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EDITORIAL

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Nonalcoholic Fatty Liver Disease (NAFLD) and Nonalcoholic Steatohepatitis (NASH): Diagnosis and Management

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Nonalcoholic fatty liver disease (NAFLD) is a condition characterized by excessive accumulation of lipid (defined as the presence of lipid in >5% of hepatocytes or a lipid content >5% liver weight) in the liver in individuals, who consume little (<20 g of alcohol/d) or no alcohol. When NAFLD is accom-panied with liver cell injury and inflammation it is called nonalcoholic steatohepatitis (NASH). About 30% NAFLD progress to NASH, if untreated, it can lead to fibrosis, cirrhosis or even hepatocellular carcinoma (HCC).

NAFLD is becoming now the most common cause of chronic liver disease worldwide, closely mirroring the epidemiology of type 2 diabetes, obesity and physical inactivity. In the years to come the prevalence of NASH will increase by/to 15%-56%; by 2030 the incidence of decompensated cirrhosis due to NASH will increase by 168%, the incidence of HCC will increase by 137% and the incidence of liver related death by 178%.[1]

At present, NAFLD is the most common cause of hepatic dysfunction in developed countries and predicted to be the same for the developing countries by next few decades.[2,3] Estimates obtained from various clinical records and medical studies suggested that the prevalence of NAFLD is 20% to 30% in western countries.[2,4] The prevalence in the Middle East, Japan and China is almost same as the western world with a prevalence rate of 15-30%. In the Asian countries, the prevalence of NAFLD varies in different regions. However, in Indian subcontinent prevalence of NAFLD is recorded as 16-32% in urban population and approximately 9% in rural areas.[2,5]

Bangladesh is also experiencing an increasing trend of liver disease deaths due to changing in the dietary patterns and sedentary lifestyles.[6,8] World Health Organization (WHO) has been documented in May 2014 that 2.82% of total deaths in Bangladesh are due to liver diseases. It is the 8th most common cause of death in Bangladesh and the age-adjusted death rate is 19.26 per 100,000 population.[6,9] Chronic liver diseases (CLDs) are responsible for 37-69% of liver diseases in Bangladesh and NAFLD is a significant contributor to the burden of CLDs.[9]

The disease is silent in early stages and the clinical picture is very heterogeneous at presentation steatosis at ultrasound and altered LFTs or metabolic risk factors, isolated hyperferritinemia and sometimes cirrhosis of unknown origin.

Screening for NAFLD in general population is not recommended. Simple blood test of first generation (FIB4, NFS fibrosis score) should be applied in primary care settings[10] with a good

negative predictive value. However, confounding factors (age, type 2 diabetes) should be taken into account when interpreting the results. Second generation blood tests alone, or combined with Fibroscan are recommended in secondary care and significantly decreases the number of indeterminate cases. However, liver biopsy is still the gold standard for the diagnosis of NASH.[11]

Because of the evolving landscape in the field with a lot of therapeutic agents being now in the development, it is an unmet need to develop reliable biomarkers for NAFLD. Firstly, an ideal biomarker should be able to distinguish between steatosis and NASH and to assess the severity of fibrosis. This is particularly important since the long-term outcomes and prognosis is strongly correlated with the severity of histological lesions. Secondly, because the bidirectional evolution of histological lesions in NAFLD, an ideal biomarker should also be able to monitor the disease progression or regression and to identify patient's eligibility for therapy. Finally, an ideal biomarker should have prognostic value.

The management of patients with NAFLD should not be limited to the liver, but must pay special attention to associated co-morbidities. Patients with NAFLD should be screened for cardiometabolic complications, particularly cardiovascular disease,[12,13] type 2 diabetes[14,15] and renal function impairmen.[16] Regular screening for HCC is recommended in cirrhotic patients; despite half of NAFLD-related HCC cases developed in the absence of cirrhosis[17] and no screening recommendation can be made in these patients.

As there are no specific therapeutic agents for NASH approved at the date, lifestyle management is crucial. A weight loss of 7–10% with diet can reverse NASH and fibrosis but it is difficult to obtain and maintain. Bariatric surgery can be an option in selected patients[18] but the effect of bariatric surgery in patients with advanced (F3) fibrosis or cirrhosis has to be further determined.

Physical activity is now routinely prescribed in patients with NAFLD but the optimal dose and type of physical activity has to be determined. Although evidence of efficacy is limited, Vitamin E is the most commonly used medication in clinical practice.[19] Some drugs with proven histological efficacy in NAFLD are only available off label.[20] New emerging therapies are now in development. Some of them completed phase IIb trials with promising results and are entering now phase III clinical trials.[21]

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Interface Dermatitis with Clinicopathological Correlation

