of which non pitting edema was the commonest 10 cases(10%),varicosity was seen in 2 cases ,in which 1 pregnant women had varicose of the lower legs and one with varicocele of the vulva. Varicosities are most common in anus and legs, appearing in 40% of pregnant women during the 3rd trimester[2] Raj *et al* [6] noted varicose veins in 6 out of 1,175 women. Vascular spiders were seen in 2 cases. Vascular changes in mucosa was not frequently in this study. Only 1 case of Jacquemier-Chadwick sign and Goodell's sign were seen. Esteve *et al* [12] observed vascular changes in 50 women including vascular spiders in 32 out of the 60 women. Out of 14 cases of infection seen, dermatophytic infection (6 cases) were common, 3 cases of scabies, and 4 cases of viral infection. 2 case of varicella was seen in third trimester, 1 cases of condylomata accuminata, 1 cases of molluscum contagiosum. Scabies was recorded in 17.64% of the cases and was the commonest condition recorded[7].

Specific dermatoses of pregnancy are almost always associated with pruritus and an eruption of variable severity. Holmes and Black[13] proposed a simplified clinical classification of the specific dermatoses of pregnancy. This classification basically

subdivided the specific dermatoses of pregnancy into four groups: (i) pemphigoid (herpes)gestationis (PG); (ii) polymorphic eruption of pregnancy (PEP); (iii) prurigo of pregnancy; and (iv) pruritic folliculitis of pregnancy (PF). The incidence of these specific disorders of pregnancy is 0.5 to 3.0% [14]. In this study of 100 pregnant women, 10 (10%) cases of specific dermatoses of pregnancy were seen. Of these the most common was PUPPP (polymorphic eruption of pregnancy) with a total of (5/10) cases followed by 2 cases of pruritus gravidarum (intrahepatic cholestasis of pregnancy) and atopic eruption of pregnancy were seen in 3 cases. Of the disorders specific to pregnancy, 1 had prurigo of pregnancy, 1 had eczema in pregnancy and 1 had pruritic folliculitis of pregnancy. In a study done by Rashmi Kumar *et al* showed 22 cases of specific dermatoses out of 607 cases. Out of 22, 14 cases were found to have polymorphic eruption of pregnancy and 5 cases of pruritus gravidarum.

CONCLUSION

Awareness about and recognition of their clinical presentation is important for correct diagnosis that will direct the most appropriate laboratory evaluation and careful management in an effort to minimize maternal and fetal morbidity. From our study an unequivocal impression can be drawn, that pregnant women are prone to suffer from a wide range of dermatological problems and sexually transmitted diseases, apart from the specific dermatoses of pregnancy. In our study the physiological changes were more common as compared to the specific dermatoses of the pregnancy. Though physiological changes many times only need reassurance, as a physician we should not neglect performing thorough examination to distinguish physiological and other dermatoses of pregnancy as they might cause maternal and fetal morbidity and sometimes mortality and sometimes need early intervention.

LIMITATIONS OF THE STUDY

- A much larger sample size would be clearly indicated to draw more valid inferences to the larger population.
- The incidence of the skin changes in pregnant women was not evaluated, only the patterns were described.

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A Comparative Study Of Surgical Outcome In Different Approaches For Hysterectomy

Tamrakar SR[1]

ABSTRACT

Introduction: -Globally, hysterectomy has been the commonest gynecologic surgery since a long time. One of the most remarkable innovations in surgery has been the changeover from laparotomy to laparoscopy. The first reported laparoscopic hysterectomy was in 1989 by Harry Reich, for endometriosis. As laparoscopic procedure has various important advantages over laparotomy, it has become a preferred surgical method. But open hysterectomy or laparoscopic hysterectomy has been chosen based on various factors and the surgeon's experience and skill. Earlier hysterectomies were done in conventional way at Kathmandu University Hospital. But Laparoscopic assisted vaginal hysterectomy and total laparoscopic hysterectomy were started from 2011 and 2015 respectively. **Method:** This retrospective study was undertaken to compare the demographic parameters, operative particulars, postoperative outcomes including complications of different hysterectomy approaches done from 2011 to 2018 at Kathmandu University Hospital. **Result:**A total of 756 hysterectomy cases with 461 of open hysterectomy and 295 of laparoscopic hysterectomy were done in over 8 years. There was no significant difference in mean age of patients who underwent different types of hysterectomies (46.29±6.50 and 45.52±8.15 years, p=0.6829). There was significant increase in Brahmin/Chhetri caste seeking laparoscopic hysterectomy (p=0.0001) and significant decrease in other janajati caste undergoing laparoscopic hysterectomy (p=0.0004). The indications of different type of hysterectomy were almost comparable; with fibroids/adenomyosis (49.7%) followed by abnormal uterine bleeding (19.7%) were common indications. Laparoscopic hysterectomies have significantly increased since 2016. There were significant differences in operating time, blood loss and hospital stay between open and laparoscopic hysterectomy cases with 143.63±43.25 vs 67.56±25.75 minutes**,** 294.78±51.37 vs 470.24±102.99 ml and 2.61±0.66 vs 5.64±0.69 days respectively (all p<0.0001). There were 30 major complications in open and 10 in laparoscopic hysterectomy respectively with 9 minor complications in both. Eleven laparoscopy cases (3.7%) had to be converted to laparotomy. **Conclusions:** Laparoscopic hysterectomies are possible with equivalent advantages. A good laparoscopic experiences for surgeons and a careful selection of the cases are the obligatory prerequisites.

Keywords: *Conversion, Fibroids, Hysterectomy, Laparoscopy Hysterectomy (LH), Laparoscopy Assisted Vaginal Hysterectomy(LAVH), Total Abdominal Hysterectomy(TAH)*

INTRODUCTION

Globally, hysterectomy has been the commonest gynecologic surgery worldwide since long time[1]. The aspiration for minimal invasive surgery and the capacity of surgeons to update surgical skills has contributed to the significant recent developments in laparoscopic surgery[2].

One of the most remarkable innovations in surgery has been the changeover from laparotomy to laparoscopy. The first reported laparoscopic hysterectomy was in 1989 by Harry Reich, for endometriosis. Since then, laparocopic hysterectomy has been considered as an alternative to abdominal hysterectomy[3]. Laparoscopic procedure have various important advantages over laparotomy, hence it has become preferred surgical method[4,5].

Total abdominal hysterectomy (TAH) or laparoscopic hysterectomy has been chosen based on various factors and the surgeon's experience and skill. However, laparoscopic hysterectomy has a longer learning curve, takes longer to perform and has been known to have a higher complication rate than abdominal hysterectomy, particularly in initial period[6].

In Dhulikhel Hospital (DH), also known as Kathmandu University Hospital (KUH), gynecological surgeries including hysterectomies are being regularly done in conventional way till 2011. Laparoscopic assisted vaginal hysterectomy (LAVH) service started and regularly being performed since February 2011. Later total laparoscopic hysterectomy (TLH) service was

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started from June 2015.

Though, there are ample of comparative studies done in the field of hysterectomy approaches, only limited publications related to experiences of gynecological minimal invasive surgeries available from Nepal[7-10]. Earlier, there is no such comparative study done in KUH. This retrospective study aimed to compare the operative data and postoperative outcomes and complications of different hysterectomy approaches (TAH versus LAVH or TLH) for benign gynecological conditions in women at KUH.

METHOD

This retrospective (comparative) study of the different hysterectomy approaches (TAH vs LAVH or TLH) done in women who underwent these surgeries between 2011 and 2018 in DH. This study was carried out in Department of Obstetrics and Gynaecology reviewing all the OPD/inpatient and Operation Theater (OT) records (including electronic).

For analysis purpose, TAH and staging laparotomy were considered as open hysterectomy (OH) and LAVH and TLH were considered as laparoscopic hysterectomy (LH) in the study.

Ethical clearance was taken from the hospital research committee (IRC-KUSMS#39/19). All data were entered in excel sheet and analyzed by SPSS 16 packages using appropriate statistical tools like frequency, percentage, means, p value, Chi square test.

RESULTS

Operative procedures	Age (mean±SD) in years	P value (95% confidence interval)	Remarks
Laparoscopic hysterectomy (n=295)	46.29±6.50	0.6829 (-1.3359 to 0.9759)	
Open hysterectomy (n=461)	45.52±8.15		
LAVH (n=190)	46.41±6.56	0.4891 (-1.0316 to 2.1516)	P values of lap to open conversion with LAVH and TLH are 0.4448 and 0.2962 respectively (not significant)
TLH (94)	45.85±6.10		
Lap to open conversion (n=11)	48.00±8.90		
TAH (n=413)	44.77±7.08	**0.0001** (-9.5638 to -4.8562)	
Staging laparotomy (n=48)	51.98±12.77		

Table I: Mean ages of different hysterectomy cases

There was no significant difference in mean ages of different groups except that between TAH and staging laparotomy group (Table I).

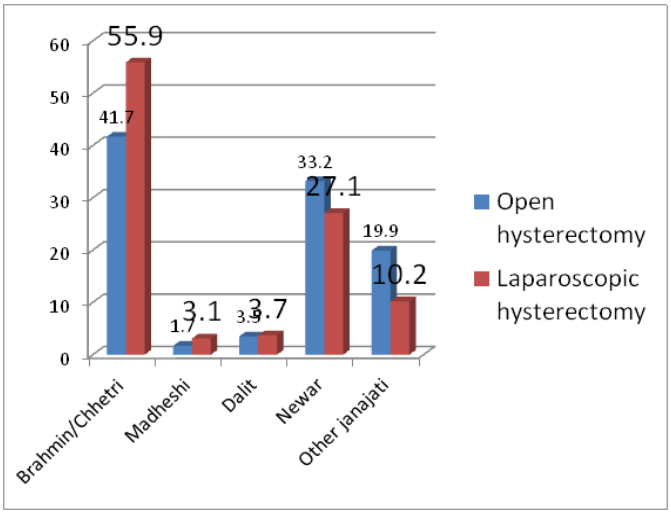

Figure 1: Caste distribution of hysterectomy cases (open and laparoscopic)

There was significant increase in Brahmin/Chhetri caste seeking laparoscopic hysterectomy (p=0.0001) and significant decrease in other janajati caste undergoing laparoscopic hysterectomy (p=0.0004). There is not much difference in patients coming for open or laparoscopic hysterectomy from different parts of Nepal. Patients undergoing laparoscopic hysterectomy or open hysterectomy from Kavre, neighbouring districts (Sindhupalchowk Dolakha Ramechhap Sindhuli), Kathmandu valley and other districts were 144 (48.8%) and 242(52.5%), 36(12.2%) and 66(14.3%), 87(29.5%) and 124(26.9%); 28(9.5%) and 29(6.3%) respectively.

Indication	Operation	Present	Absent	P value
Fibroids/ Adenomyosis	Laparoscopic hysterectomy (n=295)	137	158	0.1472 (not significant)
	Open hysterectomy (n=461)	239	222	
Abnormal Uterine Bleeding (AUB)	Laparoscopic hysterectomy (n=295)	79	216	<0.0001
	Open hysterectomy (n=461)	70	391	
Ovarian lesions	Laparoscopic hysterectomy (n=295)	13	272	<0.0001
	Open hysterectomy (n=461)	93	369	
Cervical lesions	Laparoscopic hysterectomy (n=295)	31	264	0.0644 (not

	Open hysterectomy (n=461)	31	430	significant)
Chronic pelvic pain/ Endometriosis	Laparoscopic hysterectomy (n=295)	17	278	0.0165
	Open hysterectomy (n=461)	11	450	
Polyp (cervical/endo metrial)	Laparoscopic hysterectomy (n=295)	10	285	0.1455 (not significant)
	Open hysterectomy (n=461)	8	453	
Miscellaneous	Laparoscopic hysterectomy (n=295)	8	287	0.4920 (not significant)
	Open hysterectomy (n=461)	9	452	

Table II: Indications of hysterectomy (open and laparoscopic)

The indications of different type of hysterectomy were almost comparable (Table II). But there was significant difference in operation (OT) duration, blood loss and hospital stays between those underwent open and laparoscopic hysterectomy (Table III).

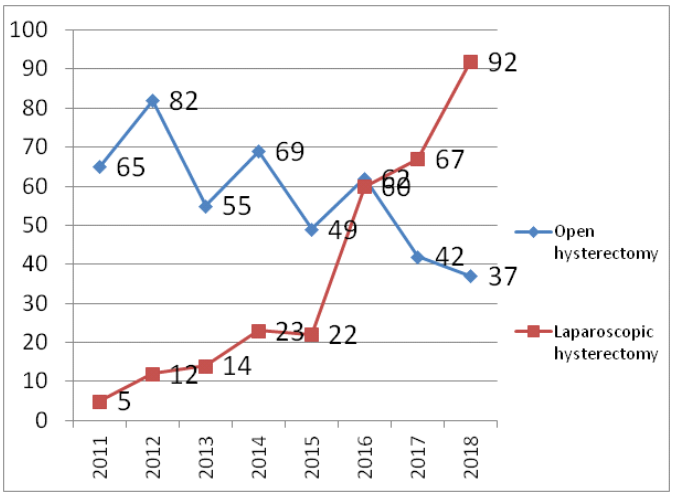

Figure 2: Trend of hysterectomy cases (open and laparoscopic)

Laparoscopic hysterectomy cases were gradually going up in comparison to open hysterectomy cases, significantly from 2016 (Figure 2). Different complications (major and minor) and laparoscopy conversion to laparotomy showed in Table IV.

Operative procedures	**OT duration (mean±SD) in minutes**	**P value (95% confidence interval)**
La paroscopic hysterectomy (n=295)	143.63±43.25	**<0.0001** (-81.0027 to -71.1373)
Open hysterectomy (n=461)	67.56±25.75	
	Blood loss (mean±SD) in ml	
Laparoscopic hysterectomy (n=295)	294.78±51.37	**<0.0001** (162.7738 to 188.1462)
Open hysterectomy (n=461)	470.24±102.99	
	Hospital stay (mean±SD) in days	
Laparoscopic hysterectomy (n=295)	2.61±0.66	**<0.0001** (2.9306 to 3.1294)
Open hysterectomy (n=461)	5.64±0.69	

Table III: Differences in OT duration, blood loss and hospital stays

Complications	**Open hysterectomy (n=461)**	**Laparoscopic hysterectomy (n=295)**
Major		
Bladder injury	1	-
Ureteral injury	1	2
Bowel injury	2	-
Vesicovaginal fistula	-	1
Major vessel injury	-	-
Vaginal cuff dehiscence	-	-
Burst abdomen	3	-
Blood transfusion	23 (maximum 3 pints)	7 (maximum 2 pints)
Minor		
Vault bleeding	2	3
Wound infection	7	-
Trocar hernia	-	-
Cautry burn	-	3
Subcuteneous haematoma	-	3
Total complication	39	19
Number of conversion to laparotomy	-	11

Table IV: Complications occurred during hysterectomy

DISCUSSION

One of the most remarkable innovations in surgery has been the changeover from laparotomy to laparoscopy. The first reported laparoscopic hysterectomy was in 1989 by Harry Reich, for endometriosis. Since then, laparoscopic hysterectomy has been considered as an alternative to abdominal hysterectomy[3]. The aspiration for minimal invasive

surgery and the capacity of surgeons to update surgical skills has contributed to the significant recent developments in laparoscopic surgery[2].

Beside mean age, caste and address of the patients (Table I and Figure 1), indications of different hysterectomy in DH are almost comparable (Table II) except that of Brahmin/Chhetri and other janajati caste; and AUB and ovarian lesions.

In this study, mean age of the patients underwent OH and LH were 45.52±8.15 and 46.29±6.5 years respectively (Table I). This was almost similar to study finding of Naveiro M, et al[11], in which mean age was 45.2± 5.7 years (first 75 LH), 48.3±10.2 years (second 75 LH) and 50.8±11.7 years (third 86 LH). And, in a study by Song T, et al[12] (n=100) of single-port access (SPA)-LAVH , the mean age of the patients was 45.8±5.1 years. But the mean age was comparatively high in studies by Terzi H, et al[13] and Pather S, et al[14] with 48.9 ± 5.9 years; and 59.1 (OH) and 56.2 (LH) respectively.

The most common indications of hysterectomy were fibroid/adenomyosis followed by AUB[15]. This was similar to study by Harkki Siren P, et al[16] in which indications for laparoscopic hysterectomy were uterine fibroids (64%) and menorrhagia (20%). Kim SM, et al[2] showed the indications of TAH and multi-port access (MPA)-TLH were myoma 162 (57%) and 224 (61.2%) followed by adenomyosis 61 (21.5%) and 55 (15%) respectively. Additional 40(14.1%) and 49(13.4%) were myoma with adenomyosis.

In a study by Song T, et al[12], pathologic diagnoses at hysterectomy included myoma (48%), myoma combined with adenomyosis (23%), adenomyosis (21%), endometrial hyperplasia (4%), and cervical carcinoma in situ (3%), and chronic pelvic pain combined with endometriosis (1%).Likewise Terzi H, et al[13] shared the indications TLH were AUB 89 (34.6%), myoma uteri 65(25.3%) and AUB and myomauteri 48(18.7%).

Indications of hysterectomy were also similar in this study. Fibroids 46.4% and 51.8% followed by AUB 26.8% and 15.2% in LH and OH respectively (Table II). Terzi H, et al[13] showed prolpsus uteri 4 (1.6%) was the one of the indications. In our study five LH and one OH were done for prolapsed uterus. Likwise Kim SM, et al[2] showed CIN 2,3 were indications for TAH and MPA-TLH were 11 (3.9%) and 16 (4.4%) respectively. In this study 13 LH and 20 OH were done for CIN2, 3 and beyond.

Average operation duration of OH and LH were 67.56±25.75 minutes and 143.63±43.25 years respectively in this study (Table III). This was similar to study finding of Agarwal P, et al[15] and exactly same to study finding of Garett AJ, et al[17]. The average time required in TLH in the first year after starting surgery was 147.37 min compared to 84.84 min in TAH[15]. Mean operating time was 143.1 ± 40.4 minutes[17]. The operating time was shorter in the studies by Terzi H, et al[13], Harkki Siren P, et al[16] and Song T, et al[12] with 70.4 ± 15.4 minutes, 109±45 minutes and 115.7±40.3 minutes respectively. And the operation time was longer in the studies by Kim SM, et al[2] and Pather S, et al[14]. Total operative time was 176.4±47.9 minutes in TAH and 149.3±59.5 minutes in MPA-TLH[2]. Mean operation time was 226 minutes in first 25 TLH cases, 200 minutes in last 25 TLH cases and 175.5 minutes in OH[14].

Average intraoperative blood loss was significantly lower in TLH as opposed to TAH. Amout of blood loss was 411.82±70.10 ml (TAH) and 145.12±29.51 ml (TLH)[15]. Kim SM, et al[2] found the estimated blood loss 427.1 ± 250.6 ml in TAH and 163.8 ± 168.9 ml in MPA-TLH. In this study average blood loss was 470.24±102.99 ml (OH) and 294.78±51.37 ml (LH) (Table III). Mean estimated blood loss was 307.6 ± 246.3 ml[17]. That was 250-215 ml[16].

While we prefer laparoscopic to conventional (open) gynecological surgeries, we are anxious about its complications. In this study the conversion to laparotomy was 3.7% (11 out of 295 LH cases) (Table IV). The reasons for conversion were big myoma (6), dermoid cysts (2), grade IV endometriosis (2) and adenomyosis (1).

Conversion to an open laparotomy was needed in one percent[12]. Total conversion rate was 2.9%[18]. Seventeen cases from the MPA-TLH group (n = 366) required unplanned intra-operative laparotomy conversion[2].Total rate of conversion to laparotomy was 9.6 % (12 out of 125)[15]. Eight of 120 patients (6.6%) required conversion to laparotomy[17]. Conversion to laparotomy was 9(12.0%) in first 75 LH, 9(12.0%) in second 75 LH and 1(1%) in third 86 LH, showing gradual decrease in conversion rate[11]. Conversion to laparotomy generally occurred more frequently in the early learning phase[19].

In the literature, the rates varied for conversion from laparoscopy to laparotomy, from 6.6% to 0.03%[17,19-21]. The complications were related to advanced disease and broad adhesions rather than due to laparoscopy, itself. Our rate of conversion to laparotomy was 1.9%[13].

In this study average duration of hospital stay was 5.64±0.69 days and 2.61±0.66 days in OH and LH group respectively (Table III). The average durations of hospital stay in TAH group were 5.68±3.10 days and 3.58±1.97 days in TLH[15].

The mean hospital stay was 1.3±0.5 days[16]. That was 2.4 ± 1.4 days (entire TLH group)[17]. Naveiro M, et al[11] shared their hospital stay findings with 4.0± 3.1days, 2.9±1.2 days and 2.5±1.6 days in first 75 LH, second 75 LH and third 86 LH respectively. Kim SM, et al[2] found hospital stay 7.0±2.1 days in

TAH and 5.5±2.0 days in MPA-TLH group.

Mean length of stay was 2.62 days in first 25 TLH cases, 1.82 days in last 25 TLH cases and 3.38 days in OH[14]. The median postoperative hospital stay was 3 days (range 3–7 days)[12] . And stay in hospital was 3.4±1.2 days[13].

The total complication rate was 6.2%. Complications were classified as major (3.1%) and minor (3.1%)[13]. Driessen S, et al[18] experienced complications of 4.7%. Incidence of major complications in TLH was 1.6 % (2 in 125) compared to 4 % (5 in 125) in TAH group. Incidence of minor complications in TLH group was 7.1 % (9 out of 125) compared to 9.7 % in TAH group (12 out of 125). Incidence was 14 % (3 out of 22) in the first year[15]. Kim SM, et al[2] faced overall 15 complications (5.3%) in TAH compared to 32(8.7%) in MPA-TLH group. Kim

We experienced 39(8.5%) complications in OH and 19(6.4%) in LH group (Table IV). Naveiro M, et al[11] found overall complications 18 (24%) in first 75 LH, 7 (9.3%) in second 75 LH and 7 (8.1%) in third 86 LH cases.

Terzi H, et al[13] showed the need for blood transfusion in 11 (4.3%). We found blood transfusion in 23 (5.0%) in OH and 7 (2.4%) in LH group.

CONCLUSION

We compared the postoperative outcomes and complications of different hysterectomy approaches in the field of gynaecological surgeries.Laparoscopic hysterectomies are possible with equivalent advantages while managing gynecological lesions as well. Thorough laparoscopic experiences of surgeons and careful selection of the cases are the obligatory prerequisites.

CONFLICTS OF INTEREST

Author declares that there is no financial support or relationships that may pose potential conflicts of interest.

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Correlation Between The Severity And Outcome Of Acute Calculous Cholecystits According To Tokyo Guidelines

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ABSTRACT

Introduction: Acute Calculous Cholecystitis is a condition in which the gallbladder becomes inflamed due to cholelithiasis. Early diagnosis, severity grading and appropriate intervention reduce both morbidity and mortality. The aim of this prospective study is to correlate the severity with the outcome of acute calculous cholecystitis according to Tokyo Guidelines. **Methods:** This was a hospital based prospective study conducted in the Department of Surgery, Nepalgunj Medical College Teaching Hospital for a period of two years from April 2017 to March 2019. The patients were classified into three groups according to the severity grading in the Tokyo guidelines (TG18/ TG13). Clinical characteristics among these patients were analyzed for comparison.

Results: Among all diagnostic criteria, right upper quarter (RUQ)h abdominal pain (94%) Murphy's sign (94%) and thickened gallbladder wall (80%) had the highest sensitivity rates ($p<0.032$), whereas elevated white cell count (32%) and RUQ abdominal mass (32%) had the lowest sensitivity rates ($p<0.035$). Higher sensitivity rates of diagnostic criteria were related to severe cholecystitis, except for Fever (46%) and elevated white blood cell (WBC) count (32%). All the 28 patients in grade I and selected patients 3 out of 6 in grade II underwent early laparoscopic cholecystectomy (LC) without any conversion and increased morbidity and mortality. Out of 16 patients in grade III there was 2 mortalities due to ARDS, 1 needed Ultrasonography (USG) guided cholecystostomy, 1 underwent emergency cholecystectomy. 16 patients, 3 in grade II and 13 in grade III underwent interval laparoscopic cholecystectomy safely. There were no major postoperative morbidities except for superficial surgical site infection (SSI) in 1 patient in grade III who underwent emergency cholecystectomy Higher grade of severity was associated with increased morbidity and mortality ($p<0.03$).

Conclusion: A combination of diagnostic criteria with different pathophysiologic findings, as noted in the Tokyo guidelines, can help clinicians make the correct diagnosis for patients with acute cholecystitis and there was strong correlation between the severity and outcomes of acute cholecystitis.

Key words: *Cholecystitis, cholecystectomy, Murphy's sign, Tokyo guidelines, Ultrasound*

INTRODUCTION

Cholecystitis is inflammation of the gallbladder. cholecystitis occurs most commonly due to blockage of the cystic duct with gallstones (cholelithiasis)[1, 2]. Concentrated bile, pressure, and sometimes bacterial infection irritate and damage the gallbladder wall, causing inflammation and swelling of the gallbladder[1]. Acute Cholecystitis (AC) is diagnosed based on the characteristic symptoms of right upper abdominal pain, nausea, vomiting and fever as well as laboratory testing showing an increased white blood count[3]. Abdominal ultrasound is widely used in diagnosis[4]. As is well known, early diagnosis of acute cholecystitis allow prompt treatment and reduces both mortality and morbidity. Therefore, the Tokyo Guidelines (TG-07) were proposed for the diagnosis and severity assessment of acute cholecystitis, based on the best available evidence and the expert's consensus[4] which was modified to Tokyo Guidelines (TG 13) and then in 2018, adopted unchanged as Tokyo Guidelines TG18/ TG13 in light of results from many validation studies[5].

Acute cholecystitis (AC) is very common problem in Nepal. But there is paucity of report regarding the use of TG 18/ TG13 for diagnosis and to assess the severity of AC in Nepal. Therefore, this study was conducted for the diagnosis and evaluation of a severity grading of acute cholecystitis in this part of Nepal.