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ABSTRACT

Introduction*: The term "Interface dermatitis" refers to the findings in skin biopsy of inflammatory infiltrate that obscures the dermo-epidermal junction. This study was carried out to correlate interface dermatitis clinicopathologically.* ***Methods****: Skin biopsies were taken from clinically diagnosed cases of lichenoid skin lesions and sent for histopathological examination. Then correlation was done with clinical diagnosis.* ***Results:*** *Out of 90 cases, almost all were of Lichen planus with its variants (40, 44.4%), Lichen simplex chronicus (42, 46.6%) and Lichen planus-like keratosis (5, 5.5%). Other cases included 1 from each of Inflammatory linear verrucous epidermal nevus (ILVEN), Pityriasis lichenoides et varioliformisacuta (PLEVA), and Prurigo simplex (PS). Clinico-pathological correlation was present in 44.4 % of cases of interface dermatitis.* ***Conclusion:*** *In our study, most consistent findings in histology were basement membrane degenerations like lymphocytic infiltrates along dermoepidermal junction. Other findings such as hypergranulosis and civatte bodies were not observed frequently. Interface dermatitis includes diverse entitieswhich have overlapping features at the clinical and histopathological level. Hence, adetailed histopathological studies are needed to diagnose specific features of different types of interface dermatitis.*

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INTRODUCTION

The term interface dermatitis (ID) refers to the findings in a skin biopsy of an inflammatory infiltrate that obscures the dermoepidermal junction (DEJ).[1,5,8] The salient histological findings include basal cell vacuolization, civatte bodies (apoptotic keratinocytes) and inflammatory infiltrates obscuring the DEJ. Secondary changes of the epidermis and papillary dermis along with type, distribution and density of inflammatory cells are used for the differential

diagnosis of the various diseases that exhibit interface changes. Lupus erythematosus, dermatomyositis, lichen planus (LP), graft versus host disease, erythema multiforme, fixed drug eruptions, lichen striatus (LS) and ptyriasis lichenoides are considered major interface diseases.[2]

Interface reactions are so named because they are cell-mediated immunologic reactions where the basal keratinocytes that reside above the DEJ sare the target. Interface reactions are also known as lichenoid tissue reaction (LTR).[4] Cytotoxic T-lymphocytes represent the final effector cell type for the epidermal basal cell layer injury pattern that is common in ID disorders.[8] An autoimmune attack by T-cell upon the epidermis represents the primary pathologic event in the LTR.[9] The term "lichenoid" refers to papular lesions of certain skin disorders of which lichen planus is the prototype.[3,6,7]

ID can also be classified by the intensity of the interface inflammation as cell-poor ID and cell-rich ID. The infiltrate in lesions of cell-rich lymphocytic ID typically occurs as a heavy band-like inflammatory infiltrate that obscure the basal layers of the epidermis; this is often termed as lichenoid interface dermatitis.[1] Interface dermatitis encompasses multiple clinical entities with diverse histological features. Histological study is valuable in diagnosing different dermatological disorders. A correlation of the interface changes with the clinical diagnosis often helps in arriving at a definitive diagnosis of the various lichenoid interface dermatitis.[3] The aim of this study was to correlate clinical diagnosis with histologic features to have a definitive diagnosis.

METHODS

This cross-sectional descriptive type of study was carried out in the Department of pathology, Rajshahi Medical College. The material for the present study consisted of skin biopsy samples collected from the patients attending the out-patient Department of Dermatology and Venereology, Rajshahi Medical College Hospital. The study was conducted for a period of 2 years from July, 2005 to June, 2007. A total of 90 patients of both sexes, aged between 5-75 years, were included in this study. Biopsies of skin lesions were taken from the lichenoid skin lesions and submitted to the Department of Pathology for histopathological examination. The specimens were fixed in 10% formalin for 24 hours and then processed by routine paraffin section technique and stained with hematoxylin and eosin. All the slides were examined under the light microscopy for epidermal and dermal changes. All the histopathological features were correlated with the clinical diagnosis.

RESULTS

In the present study, a total of 90 cases of Interface dermatitis (ID) were studied, which was presented clinically as papulo squamous skin lesions (lichenoid skin lesion). Out of 90 cases studied, the most common type of ID was Lichen simplex chronicus (42, 46.6%), the second common being Lichen planus (LP) and its variants (40, 44.4%). The least common cases were LP-like keratosis (5, 5.5%), Inflammatory verrucous epidermal nevus (ILVEN) 1 case, Pityriasis lichenoides et varioliformisacuta (PLE-VA) 1 case and Prurigosimplex (PS) 1 case (Table I).

Table I: Histopathological diagnosis of 90 cases of Lichenoid skin lesion

Histopathological diagnosis	Number of patients (n- 90)	(%)
Lichen simplex chronicus	42	46.6
Lichen planus (LP)	40	44.4
LP-like keratosis	05	5.5
Inflammatory linear verrucous epidermal nevus	01	1.1
Pityriasis lichenoides et varioliformisacuta	01	1.1
Prurigo simplex	01	1.1
Total	**90**	**100**

Majority (28.8%) of the cases in the present study were in the age range of 21-30 years. Majority of the cases of ID were seen in males (61, 67.7%), with M:F of 2.1:1. Male predominance was seen among the cases of ID (Table ll).