MATERIAL AND METHODS

This was a hospital based prospective study conducted in the Department of Surgery, Nepalgunj Medical College Teaching Hospital from April 2017 to March 2019. All patients with suspected diagnosis of Acute calculous cholecystitis were included. Patients with acute acalculous cholecystitis; acute

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cholecystitis associated with malignancy of gallbladder, bile duct, liver or pancreas; Diabetic patient; immunocompromised patient; already treated patients; ascites were excluded.

Clinical diagnosis of acute cholecystitis was made by the presence of one of the local signs of inflammation: Murphy's sign, RUQ abdominal pain or mass or tenderness assessed by physical examination and one of the systemic signs of inflammation i.e. fever, elevated WBC count and elevated CRP[8]. Ultrasonography of abdomen and pelvis wad done in all cases to confirm the diagnosis and if it showed one of the following findings the diagnosis was confirmed.1. Enlarged gall bladder 2.Thickening of gall bladder wall 3. Gall bladder stones 4. Pericholecystic fluid5. Positive Sonographic Murphy's sign[15].

These patients were classified in to 3 grades of severity as: A) Mild (Grade I): 1. No organ dysfunction 2. Disease limited to GB. B) Moderate (Grade II): 1. No organ dysfunction 2. Extended Disease of GB 3. WBC increased 4. Palpable / tender mass 5. Duration >72 hours 6. Significant inflammatory change in Gall bladder on USG)

Severe (Grade III): Presence of dysfunction of any one of the following organs/systems:

1. Cardiovascular dysfunction Hypotension requiring treatment with dopamine >5ug/kg per min, or any dose of norepinephrine
2. Neurological dysfunction Decreased level of consciousness
3. Respiratory dysfunction PaO2/FiO2 <300
4. Renal dysfunction Oliguria, creatinine [>2.0 mg/dl]
5. Hepatic dysfunction PT-INR [>1.5]
6. Hematological dysfunction Platelet count <100,000/mm3

The patients were managed according to the management protocol of Tokyo's guidelines depending up on the grade. All patients with grade I and grade II severity who presented within 72 hours and those who didn't have palpable gall bladder underwent cholecystectomy within same hospital admission. Those patients who presented after 72 hours and had palpable mass were treated conservatively and were operated electively after six weeks. Patients with grade III severity were managed conservatively in Intensive Care Unit (ICU). USG guided cholecystostomy or emergency cholecystectomy was performed in case of deterioration of signs and symptoms or rising WBC count and worsening biochemical parameters like renal function, liver function tests.

This was the end point for assessment of severity and its out comes in patient with acute cholecystitis according to Tokyo's guidelines.

All data were analyzed using statistical Package for Social Science (SPSS).

RESULTS

Over a period of 2 years, 50 patients met the criteria for inclusion. There were 39 (78%) females and 11 (22%) males. The mean age of patient was 46.44±16.59 years. According to the severity grading mean age of patient was 40.14±15.53, 45.83±14.40 and 57.69±13.69 years respectively in grade I, II and III respectively. According to the severity grading of Tokyo's guidelines (TG18/TG13) 28(56%) cases were graded as grade I, 6(12%) cases as grade II and 16(32%) cases as grade III. Out of 50, 47 (94%) cases had positive Murphy's sign. Right upper quadrant (RUQ) pain was seen in 47(94%) whereas RUQ mass was observed in 16(32%) cases. (Table I)

Local sign of inflammation	Grade			Total (50)
	I(28)	II(6)	III(16)	
Murphy's sign	25(50%)	6(12%)	16(32%)	47(94%)
RUQ pain	25(50%)	6(12%)	16(32%)	47(94%)
RUQ mass	2(4%)	5(10%)	9(18%)	16(32%)

Table I: Distribution of local signs of inflammation and Grading of Severity

Out of 28 cases of grade I, 25 (89%) were having murphy's sign positive. All 6 (100%) cases of grade II and all 16 (100%) cases of grade III were having murphy's sign positive. Presence of Murphy's sign was significant and indicated higher grade of severity of disease (p<0.032).

In severity of grading system 25 (89%) cases of grade I, 6 (100%) cases of grade II, and 16(100%) cases of grade III were having RUQ pain. RUQ pain was a significant finding in the assessment of severity (p<0.034).

Systemic sign of Inflammation	Grade I	Grade II	Grade III
Fever	5(10%)	6(12%)	12(24%)
Elevated WBC count	0	6(12%)	10(20%)
Elevated CRP	4(8%)	6(12%)	16(32%)

Table II: Comparison of Systemic signs of inflammation with grades of AC

In grade I out of 28 cases, 5(10%) cases were having fever, in grade II all 6 cases (100%) were having fever and in grade III out of 16 cases, 12 (75%) cases were having fever.

Out of 50 patients, 16 (32%) had elevated WBC count. None of the patients in grade I had elevated WBC Count, all 6 (100%) patients in severity grade II and 10(62.5%) in severity grade III had elevated WBC count . Elevated WBC count was associated with increase in severity of disease with p value of 0.035 (p<0.035). (Table II)

Sonographic finding	Grade I 28(56%)	Grade II 6(12%)	Grade III 16(32%)	Total 50(100%)
GB wall thickness>4 mm	18(36%)	6(12%)	16(32%)	40(80%)
Pericholecystic collection	5(10%)	4(8%)	14(28%)	23(46%)
Enlarged GB	9(18%)	4(8%)	15(30%)	28(56%)
POSISTIVE SONOGRAPHIC MURPHY'S SIGN	8(16%)	4(8%)	16(32%)	28(56%)

Table III: Comparison of USG findings with Grades of AC

40 patients had GB wall thickened (>4mm) on USG. Among them 18(36%) were in grade I, 6(12%) in grade II and 16 (32%) in grade III. Out of 23(46%) patients having songraphic finding of pericholecystic collection, there were 5(10%) patients with grade I, 4 (8%) with grade II and 14(28%) with grade III. Out of 28(56%) patients with enlarged gall bladder, there were 9(18%) patients in severity grade I, 4 (10%) in severity grade II and 15(30%) in severity grade III. Enlarged gall bladder was least common sonographic finding to confirm AC**.** 28(56%) had positive sonological Murphy's sign. Among them 8(16%) were in grade I, 4(8%) in grade II and 16(32%) in grade III. (Table 3)

There were 16 patients in grade III. Out of 16 patients, 10(62%) had hypotension only, 3(19%) had hypotension as well as Acute Kidney Injury (AKD) and 3(19%) patients had Acute Respiratory Distress Syndrome (ARDS) and AKI. All patients were managed in ICU. None of the patients with AKD required Hemodialysis (HD). 6 patients needed ionotrope support for hypotension refractory to fluid resuscitation. Among 3 patients with ARDS and AKI who were on Mechanical Ventilation (MV), there were 2 (4%) mortalities due to ARDS and 1patient needed USG guided cholecystostomy due to empyema gall bladder not improving with antibiotics, patient improved, was out of ventilator and discharged. 1 (2%) patient with hypotension and AKI developed generalized peritonitis during ICU admission, bedside USG was done which showed collection in Morrison's space revealing bile on aspiration, and thus emergency open cholecystectomy was done. Intraoperatively he had gangrenous cholecystitis with perforation, patient did well.

All 28 patients in grade I and 3 patients in grade II who presented within 72 hours and didn't have palpable GB underwent early laparoscopic cholecystectomy (LC) on same hospital admission. There was no conversion in grade I, 1 patient in grade II who underwent early cholecystectomy had to be converted due to dense adhesions. No mortality in grade I and II, 2 mortality in grade III. 3 patients in grade II and 13 patients in grade III underwent elective LC after 6-8 weeks, and there was no conversion to open cholecystectomy. Patient undergoing emergency cholecystectomy had superficial surgical site infection (SSI) which healed with dressing and antibiotic therapy. As the grade of severity of AC increased the morbidities and mortalities increased (p<0.03) (Table IV)

Grade	Early LC	Emergency cholecystectomy	Interval LC	Postop complication	Cholecystostomy	Ionotrope support	HD	MV	Mortality
I (28)	28 (56%)	0	0	0	0	0	0	0	0
II(6)	3 (6%)	0	3(6%)	0	0	0	0	0	0
III(16)	0	1(2%)	13(26%)	1 (2%)	1(2%)	6(12%)	0	3 (6%)	2(4%)
Total (50)	31 (62%)	1(2%)	16(32%)	1(2%)	1(2%)	612%)	0	3 (6%)	2(4%)

Table IV: Correlation of Severity of AC with Outcomes

DISCUSSION

In present study Murphy's sign (94%) and tenderness (94%) in the RUQ abdomen are frequent signs, followed by fever (58%), a palpable abdominal mass (32%), systemic sepsis and organ failure (20%)[6, 7]. The gold standard for diagnosis of acute cholecystitis is pathological examination of the gallbladder. There is still controversy regarding the optimal criteria for clinical diagnosis. Therefore, the Tokyo guidelines were proposed for the diagnosis and severity assessment of acute cholecystitis, based on the best available evidence and the experts' consensus achieved at the International Consensus Meeting for the Management of Acute Cholecystitis and Cholangitis held on 1–2 April 2006 in Tokyo [4,8]. Furthermore, the Tokyo guidelines also provide recommendations for management depending on the severity of acute cholecystitis[6]. Abdominal ultrasonography is the imaging study most commonly used in diagnosis. In studies conducted by Ralls et al. (1985) and Bree et al.(1995), the sensitivity rate for positive ultrasonographic Murphy's sign ranged from 86 to 92%, and the rates for stones and thickening of the gallbladder wall varied from 93 to 95% [9,10]. Present study also showed a high sensitivity rate for thickened gallbladder wall (80%) and a relatively low rate for pericholecystic fluid (46%) collected as the severity of disease progressed which is similar to study conducted by Lee et al 2010 which also showed a high sensitivity rate for thickened gallbladder wall (92.3%) and very low rate for pericholecystic fluid (18.3%) collected as the severity of disease progressed[6].

As for local signs of inflammation present study demonstrated that RUQ abdominal pain has sensitivity rate as high as 94 %. These values were similar to report of study conducted by

Ralls et al in 1985[9]. RUQ abdominal mass, defined as a distended and palpable gall bladder, was less (32%) in our patients with acute cholecystitis. The incidence was lower; this might be due to the exclusion of malignancy of the bile duct, gallbladder, liver or pancreas in present study.

In present study, 100 %, 100 % and 90% of patient of Grade III, II and grade I respectively have Murphy's sign positive, similar to study conducted by Robert et al. in 2003[11]. Using a combination of clinical symptoms, signs and laboratory results can help clinicians accurately diagnose acute cholecystitis [11]. Only two studies conducted by Dunlop et al. in 19890 and Gruber et al. in 1996, however, evaluated the diagnostic value of such a combination, and both of them focused on the same underlying pathophysiologic process, such as the combination of fever and leukocytosis, providing no synergistic diagnostic effect [12, 13]. Present study demonstrated the diagnostic value of combining findings with independent processes, for example, high sensitivity rates in combination with positive typical image findings, RUQ abdominal pain and elevated C-reactive protein.

Comparison of patients with and without typical image findings showed that both RUQ abdominal pain and elevated WBC count had acceptable sensitivity rates for the diagnosis of acute cholecystitis. On the contrary, elevated C-reactive protein had clinical diagnostic value only in those patients who had typical ultrasonography images supporting acute cholecystitis, which was consistent with the results of a study conducted by Juvonen et al. in 1992[14]. In this study only 46% of patient were having fever and 32% of patient were having elevated WBC count which may be due to patient were already getting antipyretic medication and antibiotic outside.

In study conducted by Kabul et al. (2015), out of 23 patient of Grade III 11 cases (47%) were observed with renal dysfunction, 8 cases (35% were observed with hepatic dysfunction, 4 (18%) cases were observed with cardiac and respiratory dysfunction and none of the patient were observed with neurological dysfunction[15]. In present study out of 16 cases of Grade III, 10 cases (62%) were observed with hypotension, 3 cases (19%) were observed with hypotension with AKI, 3 cases (19%) were observed with ARDS and AKI. None of the patient was observed with neurological dysfunction.

CONCLUSION

This study demonstrated that RUQ abdominal pain, presence of murphy's sign and thickened gallbladder wall had the highest sensitivity rates among all diagnostic criteria and also indicates higher severity of AC. There was a strong correlation between the severity of the acute cholecystitis and outcomes.

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A Study of Variation of Nutrient Foramen of Dry Adult Humerus

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ABSTRACT

Introduction: Nutrient artery is the chief artery for the blood supply of the long bone and passes through the nutrient foremen which lie towards the medial border in the anteromedial surface below the midpoint in humerus. During the surgical procedures like bone grafting and microsurgical vascularized bone transplantation, the knowledge of nutrient foramen is important. The nutrient artery plays an important role in nonunion and delayed union of fracture bone. **Aims and Objectives**: The aim of this study is to determine the number, position and direction of the nutrient foramina of humerus. **Materials and Methods:** 50 humerus, 21 of right and 29 0f left side were studied without any pathological disorders. **Results:** Single nutrient foremen was observed in 80% humerus. Double foramen in 16%. There was no foramen in 4% humerus. It was also concluded that 88% humerus had the nutrient foremen in anteromedial surface. Nutrient foremen were dominant in Zone II with 82%. All foramen were directed towards the lower end of humeri. **Conclusion:** The presence of single foramen in the zone II was dominant. The nutrient foramina were also dominant in the anteromedial surface of the humerus.