Table ll: Age and sex distribution of 90 cases of Interface dermatitis

Age groups (years)	Male (n-61) (%)	Female (n-29)(%)	Total = (n- 90)(%)
0-10	05 (71.4)	02 (28.5)	07 (7.7)
11-20	16 (72.7)	06 (27.2)	22 (24.4)
21-30	17 (65.3)	09 (34.6)	26 (28.8)
31-40	08 (66.6)	04 (33.3)	12 (13.3)
41-50	11 (68.7)	05 (31.2)	16 (17.7)
51-60	03 (60.0)	02 (40.0)	05 (5.5)
61- above	01 (50.0)	01 (50.0)	02 (2.2)
Total	**61 (67.7)**	**29 (33.2)**	**90 (100)**

Clinicopathological concordance was seen in 40 (44.4%) cases with lichen planus and discordance in 50 (55.5%) cases. Among the several variants of lichen planus (LP) cases (n=40), classical, oral, hypertrophic and atrophic types were observed in this study (Table lll). Maximum number of cases was classical variant of LP. Papules and plaques with scales were mainly confined to the extremities and trunk.

Table lll: Variants of lichen planus

Variants of lichen planus	Number of cases (n = 40)	(%)
Classical	36	90.0
Oral	02	5.0
Hypertrophic	01	2.5
Atrophic	01	2.5
Total	**40**	**100**

Histologically, mild degree of hyperkeratosis was observed in 7 (17.5%), moderate degree in 32(80.0%) and marked degree in 1 (2.5%) cases. Similarly, mild degree of hypergranulosis was observed in 5 (12.5%) and marked degree in 35 (87.5%) cases. Acanthosis of the epidermis in mild degree was observed in 5 (12.5%), moderate degree in 34 (85.0%) and marked degree in 1 (2.5%). Focal degeneration of basal layer was observed in 16 (40.0%) cases and band like infiltration of chronic inflammatory cells along the dermoepidermal junction were observed in 24 (60.0%) cases and civette bodies in 16 (40.0%) cases.

Table lV : Important histological features of lichen planus

Histological features	Mild	Moderate	Marked	Total
Hyperkeratosis	7 (17.5 %)	32 (80.0 %)	1 (2.5 %)	40 (100%)
Hypergranulosis	5 (12.5%)	_	35 (87.5 %)	40 (100%)
Acanthosis	1 (2.5 %)	37 (97.8%)	1 (2.5 %)	40 (100%)
Focal degeneration of basal layer	16 (40.0%)	_	_	16 (100%)
Band-like infiltrate along dermoepidermal junction	24 (60.0%)	_	_	24 (100%)

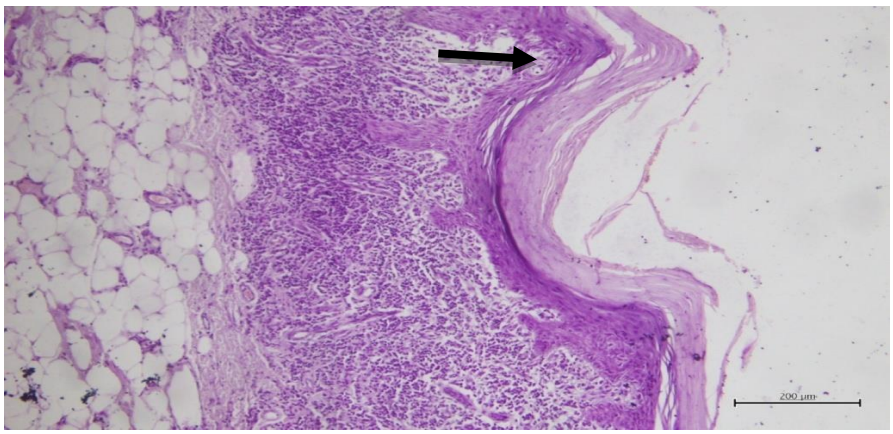

Figure - 2 : Photomicrograph of classical lichen planus showing features of interface dermatitis along the dermoepidermal junction. (H&E stain, X 100).

DISCUSSION

Lichenoid interface dermatoses include a closed group of disorders with bandlike infiltration of lymphocytes obscuring the dermoepidermal junction, vacuolar degeneration of basal layer and civette bodies. All lichenoid dermatoses are interface dermatoses but all interface dermatoses are not lichenoid dermatoses as interface dermatoses can also be vacuolar in nature. Diagnosis of the various types and subtypes are also important because of the different clinical course, management and prognosis of the disease.[7]

Lichen planus is a prototype of lichenoid interface dermatoses. The most common dermatoses observed in our study were lichen planus, presented with papulosquamous lesions. Sex distribution of male and female was 2.1: 1. More

common affected age group was 21-30 years and most of the patients were in third decade. Pruritus was moderate to severe. The cutaneous lesions of LP tend to involve the flexural surface, the arms and legs were the most common sites, although trunk may be involved. This study correlates well with the study of Boyd and Neldner.[7] This study also correlates with the study of Anber, 2003 among the Egyptian people.[10] Papulosquamous lesions were found in majority of the cases in our study, which is similar to the observation of Gargiet al.[7] Localized lesions on extremities were more common than generalized lesions.

Among the morphologic variants of LP, classic type, hypertrophic type, oral LP and atrophic LP were found in this study. The histologic features consists of hyperkeratosis, hypergranulosis, irregular acanthosis, basal layer degeneration and band like infiltrates along the dermoepidermal junction. Mild degree of hyperkeratosis is seen in atrophic and oral LP cases.

The second most common entity in this study is Lichen simplex chronicus, which is a prototype of chronic non-specific dermatitis.[11] Clinically, lesions were papuloplaque type with scales on surface and pruritic. These make it difficult to differentiate from the lesions of LP. Histopathologically diagnosed other cases of lichenoid skin lesions in this study are BLK, ILVEN, PLEVA, PS. Most of these are termed as lichnoid interface dermatitis.[1,4,6,8,12]

The present study showed 40 (44.4%) concordance and 50 (55.5%) discordance between the clinical and histopathological diagnosis among the 90 cases of lichenoid skin lesion. So, clinical evaluation alone is not sufficient for the diagnosis of lichenoid interface dermatitis, rather a subsequent histopathological examination would enable us to reach a correct diagnosis and proper management of the patients.

CONCLUSION

This study has shown that interface dermatitis occurs in a wide variety of clinicopathologic settings. All clinically diagnosed lichenoid skin lesions were not lichen planus, a few of them were different types of chronic dermatitis. Clinical evaluation alone is not sufficient for the diagnosis. So, all lichenoid skin lesions require biopsy and histopathological examination to evaluate subtle microscopic changes, which will help in arriving at a specific diagnosis. A better understanding of the different conditions with shared pathogenesis will help in better patient care.

Conflict of interest: Nothing.

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Nutrient Foramen on Adult Dry Left Femur and Its Clinical Implication

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ABSTRACT

Introduction: *The Femur bone is a highly vascular structure with unique features in its blood supply via numerous foramina located over its different segments, being named as vascular foramina. Among vascular foramina, nutrient foramen is an important one which gives way to the nutrient artery. Knowledge of vascular anatomy is helpful in early identification of vascular interruptions leading to osteonecrosis. The nutrient foramina are openings that conduct the nutrient arteries. The majority blood supply for femur originates from the nutrient arteries, mainly during the growing period and during the early phase of ossification. During bone grafts the nutrient blood supply is crucial and it should be preserved in order to promote the healing. So, the number of nutrient foramen of femur is indispensable for orthopaedic and vascular surgeons as well as to radiologist for planning of treatment. Thus, this data could be valuable as reference for surgical procedures of the lower limb.* ***Methods:*** *This is a purposive sampling type of study carried out in the Morphometric study of nutrient foramen in the Department of Anatomy, Sir Salimullah Medical College (SSMC), Dhaka, Bangladesh from July 2011 to June 2012. The study comprised of 199 fully ossified left sided dry femur (n=89 male, n=110 female). The bones were collected from the Department of Anatomy, Sir Salimullah Medical College Dhaka, foramen of all samples were studied by direct physical examination and photographic methods.* ***Results****: The nutrient foramen were observed as single in 84.7% male and 76.7% female samples, two in number in 13.3% male and 21.3% female samples and three in number in 2.4% male and 2% female samples of left femur respectively.* ***Conclusion:*** *The anatomical knowledge of nutrient foramen of this study is useful in certain surgical procedures to preserve the circulation. As microvascular bone transfer is becoming more popular, a convention for the anatomical description of nutrient foramen is important.*

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INTRODUCTION

Long bones are supplied by a nutrient artery that enter individual bones obliquely through a nutrient foramen. This foramen, in the majority of cases is located away from the growing end.[2] The foramina 'look for the elbow and flee from the knee'.[3] This is because one end of the limb bone grows faster than the other. Henderson[4] reported that their position in mammalian bones are variable and may alter during growth. Though the foramina are directed away from the growing end, their topography might vary at the non growing end. So, the topographical anatomy of the nutrient foramina may be of worth. The topographical knowledge of the number of nutrient foramina is useful in certain operative procedures to preserve the circulation.[5-7] Therefore it is important that the arterial supply is preserved in free vascularised bone grafts so that the osteocytes and osteoblasts can survive.[8] When a bone graft is taken, the vascularisation of the remaining bones has to be considered with the vascularity of this area allowing various options in grafting.[9] It has previously been reported that the ideal bone graft for the free transfer should include endosteal and periosteal blood supply with good anastomosis.[6] The bony defect which is left behind following traumatic injuries, tumour resection procedures and pseudoarthrosis can all be reconstructed by bone grafting procedures and the preferred modality is free vascularised bone graft.[10] The importance of preoperative angiography remains important to exclude the possible vascular anomalies in both recipient and donor bones for the microvascular bone transfers.[11] The study provides data on the morphology and topography of the number of nutrient foramina in bony specimens. The data is helpful for clinicians involved in vascular graft surgeries. This research emphasizes the anatomical description of number of nutrient foramina which are important as micro vascular bone transfer which is becoming more popular. The aim of the present study is counting the number of diaphyseal nutrient foramen, anatomy and morphometry of nutrient foramen of fully ossified left femur. Femur is ossified completely by the age of twenty five years.[1] So, it achieves its adult form and then any measurement can be taken for research after this age. According to the reported observation, left lower limb is functionally dominant in majority of human beings.[12] On this basis, left sided adult femur was considered as sample in this study.