***Keywords*:** *Foraminal Index, Humerus, Nutrient foramen*

INTRODUCTION

Due to an increase numbers of industrial and road traffic accidents, sports injuries and pathological factures in osteoporotic victims the fractures of the long bones are increasing in numbers. The medullary arterial system plays an important role in the revascularization of the necrosing cortex and the uniting callus of the fracture site[1].

The nutrient artery is a principal source of blood supply to long bones and is particularly important during their active growth period in the embryo and fetus, as well as during early phase of ossification[2]. Nutrient foramina through which the nutrient artery enters the bone, is directed obliquely, and edges of the oblique part are elevated for entrance of the nutrient artery[3,4] .

To promote the fracture healing of any long bone, the nutrient artery should be preserved[5]. Moreover, the presence of preserved nutrient blood supply is essential for the survival of the osteocytes in cases of tumor resection, trauma, and congenital pseudoarthrosis.[6] Nutrient foramen is usually single in number and located on the antero-medial surface of the humerus a little below the midpoint close to medial borer[7,8] .It has been suggested that the direction of the nutrient foramen is determine by the growing end of the bone, which is supposed to grow at least twice as fast as the non-growing end. As a result, the nutrient vessels move away from the growing end of the bone[9]. As stated popularly they "seek the elbow an flee from the knee", showing their variation in both the limbs.

The number and location of the foramina are not constant in long bones[10] .The variation of their location during the growth in the mammalian bone is also reported by Henderson[11]. Knowledge of the number and location of nutrient foramina is useful in some of the surgical proceure[12].

Studies on the vascularization of long bones of various populations have been conducted to analyze the nutrient foramina morphometry, the nutrient blood supply, the vascular anatomy in reconstructive surgeries, and the microsurgically vascularized bone transplant, [13-20] but the nutrient foramina in the humeri are rarely studied among Nepali population.

Therefore, our aim was to determine the number, direction, location of the nutrient foramen in adult dry humeri present in Nepalgunj Medical College and weather the nutrient foramina obey the general rule i.e., directed away from the growing end.

MATERIALS AND METHODS

The study was conducted in the Department of Anatomy, Nepalgunj Medical College, Chisapani during the period of one month in November 2017. The materials for the present study consisted of 50 adult humans cleaned and dried Humeri (29 left and 21 right). All the selected humeri were normal with no appearance of pathological changes and fracture. The total

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length of individual humerus was taken as the distance between superior point on the head and most distal point of medial projection of trochlea of humerus. Length was measured in mm through osteometric board. In the entire humerus after determining the sides, the nutrient foramina were studied based on:

i. The number of foramina
ii. Direction and obliquity of nutrient foramen -18G, 20G, 21G, 24G, 25G needle was used to confirm the direction and obliquity of the foramen.,
iii. Surface on which nutrient foramina were located- Humerus was examined to know the position of nutrient foramen according to the antero-medial, posterior and antero-lateral.
iv. Calculation of foraminal index Foraminal Index = (the distance from the proximal end of the bone to the nutrient foramen/ total length) X 100 [21,22] .
All measurements were taken to the nearest 0.1mm using Vernier caliper [23].
v. Location of nutrient foramina according to FI- location of foramina was divided into three types according to FI as follows:
Type 1: FI below 33.33, the foramen was in the proximal third.
Type 2: FI below 33.33 up to 66.66, the foramen was in the middle third.
Type-3: FI above 66.66, the foramen was in the distal.

Instruments used:

1. Hand lens- used to locate nutrient foramen
2. Osteometric board – used to measure the length of Humerus.
3. Vernier calipers, both curved and straight- used to measure distance of NF from the superior end.

Nutrient foramina were identified by their elevated margins and by the presence of distal groove proximal to them. Only well-defined foramina on the diaphysis were accepted. Foramina at the end of the bones were ignored.
All the numerical data were analyzed through SPSS 23.0.

RESULTS

Number of foramina

While observing the foramina in different zones, no foramen was seen in left and right humerus in zone I. Maximum number of foramina i.e. 81% (17) in right and 82.8% (24) in left were present in zone II.

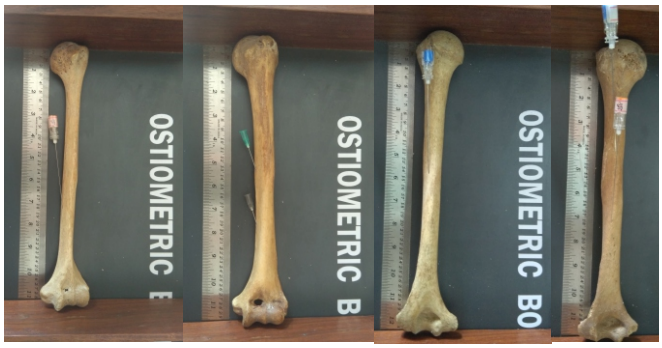

Fig: 1 Showing the nutrient foremen in humerus

Zones	Right		Left		Total	
	Number	%	Number	%	Number	%
(Null)	1	4.8	1	3.4	2	4
Zone I	0	0	0	0	0	0
Zone II	17	81	24	82.8	41	82
Zone III	2	9.5	3	10.3	5	10
Zone II and Zone III	1	4.8	0	0	1	2
Zone I and Zone II	0	0	1	3.4	1	2
Total	21	100	29	100	50	100

Table I: Showing distribution of nutrient foremen in respect to zone of humeri

In zone II total of 82% (42) humeri were observed. While observing in zone III 9.5% (2) were found in right humerus and 10.3% (5) were seen in left humerus. Total of 10% (5) were seen in zone III. In 3.4% (1) cases the foramina were present in left and none in right side. In zone I and II total number of foramina was observed in 2% (1) humerus. While the foramen in zone II and zone III in right humerus was 4.8% (1) and that in left humerus was nil. Foramen in total humerus in zone II and III, only 2% (1) humerus was observed. There was no foramen in 4.8% (1) cases in right side while 3.4% (1) in left side. There was no foramen in 4% (2) humerus in total.

No. of NF	Right		Left		Total	
	Number	%	Number	%	Number	%
0	1	4.8	1	3.4	2	4
1	16	76.2	24	82.8	40	80
2	4	19	4	13.8	8	16
Total	21	100	29	100	50	100

Table II: Showing distribution of number nutrient foremen of humeri

Total of 4% (2) humerus there were no foramen. No foramen was observed in 4.8% (1) in right humerus and 3.4% (1) in left humerus. One foramen was seen 76.2% (41) in right and 82.8% (24) in left humerus. When looked upon in total humerus the percentage was 80% (40) which had only one foramen. In 19%

(4) humerus in right side there were two foramina and in left side that was 13.8% (4). Adding both side humeri, 16% (8) bones had two foramina.

Location of Foramina

In 4% (2) humerus there were no foramen. It comprises of 4.8% (1) in right humerus and 3.4% (1) in left humerus. While observing foremen in AMS 90.5% (19) were observed in right humerus and that in left humerus was 86.2% (25). The foramen 4.8% (1) in right and 3.4% (1) in left humeri was seen in PS. Total of 4% (2) was observed in PS. While going in ALS none was seen in right humerus and 3.4% (1) was seen in left humerus. In both AM and PS none of the foramen was observe in right humerus but 3.4% (1) was in left humerus.

Surfaces	Right		Left		Total	
	Number	%	Number	%	Number	%
Null	1	4.8	1	3.4	2	04
AMS	19	90.5	25	86.2	44	88
PS	1	4.8	1	3.4	2	4
ALS	0	0	1	3.4	1	2
AM, PS	0	0	1	3.4	1	2
AM, AM	0	00	0	0	0	0
Total	21	100	29	100	100	100

Table III: Showing distribution of nutrient foremen in respect to surface of humeri

The mean total length for right side humerus was 301.48mm and to left side was 292.69. Distance from the proximal end to dominant NF was 142.52mm in right side and 143.38 mm in left side.

Parameters	Right	Left	Total
Mean total length	301.48mm	292.69mm	297.09mm
Distance from proximal end to NF	142.52mm	143.38mm	142.95mm
Foraminal Index	47.27%	48.99%	48.12%

Table IV: Showing mean values of statistical measurements of humeri

The foraminal index for right side was 42.27% and for left humerus was 48.99%. The mean length for all the humeri was 297.09mm, distance of dominant NF was 142.95mm and foraminal index was 48.12%.

The direction of foramina was directed downwards towards the distal end, without deviation from anatomical feature.

DISCUSSION

Location of foramina

Situation of nutrient foremen is on the antero-medial surface close to medial border a little below the midpoint of humeri[8] .However the position and location of foramen may vary. The present study showed that 88% of the foramen were on anteromedial surface. This findings in accordance to the finding of Mansur et.al (88.86%), Halagatti et al (87%) and Yaseen et al (88.5%)[24,25,26]. While comparing the foramen in cadavers by Khan et al in Pakistan, they also noted the higher incidence (96%) of nutrient foramen situated in anteromedial surface[27]. But Gopalakrishna et al observed 70.97% and Vinay et al reported only 30.23% of nutrient foramen in anteromedial surface[28,29].

This study also concluded that the presence of nutrient foremen in posterior surface to be 4%. Similar study conducted in Kathmandu by Mansur et al reported the incidence of 6.52%, Ukoha et al in Nigeria reported 7.5% and Gopalakrishna et al in their study observed 8.06% nutrient foremen on posterior surface which were similar to the study[24,26,30]. The study conducted by Anusha et al, Forriol et al, and Kizilikant et al observed the incidence of presence oh nutrient foremen in the posterior surface as 19%, 15.55% and 18.1% respectively[31,32,33].

The present study showed the majority of the nutrient foramina (82%) were found in zone II which was correlated with the study of Mansur et la who reported 94.84% in human dry bones, Khan et al who reported 96.20% of nutrient foramen in Pakistani cadevers[24,27]. Studies reported from India by Kumar et al and Ukoha et al from Nigeria showed the 100% foramina present in zone II[30,34]. These reports are higher than present study.

Direction of the Nutrient Foramen

All of the nutrient foramen in the present study were directed towards the lower end which is supported by many studies, which were constant and supports the law of ossification[8, 24,25,27,28,34].Kumar et al reported that the direction of nutrient foramen was towards the lower end but in one humerus the direction was towards the upper end[34].

The foraminal index in present study was found to be 48.12%. Foraminal index reported by Mansur et al was 55.20%, Pereira et al was 55.2%, Parmar et al was 55.2% Ukoheal et al was 56.28% and Muralimanju et al was 57.6%[24,30,35,36,37]. All of the study showed the greater foraminal index than the present study.

Number of Foramina

This study showed that the single foramen was present in 80% humeri. Study conducted by Peirera et al reported the incidence of 88.5% in southern Brazil and in India study by Bhatnagar et al showed the incidence to be 90% which were higher than the present study[35,38]. Findings done by Mansur et al in Kathmandu was 60.87%, Shaheen in Saudi Arabia was 60%, Mysorekar et al in Indian population was 58%, Joshi et al in

Gujarati population was 63%, which were lower than the present study [12,24,39,40].

The present study showed double nutrient foramina in 16% humeri. Similar studies done by Solanke et al (4%), Bhatnagar et al (7.14%) showed the frequency of double foramina in less humeri than the present study[38,42] . Whereas the greater frequency of the nutrient foramen were reported by Halagatti et al(17.5%), Carroll et al (28.16%) in London, Mansur et al (28.85%) in Kathmandu, Joshi et al (33%)and Shaheen et al (33.3%)[24,25,39,40,41].

There are different reports on the presence of the triple nutrient foramen[24,25,26,38]. But the present study did not show the triple foramen.

Study done by Mansur et al (1.98%) and Kizilikant et al (0.99%) reported the presence of quadruple nutrient foramen[24, 33]. There were no four foramina in present study.

There was no nutrient foramen in 4% humeri. Study reported by Mansur et la and Kizilikant et al had the same frequency of absence of nutrient foramen in 1.98% humeri[24,33]. A higher incidence of absence of foramen was seen in the study done by Ukoha et al. which was 26%.[30] If there is the absence of nutrient foramen, the bone is supplied by the periosteal arteries[8].

CONCLUSION

The presence of single foramen in the zone II was dominant. The nutrient foramina were also dominant in the anteromedial surface of the humerus. This study therefore confirms the previous reports regarding the number, position, direction of the nutrient foramina in the humerus. As nutrient artery may be damaged during the surgical procedures if location, number, and position are not known. The damage of nutrient artery may lead to non-union or delayed union of the fractured humeral shaft. Knowledge regarding variation of position, location and number of the nutrient foramina of humeri, placement of internal fixation devices can be done appropriately which leads to faster union of fracture of shaft of humerus. Anteromedial surface of intermediate zone if avoided by surgeons during any surgical procedures such as bone graft, microvascular bone surgery, bone repair leads to minimize the damage of nutrient artery of humeri.