METHODS

It was a purposive type of study performed on 199 fully ossified left sided dry femur (n=89 male, n=110 female). The bones were collected from the Department of Anatomy, Sir Salimullah Medical College (SSMC), Dhaka from July 2011 to June 2012. Sampling technique was purposive. The number of nutrient foramen on the shaft of left femur in male & female were considered as key variable. Instrument used for taking direct physical measurements by digital slide caliper, scale, and indirect photographic measurement by digital camera and computer. All measurements were recorded in metric unit-centimeters (cm). Bones which had gross pathological deformities were excluded from the study. All the bones were macroscopically observed for the number of the nutrient foramina. The number of nutrient foramina was identified by the presence of a well marked groove leading to them and by a well marked, often slightly raised, edge at the commencement of the foramen. Only diaphysial nutrient foramina were observed in all the bones. The number and topography of the foramina of the diaphysis were analyzed. An elastic rubber band was applied around these foramina (Figure 1 and 2) and the photographs were taken with a

digital camera, which was manufactured by Nikon (Coolpix S3000, made in China). The parameters were measured by using a scale bar.[13]

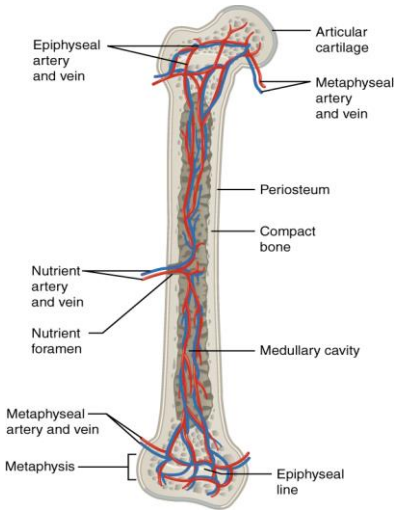

Figure 1. Showing the nutrient foramen, nutrient artery

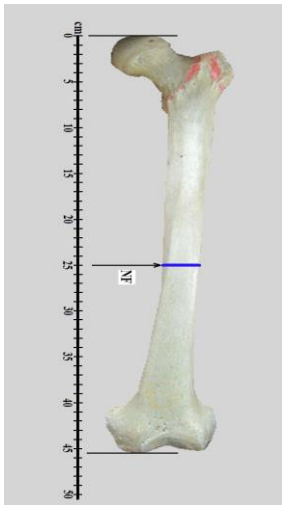

Figure 2. Procedure for identifies the number of nutrient foramen (NF)

RESULTS

The number of nutrient foramen were observed single in 82 (84.4%) male and 78 (76.7%) female samples, double in 13 (13.3%) male and 22 (21.3%) female samples and triple in 2 (2.4%) male and 2 (2%) female samples of fully ossified left femur respectively (Table I, Figure 3 & Figure 4).

Table I - Number of nutrient foramen in male and female

Nutrient foramen		Male	Female	*p* value
Number	Single	82 (84.4%)	78 (76.7%)	
	Double	13 (13.3%)	22 (21.3%)	0.481[ns]
	Triple	2 (2.4%)	2 (2.0%)	

Comparison between sex was done by unpaired Student's't' test.

ns = Correlation is not significant at the 0.05 level (2-tailed)

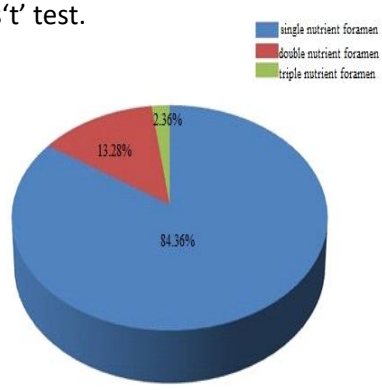

Figure 3. Pie chart showing frequency distribution of number of nutrient foramen in the shaft of left femur in male (n=89)

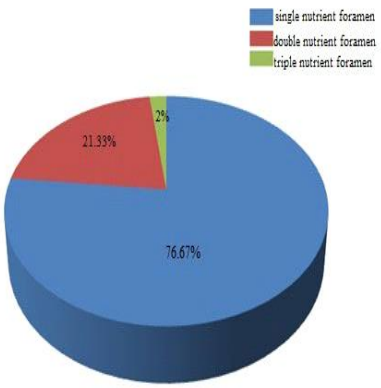

Figure 4. Pie chart showing frequency distribution of number of nutrient foramen in the shaft of left femur in female (n=110)

DISCUSSION

The diaphysis of femur is irrigated by one or more nutrient arteries that pierce the compact bone and divide in the medullary cavity into ascending and descending branches while accompanied by the terminal branches of numerous metasphyseal and epiphyseal arteries.[14] The transplant of the femoral diaphysis, the deep femoral artery can use, if the lateral circumflex femoral artery is protected. The variations and the division of the deep circumflex trunk and determined the number of nutrient foramina in 200 femur (n-95 males n+105 females). They found single number of nutrient foramen 35% in males, 40% in females, double nutrient foramen in 57% males, 50% in females and nutrient foramen in 8% in males, 10% in female's samples.[15] Single foramen was found in 60% males, 40% females.[16] 50% males, 50% females,[17] and 46% males, 56% females,[18] in comparison to 84% male,76% females of our studies. Single nutrient foramen in 47.7% male, 45.5% female of the sample , double foramen in 44.2% male, 43.5% female of the sample, triple in 3.5% male, 6% female of the sample and an absence of foramen in 4.6% male, 5% female of the sample were found in another study.[13]

CONCLUSION

The present study was an attempt to construct data on the number of nutrient foramen of fully ossified dry left femur for Bangladeshi Anatomists, orthopedic surgeons and vascular surgeons. To establish standard data, similar study with larger sample size and wider age group (including child group) and radiographic study is recommended.

Conflicts of Interest: None

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Role of Myringoplasty in Hearing Improvement

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ABSTRACT

Introduction: *This study was carried out to assess the graft take rate as well as hearing improvement after myringoplasty with temporal fascia graft by underlay technique.* ***Methods:*** *Study was done in department of ENT of Doctor`s Clinic Unit-2, Thanthania, Bogura from July 2016 to June 2017. Sixty (60) patients were included prospectively for this work. The age range of the patients was 10 to 50 years.* ***Results:*** *In this study graft taken rate was 85% (51 out of 60) and graft failure was 15% (9 out of 60). Highest number of patients was in the age group of 21to 30 years and graft take was also maximum in this age group. Graft take rate of small size perforation (100%) and medium size perforation (93.2%) had more than subtotal perforation (77.8%). Success rate of posterior perforation was maximum (93.7%) followed by anterior perforation (88.2%). In case of approach of operation, postaural approach had maximum success rate (88.0%), followed by transcanal (80%) and end aural approach (75%). In this study, the mean pre and postoperative air conduction threshold in the successful cases were 34 decibel (dB) and 24dB respectively, with a mean audiological improvement of 10 dB. Improvement of mean air bone gap was 11 dB. Of the successful cases, hearing was improved in 31 (60.8%) patients and 20 (39.2%) patients showed no significant hearing improvement.* ***Conclusion:*** *From this study, it can be concluded that myringoplasty is a valid treatment modality for tympanic membrane perforation.*

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INTRODUCTION

In Bangladesh, like all developing countries the incidence of chronic suppurative otitis media (CSOM) is very high because of poor socioeconomic standard, overcrowding, poor nutrition and lack of appropriate health education.[1] Among the two types of chronic supportive otitis media, tubotympanic variety is the commonest and is called safe variety as the risk of developing complications are less and the name tubotympanic indicate disease of Eustachian tube and tympanic cavity.[1] Tubotympanic disease is always characterized by central perforation involving the pars tensa of

varying size and shape but with a narrow margin of intact annulus and usually with part or all of the membrane of the malleus remaining.[2] The perforation of the tympanic membrane is associated with aural discharge and hearing loss. Aural discharge is always mucoid or mucopurulent and varies with upper respiratory tract infection. Discharge is usually intermittent whenever there is a fresh head cold or water enters in to the ear.[2] Hearing loss in tubotympanic disease is usually conductive in nature but a few case of sensorineural hearing loss is found.[3] Hearing loss with intact ossicular chain is approximately 10-30 dB.[4,5] But more when ossicular chain is disrupted. Myringo-plasty is the operation specially designed to repair or reconstruct the tympanic membrane. The earliest reported successful myringoplasty was done by Berthold in 1978, using full thickness skin graft.[3] Since then, myringoplasty has gone through many changes in technique and materials. Shea in 1960, first introduced underlie technique for myringoplasty but using vein graft and autologus temporal fascia used as graft material firstly by Heerman.[3] The surgical outcome of myringoplasty is influenced by many factors, such as age, size of perforation, allergy and surgical approach. The reported success rate of myringoplasty is therefore variable, partly because of differences in the inclusion and exclusion criteria. In a study, overall success rate of myringoplasty was 86%. Posterior and inferior perforations had a 98% success rate for repair compared to only 67% of anterior perforation. The success rate of subtotal perforation closure was (92.5%)[6] but the poorer results were in younger patients. A study found better success with advancing age,[7] This is due to lower incidence of upper airway infection and better Eustachian tube function in later age and the relative immaturity of system in younger children, Lorenzo Pignataro found better success rate in underlay technique than overly technique.[8] The success rate was 82.3% in the former and 79.1% in the later. At present, myringoplasty is a common operation in the Otolaryngology Department, having microsur-gical facilities. The present study aims to evaluate the surgical and audiological outcome of myringoplasty using underlay technique with temporal fascia graft in selected patients with tympanic membrane perforation and to assess the factors potentially influencing those outcomes.

METHODS

This prospective study was carried out in the department of ENT of Doctor`s Clinic Unit-2, Thanthania, Bogura from July 2016 to June 2017. Sixty (60) cases were selected for this study who underwent myringoplasty using underlay temporal fascia graft. The assessment of the patients was established on the basis of history, clinical examination and audiometric test per operative assessment and postope-rative follow up was done.

Inclusion criteria:

Chronic supporative otitis media (CSOM)-Tubo tympanic type(inactive), uncomplicated, Age between 11 to 50 years and no evidence of cholesteatoma.