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ORIGINAL ARTICLE

Socio-demographic Characteristics and Psychosocial Stressors in the Children and Adolescents with Somatoform Disorders

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ABSTRACT

Introduction: Somatoform disorders are characterized by physical symptoms that suggest a medical condition, and which are not fully explainable by general medical condition, or by the direct effects of a substance, or by another mental disorder. **Objectives:** to study the socio-demographic characteristics and psychosocial stressors in children and adolescents with somatoform disorders. **Methods:** From 1st January, 2018 to 30th June 2018, Children and adolescents from 3 to 18 years of age with unexplained physical symptoms were evaluated using DSM – IV criteria. Detailed evaluation followed for those meeting inclusion criteria. **Results:** Among 65 patients (18, 27.69% boys and 47, 72.31% girls) meeting inclusion criteria, conversion disorder was the most common (37, 56.92%), followed by undifferentiated somatoform disorder (15, 23.08%). Girls were significantly more represented among conversion disorder patients compared to other groups of somatoform disorders (68.08% vs. 27.78%, X^2=8.63, p<0.01) Stressors were identified in 95% and acute precipitating stressors were present in 75% patients. Both the boys and girls had significantly higher rates of academic problems. Boys found to have social and environmental problems while girls had problems in primary support group. ***Conclusion:*** Somatoform disorder, particularly conversion disorder is more common and it is found more in girls. Academic problems, poor interpersonal relations and conflict in the family are the important psychosocial stressors.

Key words: *Conversion Disorder, Psychosocial Stressors, Socio-demographic characteristics, Somatoform disorder.*

INTRODUCTION

Somatoform disorders are characterized by physical symptoms that suggest a medical condition and which are not fully explainable by a general medical condition, by the direct effects of a substance, or by another psychiatric condition. In contrast to factitious disorders and malingering, the physical symptoms are not intentional[1]. Medically unexplained somatic symptoms are a common problem in adults and these physical symptoms begin during childhood and adolescence. Excessive somatic complaints and associated illness behavior can lead to serious developmental problems when accompanied by school absences, academic failure, and withdrawal from normal social activities. Moreover, the search for diagnoses and cures of these persistent physical complaints can place children at risk of unnecessary medical tests and treatments, which can be very expensive for the family, medical profession and society.

The direct and indirect resource consumption by these patients can be enormous[2]. During this time of increasing attention to the cost of health care, there is a growing concern about the expenditure of both human and economic resources to deal with pediatric somatization.

More than one third of patients in outpatient pediatric care report medically unexplained physical symptoms associated with functional and emotional impairments[3]. In a recent prospective study,[4] 52% of patients had conversion disorder, 13.3% had undifferentiated somatoform disorder, 4% had somatoform disorder not otherwise specified, 2% somatization disorder, 8.6% pain disorder and the rest had other psychiatric disorders[5]. Diagnostic criteria of these disorders are typically met before 25 years of age, but initial symptoms are often present by adolescence. The developmental differences between adults and children lead to different presentations. Studies in children are sparse and those evaluating somatoform disorders are even lesser. Understanding of the psychological etiology of somatoform disorders highlight the patients' tendency to express emotional distress through physical symptoms. This study was done with the aim of determining socio-demographic profile and psychosocial stressors in somatoform disorders among children and adolescents.

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MATERIAL AND METHODS

A descriptive cross-sectional study was carried out with 65 children and adolescents having somatoform disorder from 3 to 18 years of age diagnosed as per the DSM-IV criteria,[1] attending to the outpatient Department of Psychiatry and referred to the Clinical Psychology unit for Psychological Intervention from 1st January, 2018 to 30th June, 2018, Nepalgunj Medical College (NGMC), Kohalpur. Out of 65 patients 38 cases were referred from the Department of Pediatric. Ethical consideration was given due importance. Consent from the parents was taken to participate in the study and the information obtained was kept confidential. This study was started after approval of Institutional Review Committee (IRC) of Nepalgunj Medical College, Teaching Hospital, Kohalpur. The patients suffering from physical illnesses, organic brain disease, psychiatric co-morbidity such as depression and anxiety, substance abuse, learning disability, and those having language barrier were excluded from the study. The participating patients were examined by the psychiatrists and diagnosed as somatoform disorder. The patients were assessed for socio-demographic profile and psychosocial stressors (present in school or family and in social environment in the past 3 months of onset of illness) by the clinical psychologist. The revised socio-economic status (SES) scale of B. Kuppuswamy- revised for 2015 was used for the assessment of SES[6]. Data were analyzed using Statistical Packages in Social Sciences (SPSS) software.

RESULTS

Table I provides socio-demographic characteristics of the sample. Total 65 patients with the diagnosis of somatoform disorder were referred to the Clinical Psychology Unit for psychological intervention (assessment and counseling/psychotherapy). 38 (58.46%) clients out of 65 were referred from the department of pediatric. Majority of the subjects were female (72.31%), students (93.85%), and unmarried (89.23%). Majority of the subjects were in the age group of 7-12 years (52.31%) and second majority was from the age group 13-18 years (44.62%). Most of the study subjects were students (93.85%) and rest of them were housewives (6.15%). Most of the subjects (84.62%) belonged to the nuclear family. Majority of them had a rural background (66.15%).

Table II illustrates the diagnostic characteristics of the patients. Majority (37, 56.92%) of the patients were diagnosed as conversion disorder. Patients with other group of somatoform disorders were 28 (43.08%). Girls in comparison to boys were significantly more represented among conversion disorder patients compared to other groups of somatoform disorders (68.08% vs. 27.78%, X^2=8.63, p<0.01).

Table III reveals psychosocial stressors in the subjects. Majority (80.00%) of the patients having problems associated with education and literacy and second majority (26.15%) facing difficulties associated with primary support group including family circumstances/conflicts followed by social and environmental problems (20.00%). Other stressors present are family history of morbidity and disability (10.77%), housing and economic hardships (9.23%) and other psychosocial circumstances (6.15%).

Conversion disorder (56.92%) was the most common diagnosis followed by undifferentiated somatoform disorder (23.08%). Pseudo seizure (89.19%) was the most common type of clinical presentation in conversion disorder. No subjects presented with isolated sensory symptoms.

Variable	Male	Female	Total N (%)
Age Range			
0-6	2 (3.08%)	0 (0.00%)	2 (3.08%)
7-12	13 (20.00%)	21 (32.31%)	34 (52.31%)
13-18	3 (4.62%)	26 (40.00%)	29 (44.62%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Education			
Primary	8 (12.31%)	8 (12.31%)	16 (24.62%)
Secondary	6 (9.23%)	20 (30.77%)	26 (40.00%)
Higher-secondary	4 (6.15%)	17 (26.15%)	21 (32.31%)
Intermediate	0 (0.00%)	2 (3.08%)	2 (3.08%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Occupation			
Student	18 (27.69%)	43 (66.16%)	61 (93.85%)
Housewife	0 (0.00%)	4 (6.15%)	4 (6.15%)
Business	0 (0.00%)	0 (0.00%)	0 (0.00%)
Service	0 (0.00%)	0 (0.00%)	0 (0.00%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Socio-economic status			
Lower	0 (0.00%)	0 (0.00%)	0 (0.00%)
Upper Lower	5 (7.69%)	6 (9.23%)	11 (16.92)
Lower Middle	4 (6.15%)	14 (21.54%)	18 (27.69%)
Upper Middle	7 (10.77%)	25 (38.46%)	32 (49.23%)
Upper	2 (3.08%)	2 (3.08%)	4 (6.15%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Marital status			
Married	0 (0.00%)	7 (10.77%)	7 (10.77%)
Unmarried	18 (27.69%)	40 (61.53%)	58 (89.23%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Family Type			
Nuclear	15 (23.08%)	40 (61.54%)	55 (84.62%)
Joint	3 (4.62%)	7 (10.77%)	10 (15.38%)
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**
Area of residence			
Rural	11 (16.92%)	32 (49.23%)	43 (66.15%)
Urban	7 (10.77%)	15 (23.08%)	22 (33.85%
Total	**18 (27.69%)**	**47 (72.31%)**	**65 (100.00%)**

Table I: Socio-demographic Characteristics

Somatoform Disorders (SDs)	Male (N=18)	Female (N=47)	Total (N=65)	X^2 Value
Conversion disorder	5 (27.78%)	32 (68.08%)	37 (56.92%)	8.63*
Other group of somatoform disorders	13 (72.22%)	15 (31.92%)	28 (43.08%)	

Table II: Diagnostic characteristics (*significant at *P*<0.01)

Psychosocial Stressors	Male (N=18)	Female (N=47)	Total (N=65)
No stress	0 (0.00%)	0 (0.00%)	0 (0.00%)
Negative childhood events	0 (0.00%)	0 (0.00%)	0 (0.00%)
Family history of morbidity and disability	2 (11.11%)	5 (10.64%)	7 (10.77%)
Lifestyle and life management difficulties	0 (0.00%)	0 (0.00%)	0 (0.00%)
Education and literacy related problems	14 (77.78%)	38 (80.85%)	52 (80.00%)
Primary support group including family circumstances and conflict	3 (16.67%)	14 (29.78%)	17 (26.15%)
Social and environmental problems	8 (44.44%)	5 (10.64%)	13 (20.00%)
Housing or economic hardships	2 (11.11%)	4 (8.51%)	6 (9.23%)
Physical environment	0 (0.00%)	0 (0.00%)	0 (0.00%)
Other psychosocial circumstances	1 (5.56%)	3 (6.38%)	4 (6.15%)
Legal	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table III: Types of Psychosocial Stressors

DISCUSSION

In the present study, somatoform disorders were found to be higher in female (72.31%) than in males (27.69%). Majority (52.31%) of patients were from the age group of 7-12 years followed by those (44.62%) in 13-18 years of age group. Excess of female patients compared to males in conversion disorder is a feature of adult patients, but it has been also seen in another pediatric study.[5] In the present study, girls were more likely to present with a somatoform disorder as compare to boys. This difference of sex representation is more apparent among conversion disorders. The girl child grows in an atmosphere of inhibited emotional ventilation. This is coupled with the pressure of puberty possibly account for the higher occurrence of conversion disorders among girls[7].

Occupation pattern revealed that students and house wives found to be more at risk as the sample comprised of these two occupational groups (Students=93.85% and House wife=6.15%). While analyzing the nature of stress, students were found to be more demanded academically. Whereas social demands upon married girls imposed stressors. Marriage itself is a major life event where a girl has to prepare herself psychologically to deal with lots of familial and social difficulties. Furthermore, the caring and raring responsibilities and their own security in family directly contributed in increased emotional conflict.

More than half of the patients belonged to the middle socio-economic status and nuclear type of family (84.62%). Majority (66.15%) of the patients belonged to rural background which is consistent with another study[8]. "It may be hypothesized that there is more pressure on children from nuclear families as the social and emotional support provided by the presence of grand parents, uncle and aunt will be missing.The condition was also more common in middle socio-economic status families, which again suggests the changing social pattern where middle class is striving hard to achieve higher social and financial status. In this situation, the child may be coaxed or pressurized into performance which is beyond his/her abilities. An acute stress against this backdrop may manifest as somatic symptom in the child.

Psychosocial stressors have been implicated in the etiology of somatoform disorders. Acute stressors related to education and literacy (80.00%) like academic problems and school examination. The reason behind which is poor quality of teaching in schools, poor monitoring of studies at home by the parents and unrealistic expectation from the child by parents. Problem in primary support group (26.15%) like family conflict, and social and environmental problems (20.00%) like change of school, joining hostel, poor interpersonal relations etc. were identified in a large number of cases. Symptoms started shortly after the stressful event. Other study also supported the similar findings in other studies where stress relating to "studies" was the most common precipitating factor[9]. Poor quality of teaching in school, poor monitoring of studies at home by the parents and unrealistic expectations from the child by the parents were found to be problem areas.

Other stress factors were family conflict, over-protective parents, and peer problems. Problem in primary support group (26.15%) like family conflict, communication problem in family was found as stress factors in the present study that is consistent with the findings in other studies done in this area[10,11]. Girl child was at a disadvantage as she was more

involved with house hold chores.

The symptomatic presentation of pseudoseizures and loss of ability to move selected body part such as loss of voice, inability to move hand or legs in conversion disorder and abdominal pain, headache, chest pain in other somatoform disorders were common complaints. The cultural and social acceptance of physical symptoms as a mean of getting attention from significant others and relief from core conflictual issue can be considered as a major choice for these symptoms.

CONCLUSION

The present study described the characteristics of children and adolescent patients with somatoform disorders from a mental health perspective. Increased awareness among pediatric treatment providers of both medical and psychosocial characteristics of children and adolescents with somatic presentation may help in early detection of somatoform disorders; reduce the risk of excessive medical intervention. Emotional factors and advantages of playing the "sick role" play a part in continuation of symptoms. The identification of stressors helps in formulating appropriate psycho-education to the family and psychosocial management of the patient.