Exclusion criteria:

Evidence of cholesteatoma, previous tympanic surgery, severe tympanosclerosis, only hearing ear and chronic otitis externa.

The patients were post operatively followed up at weekly interval for 1st month and then at the period of three months interval for one year. At the follow up examination, result of surgery was regarded as successful, if ear was dry and the tympanic membrane was intact and mobile. Audio metric test Pure Tone Audiometry (PTA) and Impedence were performed after three months and hearing gain or loss was compared with pre-operative test.

RESULTS

Table I shows that overall graft taken in 51 cases (85.0%) and graft failure in 9 cases (15.0%), amongst which complete failure of graft was in 4 patients (6.7%), medialization in one patient (1.7%), residual perforation in 3 patients (5.0%) and re-perforation in one patient (1.7%). In this study maximum patients were noted in the third decade 55%. Graft take rate was also maximum in this age group. The age of the youngest patient was 12 years and age of the oldest patient was 46 years. The mean age was 29 (Table II).

Table I: Graft take rate (n=60)

Tympanic membrane	No. of patients (%)
Graft take (intact & Mobile)	51 (85.0%)
Graft failure	9 (15.0%)

Table I (a): Categories of graft failure (n=9)

Tympanic membrane	No. of patients (%)
Complete graft failure	4 (6.7%)
Medialization	1 (1.7%)
Residual perforation	3 (5.0%)
Re-perforation	1 (1.7%)

Table II: Distribution with relative frequency of graft takes rate in different age groups

Age groups (Years)	No. of patients (60) (%)	Graft take No. of patients (%)	Graft failure No. of patients (%)
11-20	11 (18.3%)	9 (81.8%)	2 (18.2%)
2 1-30	33 (55.0%)	29 (87.9%)	4 (12.1%)
31- 40	13 (21.7%)	11 (84.7%)	2 (15.4%
40 -50	3 (5.0%)	2 (66.7%)	1 (33.3%)
Total	**60 (100.0%)**	**51 (85.0%)**	**9 (15.0%)**

Table III: Relative frequency of graft takes rate in relation to the size of perforation

Size	Myringoplasty No. of patients (%)	Graft takes No. of patients (%)	Graft failure No. of patients (%)
Small (2-3mm)	2 (100.0%)	2 (100.0%)	0 (0.0%)
Medium (4-6mm)	31 (100.0%)	28 (91.3%)	3 (9.7%)
Subtotal (>6mm)	27 (100%)	21 (77.8%)	6 (22.2%)
Total	**60 (100%)**	**51 (85.0%)**	**9 (15.0%)**

The above Table III shows that medium size perforations were the commonest one and graft take rate was (91.3%), which was more than subtotal perforations (77.8%). Graft take was 100.0% in small size perforations.

Table IV: Relative frequency of graft take rate in relation to the site of perforations (n=60)

Site	No. of patients	Graft takes No. of patients (%)	Graft failure No. of patients (%)
Anterior	17	15 (88.2 %)	2 (11.8 %)
Posterior	16	15 (93.7 %)	1 (6.2 %)
Subtotal	27	21 (77.8 %)	6 (22.2 %)

Majority of subtotal perforations were operated but the graft take rate (77.8%) was less than posterior (93.8%) and anterior perforations (88.2 %) shown in Table IV.

Table V: Surgical approach (n-60)

Approach	No. of patients (%)	Graft taken (%)
Postaural	42 (70.0%)	37 (88.1%)
Transcanal	10 (16.7%)	8 (80.0%)
Endaural	8 (13.3%)	6 (75.0%)
Total	**60 (100.0%)**	**51 (85.0%)**

Above Table V shows that most common approach was postaural (70%) followed by transcanal approach (16.7%)). There is no gross difference in graft take rate with regard to approach of surgery.

Table VI: Audiological results in successful cases (51 cases)

(A) Preoperative air conduction threshold

Preoperative air conduction threshold	No. of patients (%)	Mean
0-20 dB	8 (15.7%)	34
21-30 dB	18 (35.3%)	
>30 dB	25 (49.0%)	
Total	**51 (100.0%)**	

(B) Postoperative air conduction threshold

Postoperative air conduction threshold	No. of patients (%)	Mean
0-20 dB	18 (35.3%)	24
21-30 dB	27 (53.0%)	
>30 dB	6 (11.7%)	
Total	**51 (100.0%)**	

(C) Air bone gap in pure tone audiometry of the patients those underwent myringoplasty:

Air bone gap	Mean (dB)
Preoperative air bone gap	23
Postoperative air bone gap	12
Change in air bone gap	11

Table VI (A,B,C) shows that mean preoperative and postoperative air conduction thresholds in successful cases were 34 dB and 24 dB respectively with a mean audiological improvement of 10dB. Improvement of air bone gap was 11dB.

Table -VII: Hearing improvement (n-51)

	Number of Patients	Percentage
Hearing gain	31	60.8
No improvement	20	39.2
Total	**51**	**(100.0%)**

Above Table VII shows that hearing gain occurred in 31 (60.8%) patients and no improvement seen in 20 (39.2%) patients.