Future studies on the development of standardized approaches for the assessment and management of hospitalized pediatric patients with psychosomatic presentation will improve clinical practice and patients' outcome.

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ORIGINAL ARTICLE

Prevalence and Clinico- Laboratory Profile of Tuberculosis In Children in Nobel Medical College, Biratnagar

Sah VK[1], Giri A[2], Niraula N[3]

ABSTRACT

Introduction: Tuberculosis infection is very common, and it continues to be the major public health problem in Nepal. Published data about the epidemiology of TB in children is scarce in Nepal, though it is considered one of the most common causes of childhood morbidity in the country. **Aims and objectives**: To calculate the prevalence of tuberculosis in children aged 0-15 years and to study their clinico-laboratory profile. **Methodology:** This is a hospital based study conducted in Nobel Medical College Teaching Hospital, Biratnagar over a period of one year. We analyzed 289 children aged 0-15 years suspected of having tuberculosis on clinical grounds and subjected to further screening tests. **Results**: Majority of the children were males and most of the children were 5-15 years of age. 15 of the cases were diagnosed as tuberculosis out of which one case was bacteriologically confirmed pulmonary tuberculosis and be 5.2 %. Fever and cough were the most common clinical presentations and mantoux test and chest X-ray were most suggestive in majority of the cases. **Conclusions:** This study supports the use of history and thorough clinical examination and high index of clinical suspicion for diagnosis of childhood tuberculosis.

Keywords: Children, Chest X-ray, Mantoux, Tuberculosis

INTRODUCTION

World Health Organization defines tuberculosis (TB) as an infectious bacterial disease caused by Mycobacterium tuberculosis (M. tuberculosis). Patients with lung tuberculosis from whose sputum M. tuberculosis bacilli are isolated are the main source of the infection. M. tuberculosis, which was discovered in 1882 by Robert Koch, is anaerobic, facultative intracellular slow-growing acidophilic bacillus, naturally pathogenic only in humans. In children, TB usually develops as a result of close family contact with smear-positive TB patient.[1]

Global incidence of tuberculosis (TB) is approximately 9.6 million cases. Of these, more than one third are in Asian countries: India, Indonesia, Myanmar, Thailand, Bangladesh, Pakistan, Sri Lanka, and Korea. Extra-pulmonary TB (EPTB) accounts for approximately 17% of all TB cases.[2] Childhood and adolescent tuberculosis (TB) continues to be a growing concern and problem in countries with a medium or high prevalence of TB. Worldwide in 2017, the incidence of childhood TB was approximately 1 million with 230,000 deaths. To achieve the World Health Organization (WHO) End TB Strategy, systematic screening of contacts including children will be important.[3]

Therefore, more epidemiological evidence is needed on the risk of infection and disease especially among populations at high risk, such as children, in order to guide future policy development for screening and preventive therapy.

METHODOLOGY:

This is a hospital based study conducted in Nobel Medical College Teaching Hospital and Research Centre located in Khanchanbari, Biratnagar, Nepal from 1st May 2017 to 30th April 2018. After ethical clearance from the institutional review committee, data was collected from 289 children admitted to the department of pediatrics by means of interview with the parents, clinical examination and laboratory report tracing and entered into a Performa.

A total of 289 children aged 0-15 years suspected of having tuberculosis were subjected to tuberculosis screening tests i.e. mantoux test, chest x-ray, sputum/gastric aspirate for AFB and Xpert MTB/RIF. Suspicion of tuberculosis was made solely on clinical grounds. Patient presenting with the following features were suspected of having tuberculosis and were included in the study:-

- Cough persisting for more than 2 weeks
- Unexplained weight loss (>1.5 kg in 1 month)
- All cases with severe or moderate acute malnutrition

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A detailed relevant history of patient was recorded and thorough physical examination was done. Informed consent (verbal as well as written) was taken from the patients or parents.

RESULTS

A total of 289 patients of age between 0-15 years arriving in the outpatient or emergency department of NMCTH and suspected as a case of tuberculosis during a period of one year were included in the study. The age of the patients ranged from 0- 15years with a mean of 9.62 ± 1.72 years. Most of the patients belonged to 5-15 years of age (58.85%). Majority of the patients were male (58.12%). Among the total suspected cases, 15 cases were diagnosed as tuberculosis either clinically or following bacteriological confirmation.

Age Group (months)	SEX				Total	Percent (%)
	Male	Percent (%)	Female	Percent (%)		
0-4	62	21.45%	57	19.7%	119	41.15%
5-15	106	36.67%	64	22.14%	170	58.85%
Total	**168**	**58.12%**	**121**	**41.84%**	**289**	**100%**

Table I: Age and sex distribution of suspected tuberculosis cases

Of the total 15 diagnosed cases of tuberculosis which were diagnosed either clinically based on risk history and radiography or bacteriologically by sputum microscopy or gene X-pert; there was one female case with bacteriologically confirmed (bc) pulmonary tuberculosis whereas there was no male case with bacteriologically confirmed pulmonary tuberculosis. Similarly there were 4 female extrapulmonary tuberculosis and 10 male extrapulmonary tuberculosis cases which were clinically diagnosed (cd).

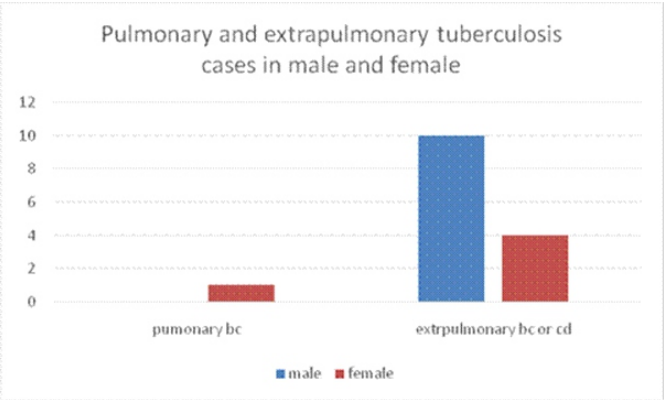
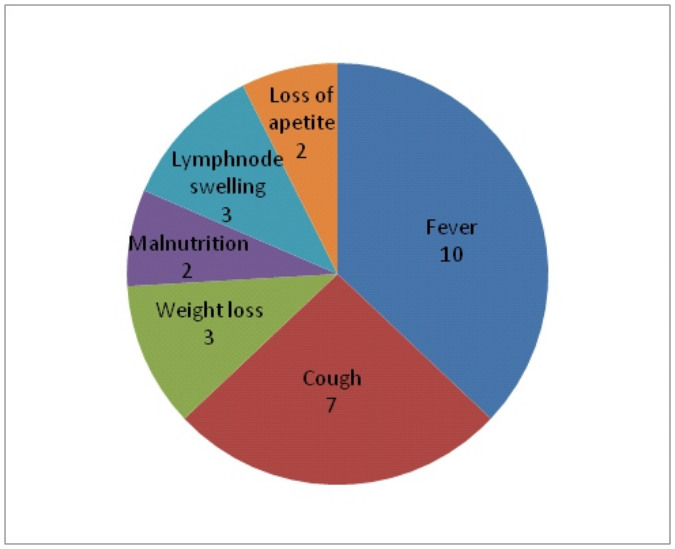


Figure 1: Sex distribution of diagnosed cases of tuberculosis

Total tuberculosis prevalence =15/289*100= 5.2%
Total tuberculosis prevalence in male=10/168*100=5.95%
Total tuberculosis prevalence in female= 5/121*100= 4.1%



*Each patient may have more than one symptom

Figure 2: Common clinical presentations among diagnosed cases of tuberculosis

Fever and cough were the most common symptoms present in clinically diagnosed or bacteriologically confirmed cases of tuberculosis, fever being present in 66% (n=10) cases and cough was present in 46.6% (n=7) cases. Weight loss and lymph node swelling were present in 20% (n=3) cases, followed by malnutrition and loss of appetite in 13.3% (n=2) cases.

S.N.	Investigations	Number of positive cases
1.	Mantoux test	10 (66.66%)
2.	Chest X-ray	12 (80%)
3.	Gastric lavage or sputum for AFB	1 (6.6%)

*Each patient may have more than one positive investigation

Table II: Laboratory findings among diagnosed cases of tuberculosis

Upon the review of investigations done, pulmonary radiographic changes were noted in 80% of clinically diagnosed or bacteriologically confirmed cases of tuberculosis and mantoux test was positive among 66.66% of cases whereas sputum microscopy was positive in only 6.6% of clinically diagnosed cases of tuberculosis.

DISCUSSION

About a quarter of the global population, including nearly 70

million children and adolescents <15 years of age, is infected with *Mycobacterium tuberculosis*. Many infected individuals are able to contain *M. tuberculosis* without the organism ever causing pathology.[4]

In a study done by Gyawali N et al, prevalence of tuberculosis among household contacts was found to be 1.6% and Shrestha S et al found prevalence of tuberculosis to be 1.5% which was lower than our study.[5, 6] In contrast to these studies, extrapulmonary tuberculosis was found to be more common than pulmonary tuberculosis in our study.

Regarding the clinical presentation, Sreeramareddy CT et al and Shrestha S et al found fever (43.2%), cough (25.9%) and lymph node swelling (15.1%) to be the common presentations of a patient with tuberculosis which was similar to our findings.[6, 7]

In our study, commonest laboratory finding was radiological changes in chest radiographs (80%), followed by tuberculin skin test positivity (66.66%) but sputum microscopy was positive only in 6.6% of the cases which is similar to the study findings of Sreeramareddy et al.[7]

CONCLUSION

The prevalence of tuberculosis was higher in older children and adolescents with male predominance. Fever, cough and weight loss were the commonest clinical manifestations in children presenting with tuberculosis. Sputum microscopy was positive only in very few (6.6%) cases hence; this study supports the use of history and thorough clinical examination and high index of clinical suspicion for diagnosis of childhood tuberculosis.

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Study Of Vaginal Microflora In Cases Of Preterm Prelabour Rupture Of Membrane (PPROM): A Case Control Study

Mahaseth BK[1], BC D[2]

ABSTRACT

Background: Globally, Preterm delivery is a major contributory factor for early neonatal death. Till date definite causative factor for preterm labour has not been proven. However, the genital tract infection is considered to be the contributory factors for PPROM. **Method:** This case control study was conducted at Nepalgunj Medical College Teaching Hospital, Kohalpur. 100 cases enrolled in the study were divided into two groups; group A consisted of 50 cases with PPROM; and in group B 50 cases were included cases without PPROM who came to routine antenatal check-up in ANC (antenatal care) clinic. The high vaginal swab was taken from the upper one-third of the posterior wall of the vagina and sent for culture and sensitivity in all cases. **Results:** In group A (with PPROM) 74% of cases were culture positive and the commonest organism was E. coli which was isolated in 40% (20/50). In group B (without PPROM) 28% of cases had culture positive, and again the commonest organism was E. coli isolated in 14 % cases (7/50). This present study showed that E. coli was most sensitive to amoxyclav and staphylococcus epidermis was most sensitive to nitrofurantoin. Ceftriaxone was found to be most effective in mixed infections. **Conclusions:** The genital tract infections in PPROM group was very high (+ve) culture in 74% in comparison to the non PPROM group where genital tract swab showed growth in only 28% (p-value 0.001). The lower genital tract infection has been considered as one of the potent cause of PPROM, so it is advised that a vaginal swab should be routinely obtained in the ANC clinic for culture and sensitivity. An appropriate antibiotic should be started in culture positive cases.

Keywords: *Culture sensitivity, High Vaginal Swab, PPROM*

INTRODUCTION

Approximately 1.1 million neonates died due to complications related to preterm delivery as estimated in 2010[1]. According to the World health organization (WHO), a baby born before 37 completed weeks of gestation. Spontaneous preterm delivery it's a major clinical challenge for the obstetricians. Preterm delivery reported worldwide between 5-13%, even in developed countries, like the United States of America[2, 3]. The worldwide incidence of preterm birth due to PPROM is 3-10% and causative factor responsible for PPROM is vaginal infection i.e. (30-40%). The burden of prematurity and its related morbidity and mortality too high in Asia and Africa, approximately 85 % of preterm birth occurs in this region (31% in Africa and 54% in Asia) [4]. Millennium Development Goal (MDG) sets targets to reduce 50% of neonatal mortality by 2025. Vaginal infection is one of the risk factors which can be managed some how to prevent preterm pre labour rupture of membrane/ preterm delivery and improvement of maternal and neonatal health can be achieved. The study was carried out, to see the incidence of genital tract pathogens and to obtain the culture and sensitivity of organism so that antibiotics could be prescribed earlier in pregnancy with a view to prevent PPROM know the sensitivity of organism with antibiotics could be prescribed earlier in the prelabour rupture of membrane cases to prevent maternal and neonatal complications.

MATERIAL AND METHODS

This case control study was carried out at dept. of Gynae/Obs of Nepalgunj Medical College Teaching Hospital, Kohalpur between December 2017 to December 2018. A total of 100 cases were enrolled and were divided into two groups, group A and group B. Group A consisted of 50 PPROM cases between 28 to 37 weeks period of pregnancy. The group B consisted of 50 cases attending ANC clinic of Nepalgunj Medical College Teaching Hospital, Kohalpur. They had no PPROM but were in the gestational period between 28 to <37 weeks period of pregnancy. All 100 cases had a vaginal swab done and sent culture and sensitivity.

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The following patients were excluded from study.

1. Immuno-compromised patient.
2. Pregnancy with diabetes.
3. Multiple pregnancies.
4. Pregnant lady under antibiotic (local/systemic).
5. Pregnant lady undergone per vaginal examination.

RESULTS

In the present study 50 cases with PPROM were allocated to group A; and another 50 cases which were normal (non PPROM and who came for routine antenatal check-up in ANC clinic) were allocated in group B. The vaginal swab was taken and sent for culture and sensitivity in both groups.

In group A (PPROM) culture showed Gram positive and Gram negative bacteria in 37 cases (74%). Out of which E. coli was the commonest, 40% (20/50) followed by staphylococcus aureus and staphylococcus epidermis (14% and 10% each). No growth was demonstrated in 13 cases (26%)

In group B (non PPROM) no growth was demonstrated in 36 cases (72%) and 14 cases (28%) showed bacterial growth, in which E. coli was again the commonest 7cases (14%), followed by staphylococcus aureus and staphylococcus epidermis (8% and 4% each). (Tab.I)

Bacterial growth in culture medium	Group(A)	Group (B)	Total	pvalue
E.coli	20(40%)	7(14%)	27	0.001
Klebsiella	2(4%)	0	2	
Staph.aureus	7(14%)	4(8%)	11	
Staph.epidermis	5(10%)	2(4%)	7	
Pseudomonas	2(4%)	0	2	
Proteus	1(2%)	1(2%)	2	
No growth	13(26%)	36(72%)	49	
Total	50	50	100	

Table I: Distribution of microflora in group (A) and group (B)

The sensitivity report showed that E. coli is most sensitive to amoxyclav and staphylococcus epidermis is most sensitive to nitrofurantoin. Ceftriaxone is found to be most effective for mixed infections. (Table II)

Growth within culture media	Antibiotic sensitivity							Total
	Amphicilin	Amoxyclav	Ceftriaxone	Nitrofur antoin	cephalexin	cefadroxil	No growth	
Klebsiella	0	0	9(75%)	0	2(50%)	1(50%)	0	2
Staph.aureus	6(54.5.%)	0	327.3%)	0	0	2(18.2%)	0	11
Staph.epidermis	1(14.3%)	0	1(14.3%)	3(42.9%)	2(28.6%)	0	0	7
Pseudomonas	0	0	0	0	2(100%)	0	0	2
Proteus	0	0	1(50%)	0	0	1(50%)	0	2
Ecoli	0	13 (48.1%)	5(18.5%)	7(25.9%)	0	2(7.4%)	0	27
No growth	0	0	0	0	0	0	49	49
Total	7	13	19	10	6	6	49	100

Table II: Microflora found to be sensitive with Antibiotics

It may be noted that group A (PPROM) showed bacterial growth of vaginal swab in 74% of cases in comparison to group B (non PPROM) where growth was not reported in 72% cases. This was a significant difference with a p- value 0.001.

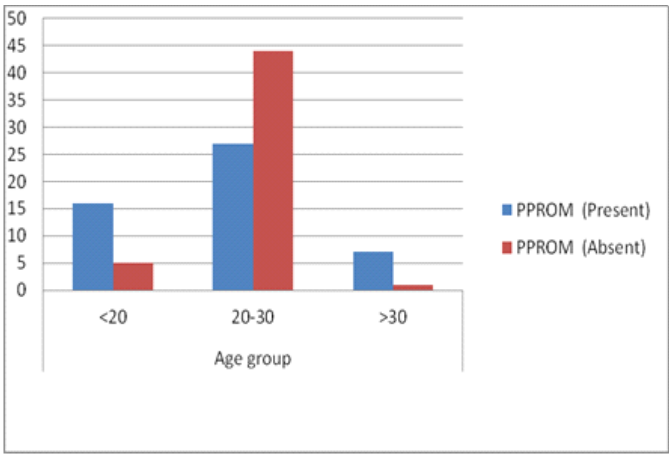

Fig 1: Distribution of cases according to the age group

In this study maximum number of participants belong to age group (20-30).fig (1)

DISCUSSION

The present study consisted of 50 cases (PPROM +^{ve}) designated as group (A) and 50 cases (normal, without PPROM) were designated to group B

In group A 74 % cases were culture positive and in group B 28% cases were culture positive,(p value 0.001) most predominating microflora was E.coli in group A 40% (20/50) and in group B 14 % (7/50), followed by staphylococcus aureus 14% (7/50) in group A and in group B 8%(4/50). Staphylococcus epidermis grew in 10% (5/50) in group A and in group B 4% (2/50) respectively.

Eleje G U et al[5], reported the bacterial growth in 79.05%cases in PPROM group where as in control group (non PPROM) the vagina swab grew bacteria in 6.67%.

Celen s et al[6] reported bacterial growth in 30.4% of cases and the incidence of E. Coli was 15.5% followed by klebsiella 4.7%. The control cases (non PPROM) showed a positive bacterial culture only in 14.9% cases.

Singh S et al[7] reported the growth of bacteria in 74.6% of cases of PPROM. The predominant bacteria were E. coli 29.5% cases.

CONCLUSION

The present study showed that the rate of genital tract infections in PPROM group is very high (74%) as in comparison to the non PPROM group were genital tract swab showed growth in only 28%; p-value 0.001. The lower genital tract infection has been considered as one of the potent cause of

PPROM, so it is advised that a vaginal swab should be routinely obtained in the ANC clinic for culture and sensitivity. An appropriate antibiotic should be started in culture positive cases. In our study ceftriaxone was found most effective for mixed infection.

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CASE REPORT

Intraventricular Neurocysticercosis And Bruns Syndrome: A Case Report

Banskota NP[1], Singh K[2]

ABSTRACT

Neurocysticercois is a common neurological infection but intraventricular NCC is rare even in endemic areas. Here we discuss a case of intraventricular NCC located at foramen of monro leading to Bruns syndrome.

INTRODUCTION

Cysticercosis refers to infection by the larval stage of the pork tapeworm Taenia solium. It clinically manifests as neurocysticercosis (NCC) and extraneural cysticercosis. NCC is divided into parenchymal and extraparenchymal forms; the latter includes intraventricular, subarachnoid, and occasionally spinal. Intraventricular NCC (IVNCC) can be rapidly progressive and fatal if untreated. NCC is the most common helminthic neurological infection in the world, and one of the most frequent causes of adult-onset epilepsy and hydrocephalus worldwide Globally, NCC is reported to affect approximately 50 million individuals, mainly in Latin America, sub-Saharan Africa, and South and Southeast Asia[2]. Brain parenchymal involvement occurs in 60% to 92% of patients with NCC, but intraventricular lesions are seen in only 7 to 20% of cases, out of which the lesions are more commonly seen in the 4th ventricle (54-64%), followed by the 3rd ventricle (23-27%), the lateral ventricles (11-14%) and Sylvian aqueduct (9%)[7,8,9].

Bruns syndrome was first described in 1902, as a sudden onset of severe headaches and vomiting associated to a vestibular syndrome provoked by abrupt change in head position. It is related to an episodic obstructive hydrocephalous caused by an intraventricular mass that acts like a ball-valve mechanism[3].

CASE REPORT

A 10 years old girl was presented with complaints of severe intractable headache, vomiting, blurring of vision, altered sensorium and seizure. On examination she had strabismus. CT head was ordered which showed gross hydrocephalus and an hyper dense small round mass was seen at junction of lateral ventricles [Figure 1]. She was prepared for surgery, Ventriculo peritoneal shunting was performed. Post-operative period was uneventful. Her headache, visual disturbances were back to normal. CT showed normal size ventricles and cyst dislodged from its original position. [Figure 3].CSF report was normal. After a week she was discharged. Counseling was done about the care of shunt.

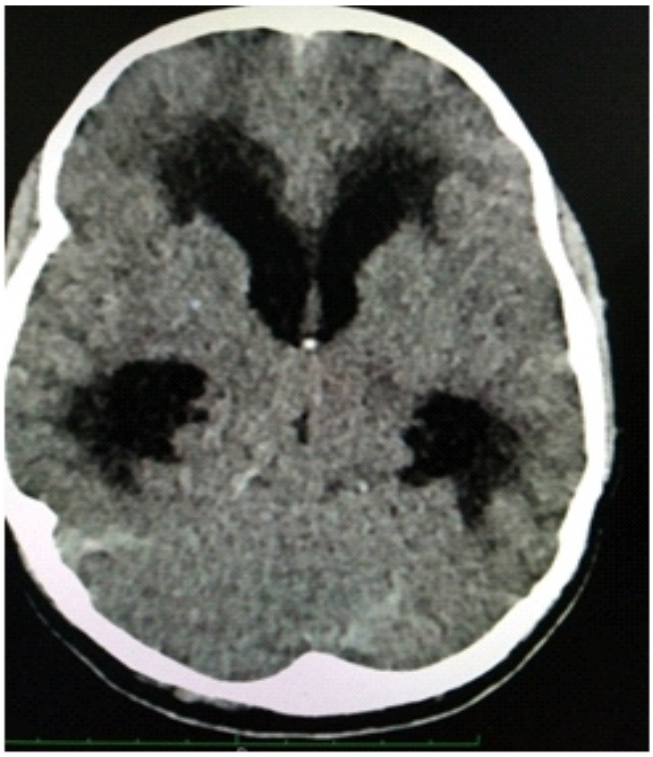

Figure 1: CT head showing dilated lateral ventricles with hyperdense mass(NCC) at foramen of monro

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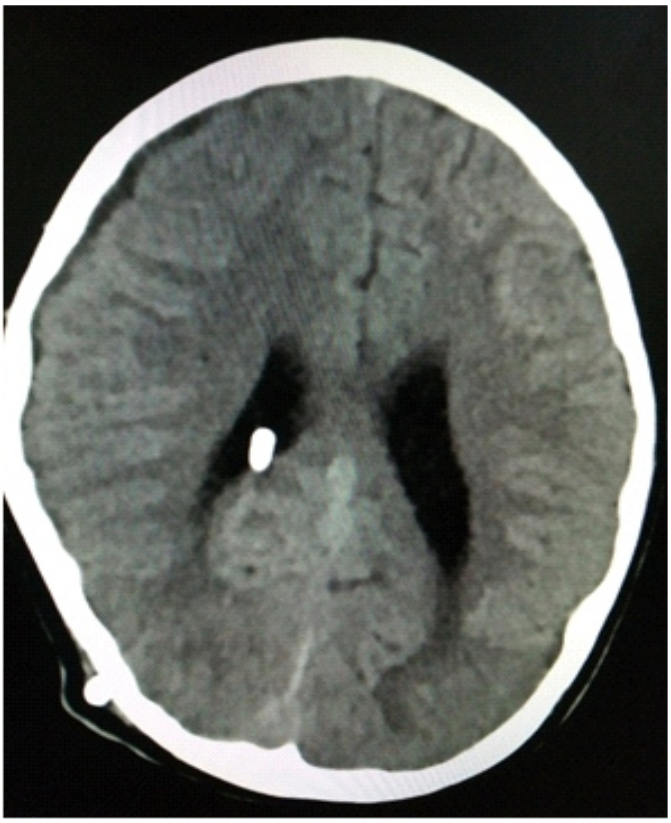

Figure 2: CT head done after placement of VP shunt

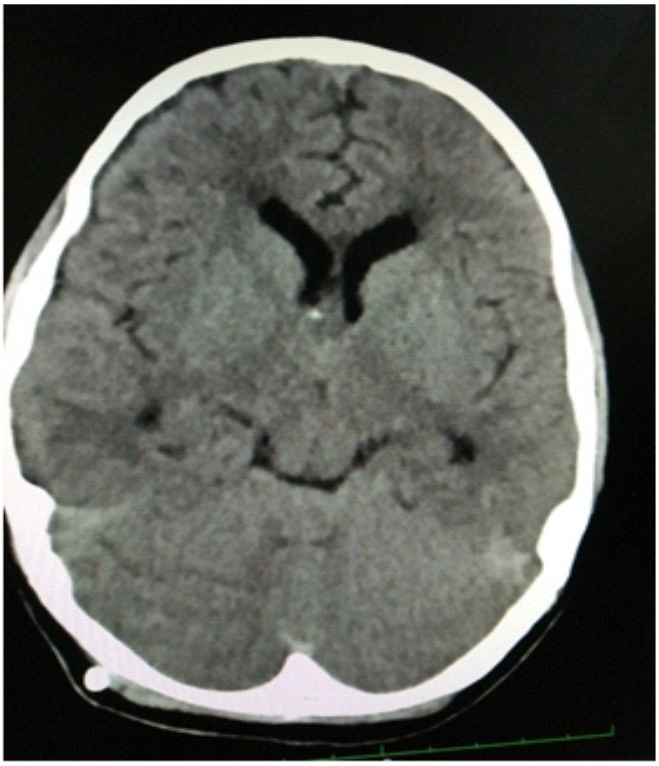

Figure 3: Post operative CT showing normal sized ventricles and cyst displaced

DISCUSSION

Neurocysticercosis is a very common neurological infection. The cysticercus larva (after embedding itself in the parenchyma) undergoes four stages of evolution: Vesicular, colloidal, granulo-nodular, and nodular- calcified. This evolution does not occur in the intraventricular and the subarachnoid form of NCC[1].IVNCC could present with various features; however, life-threatening obstructive hydrocephalus caused by positional CSF obstruction (Bruns syndrome) is an infrequent and striking feature of the disease

The Bruns syndrome is an unusual phenomenon, characterized by attacks of sudden and severe headache, vomiting, and vertigo, triggered by abrupt movement of the head. The presumptive cause of Bruns syndrome is a mobile deformable intraventricular mass leading to an episodic obstructive hydrocephalus resulting from an intermittent or positional cerebral spinal fluid (CSF) obstruction with elevation of intracranial pressure due to a ball valve mechanism[5]. Intraventricular neurocysticercosis (IVNCC) has been reported as an important etiology of Bruns syndrome4.

In this case also the patient had IVNCC and presented with attacks of severe intractable headache, vomiting, vertigo triggered by head movement. In such patients medical management is not the choice of treatment. Decreasing the CSF pressure is very important. Our patient also underwent surgery, ventriculo peritoneal shunting was done. After that symptoms were subsided. Endoscopic neurosurgery is not available in our institution so removal of cyst could not be done. Patient was asymptomatic after 2 months follow up.

CONCLUSION

Although neurocysticercosis is a common neurological infection, intraventricular NCC is very rare. We found a case of IVNCC with Bruns syndrome and treated with VP shunt.

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Incidental Finding Of Posterior Fossa Epidermoid, In A Head Trauma Patient: A Case Report

Banskota NP[1], Singh K[2]

ABSTRACT

Incidental findings of brain lesions in head injury are seen frequently. In our region NCC is common, but in literature meningioma and arachnoid cyst are common. Here we report a case of incidental finding of posterior fossa epidermoid in a 25 years old male patient who had history of minor head trauma which was operated with relatively uneventful post operative period.

INTRODUCTION

Epidermoid cysts (sebaceous cysts) are benign congenital lesions of ectodermal origin. They account for approximately 1% of all intracranial tumors. Although being congenital, patients are usually not symptomatic until they are aged 20-40 years. They frequently occur at the cerebellopontine angles and parasellar regions. Most common site being the cerebellopontine angle (40%-50%), where they represent the third most frequent tumor in this location, after acoustic schwannoma and meningioma1.

Incidental findings on computed tomography (CT) scans are occasionally noted in patients presenting with head injury. Since it can be assumed that head injured patients are of normal health status before the accident, these findings may be a representation of their frequency in the general population2.

CASE REPORT

A 17 years old male was brought to emergency with history of road traffic accident. He had mild head injury and superficial injuries. After symptomatic management CT scan head was done as it was a medicolegal case. CT head revealed posterior fossa lesion. MRI was done to plan for surgery which revealed vermian tumor D/D epidermoid or medulloblastoma. After initial management patient was discharged to follow up for tumor resection.

On follow up patient was admitted, on second day he developed seizure. After management of seizure patient was prepared for surgery. On Preanesthetic check up atrial septal defect and valvular heart disease was also found.After suboccipital craneictomy, the lesion was confirmed to be epidermoid tumor on gross examination and also by histopathological examination. On 3rd post operative day he developed pseudomeningocele which was managed conservatively. He also developed features of meningism so CSF was sent which was normal. Patient was symptom free and stable later and got discharged with advise to follow up in cardiac surgical centre for congenital heart disease.

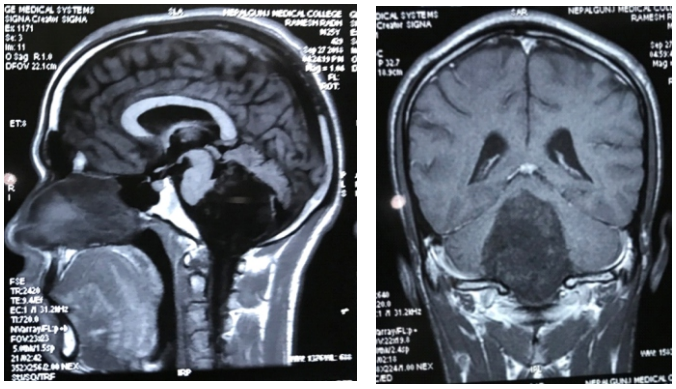

Figure 1 and 2: MRI showing lesion in posterior fossa(midline)

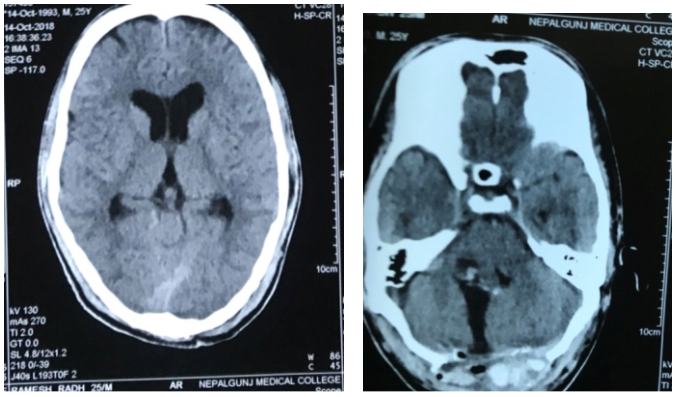

Figure 3 and 4: Post operative CT scan pictures

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DISCUSSION

Epidermoid cysts can occur throughout the neuroaxis, most commonly in the cerebellopontine angles (40–50%) and the parasellar region1. The proposed embryological pathogenesis of the typical epidermoid cyst involves trapped ectodermal components travelling along the otic vesicles during neural tube closure, thus accounting for the propensity for its location at the cerebellopontine angles5. However in this case it was a vermian tumor.

Computed tomographic features for the typical epidermoid cysts include a hyperdense lobulated mass without contrast enhancement. Usually in mild head trauma case CT is not done but as it was a Medicolegal case (RTA), CT was done on victim's request and lesion was found incidently. Incidental finding of posterior fossa tumor is about 0.4 to 1% of intracranial space occupying lesion2.

Epilepsy secondary to epidermoid cyst is rare and its epileptogenesis mechanism is not fully clarified. It may assign to infiltration of brain tissue by the cyst, chemical meningitis, or an architectural change in epileptogenic aeas6 .Our patient had only one episode of seizure which was managed and it did not recur

On 3rd post operative day our patient developed pseudomeningocele. Reported pseudomeningocele rates from posterior fossa interventions range from 4% to 28%7.

CONCLUSION

We encounter incidental asymptomatic brain lesion on CT head for head injury. Lesion was confirmed to be posterior fossa epidermoid by gross examination and histopathology.

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Plexiform Neurofibroma During Pregnancy, A Case Report From Nepalgunj Medical College Teaching Hospital, Kohalpur

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ABSTRACT :

Plexiform neurofibromas are rare variant (30%) of neurofibromatosis type 1 (NF-1) in which neurofibromas arise as large deforming masses from multiple nerve endings involving also connective tissues and skin folds.We report a case of 24 years old female, second gravida and one parity with diagnosis of plexiform neurofibromatosis made in previous pregnancy with remission of symptoms after pregnancy and accentuation during second pregnancy with positive pregnancy outcome.

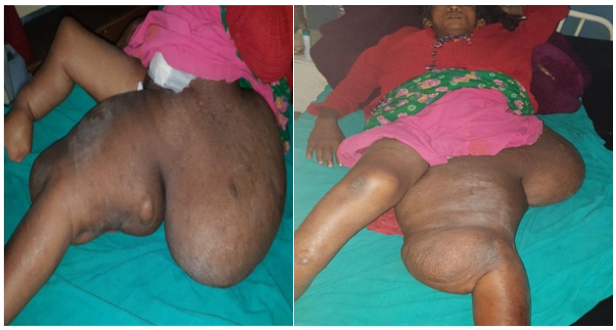
INTRODUCTION: Neurofibromatosis type 1 (NF-1) is an autosomal dominant genetic condition. It has incidence of approximately 1 in 3000. It is caused by mutation of NF-1 gene, which is located at chromosome 17q11.2. It is characterized by café-au-lait macules, axillary freckling, tumor like growth along nerves known as neurofibromas[1]. NF-1 gene produce protein named neurofibromin which is responsible for regulation of cell growth. Mutated NF-1 cannot produce Neurofibromin hence cell growth will be unregulated and uncontrolled.

Plexiform neurofibromas are rare variant (30%) of neurofibromatosis type 1 (NF-1) in which neurofibromas arise as large deforming masses from multiple nerve endings involving also connective tissues and skin folds.

Half of people with neurofibromas inherit disease. There are some small studies that support tumor growth in pregnancy likely secondary to the increased level of hormones. Further, there has been documented rapid growth in preexisting tumors that have caused life-threatening and sometimes even fatal complications[2]. Most women with NF-1 have good pregnancy outcome but careful monitoring is needed. Neurofibromatosis can't be cured fully but treatment is available for symptomatic relief. Early diagnosis and treatment of symptoms calls for good prognosis in pregnancy. Here we report on a pregnant woman who had multiple neurofibromas beginning after mid of first pregnancy leading to diagnosis of neurofibromatosis type 1. The patient had decreased in the size of neurofibromas after first pregnancy and increase in size of existing neurofibromas in second pregnancy.

CASE REPORT

A 24 years old female G2P1 at 38 weeks of gestation with regular antenatal checkup done outside presented to hospital with chief complaint of pain lower abdomen on and off. She had past medical history of neurofibromatosis type 1.



But she denies family history of same. Similarly, she does not have past history of hypertension, seizure, tuberculosis or other significant diseases.

The patient states that she had been diagnosed with NF 1 in her previous pregnancy 4 years back. Per her saying she had multiple eruptions of papules and nodules throughout her body in first trimester of first pregnancy. Thereon progressive enlargement of such nodules in her back and lower limb giving rise to massive enlargement of legs and inability to walk in third trimester. However, pregnancy was uneventful. Induction done after 40 weeks of gestation but landed up in caesarean section due to prolong labor. Puerperium was uneventful, she noticed gradual regression of enlarged limbs and back thereafter.

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In this pregnancy, she had no other complaints despite gradual enlargement of existing neurofibromas predominantly in sacral region and left lower limb to the extent she was rendered incapable of walking on reaching third trimester. There is no history of pain, no headache, no raised blood pressure throughout pregnancy, no visual changes nor any neurological symptoms. All the lab tests were within normal limits. During admission she was not in labor and ultrasonography revealed single live fetus of 32 weeks gestation. She was kept under observation and betamethasone started for fetal lung maturity. But she developed per vaginal leaking after 12 hours and liquor was moderately meconium stained. So she was taken for caesarean section with delivery of 1.9 kg female with Apgar score of 5/10 and 7 /10 at 1 and 5 minutes. Placenta was normal. Baby was kept on NICU for observation and given to mother after few hours. Post-operative recovery was uneventful and was discharged home after 7 days. During discharge patient was counselled about the risks of transforming to malignancy and was suggested for follow up if symptoms like, increase in size of tumor, change in consistency or pain occurs.

DISCUSSION

The interaction of neurofibromin (NF) with other membrane cellular proteins such as proteoglycans, intermediate actin filaments, and tubulin promotes the alteration in the regulation that leads to the development of this syndrome[3].Same as other neurodevelopmental disorders, some identified mutations which encode for the RAS/mitogen-activated protein kinase pathway is activated from the protein kinase pathway[4]. The NF1 gene is considered a gene suppressor which when altered does not produce enough neurofibromin to assure and regulate cellular growth (haploinsufficiency) [5]. However many cases require another event (second hit mutation) for the manifestation of clinical signs and symptoms of the disease.

Hormone changes as in pregnancy or puberty leads to second hit mutation in these individuals and development of neurofibromas[6].The growth and mass effect of a neurofibroma during puberty or pregnancy should be monitored due to the possibility of the appearance of new symptoms in patients diagnosed with NF-1.

Malignancy is a concern in patients with neurofibromatosis. Large plexiform neurofibromas are at increased risk of transforming into malignant peripheral nerve sheath tumor (MPNST) [7]. These tumors are resistant to chemotherapy and radiation. They grow from nerve fascicles along the length of nerve and are locally destructive to bones and surrounding tissues. During the period of growth, if tumor becomes destructive, surgery is the best means of cure.

The patient described above had similar history in the past. Aggravation of symptoms in pregnancy and regression post pregnancy.

CONCLUSION

Surgery is the mainstay of treatment. Growth of lesion in pregnancy puts obstetrician more in confusion as to whether it is due to hormones or some malignant transformation. So work up must be done as early as possible. Radiological examination like MRI is of limited help. Taking multiple biopsies form lesion can detect the transformation. Instituting treatment early decreases mortality as malignancy is the main cause of morbidity and mortality in NF1 population.

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