DISCUSSION

In this study, 60 patients, those underwent myringoplasty using underlay technique with temporal fascia graft, were studied prospec-tively after taking relevant history, clinical examination, investigation and follow-up. In this series, the graft take rate was 85% (51 out of 60) and the graft failure was 15 % (9 out of 60). This rate of graft intake is more or less similar to the Ugo Fish[10] (86%), and Kotecha[11] (82%),whereas Eero Vartiainen[12] showed that rate of graft intake was 91.2% which is significantly higher than this study. In this study, the lowest and the highest ages of patients at presentation were 12 and 46 years respectively with a mean age of 29 years. Patients' age has generally been considered as influencing surgical outcome. Maximum graft take rate (84.8%) was in the age of 21-30 years, followed by 84.6%, 72.8% and 66.7% in the age groups of 31-40, 11-20 years and 41-50 years age group respectively. Vrabec et al[6] found better success with advancing age. This is due to low incidence of upper airway infections and better Eustachian tube function in this age and the

relative immaturity of the immune system in younger children.

Medium sized perforations were commonest one in this study and the graft take rate was also maximum in this group (91.3%). Graft take rate of subtotal perforation was significantly less (77.8%). In case of small size perforation, graft take rate was 100%. One series showed that the closure rate was reported to be higher in small perforations (74%) than large perforations (56%).[16] In this study, graft take rates in case of posterior and anterior perfora-tion were 93.7% and 88.2% respectively, which was significantly more than that of subtotal perforation (77.8%). The site of perforation statistically affect in our series as has been previously reported by others.[13,14] And higher rate of surgical failure in patients with anterior perforations in comparison to posterior perforations in this study, may have been due to the more limited vascularization of the anterior part of the ear drum, limited access to this perforation as well as difficulty in graft placement also. It may be due to the fact that anteriorly graft may lose contact from the remnant of tympanic membrane, leading to anterior perforation.

Surgical approach depended on dimension of external auditory canal, site of perforation as well as surgeon's preferences. In this study, graft take rate was significantly greater with postauricular approach (88.9%) than that of endaural (75%) and transcanal approach (80%), because, postaural approach gives better view than endaural and transcanal approach. Whenever other series found no difference of graft in take in relation to approach used.[9]

The mean pre and post-operative air conduction threshold in the successful cases were 34 dB and 24 dB respectively, with a mean audiological improvement of 10 dB. Improvement of mean air-bone gap was 11 dB. The best improvement was observed at the frequency of 250-1000 Hz. One might suppose that after a straightforward myringoplasty, the air-bone gap should be within a 10dB. This hearing result was achieved in only 60.8% (31 out of 51) of successful operations. Lee et al and Palva and Ransay stated that mean hearing improvement was 8 dB in their series, this improvement is often similar to our study.[16,17] Sheehy and Anderson[15] stated that in most cases of chronic suppurative otitis media, even though the ossicular chain may appear normal, there are some factors of scar tissue that prevents total restoration of hearing. However, in our series included 20 ears (39.2%) of the successful cases in which hearing was not improved significantly after surgery, despite having the eardrum heal perfectly and the middle ear remain aerated. This is similar to the Ugo Fish[10] who showed that hearing improvement occurred in 66% patient.

CONCLUSION

Myringopasty is a successful treatment moda-lity of tympanic membrane perforation. Success rate was more with advancing age than younger children. Although this also depends on size and approach of operations. So, myringoplasty can be used safely for repair of tympanic membrane perforation and hearing improvement.

Conflicts of Interest: None

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Characteristics of Pleural Fluid in Exudative Pleural Effusion

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ABSTRACT

Introduction: *Since exudative pleural effusion is a manifestation of an underlying specific disease process, its morbidity and mortality are directly related to that particular disease along with its duration and extent at the time of presentation that have some reflection on the findings of pleural fluid study. The aim of the study was to find out the pleural fluid characteristics in exudative pleural effusion.* ***Methods:*** *This prospective analytical study was conducted for a period of one year in the Department of Medicine, Shaheed Ziaur Rahman Medical College Hospital, Bogura enrolling 50 subjects with pleural effusion. The cases with transudate pleural effusion were not included. Pleural fluid was aspirated and analyzed for detecting cause of effusion.* ***Results:*** *Among total 50 study subjects, 37 were male and rest 13 were female. Incidence of tuberculous and malignancy as the causes of pleural effusions were more common in males than those in females. Low-grade fever, cough, weight loss and dyspnoea were found as the most common symptoms of tuberculous effusion. Cough, Chest pain, weight loss and dyspnoea were the common symptoms of malignant pleural effusion. Majority of the subjects had straw 35 (70%) coloured effusion followed by haemorrhagic pleural effusion 11 (22%). Fluid analysis was 47.0% sensitive, 75% specific for diagnosis of tuberculosis and 54.6% sensitive, 92.3% specific for diagnosis of neoplastic diseases.* ***Conclusion:*** *From the present study it was seen that pleural fluid analysis was very effective, safe and cheap procedure in identification of cause (tubercular, malignant etc.) pleural effusion.*

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INTRODUCTION

The accumulation of fluid within the pleural space is one of the most common diagnostic problems encountered by the physicians. In general, pleural fluid accumulates as a result of either increased hydrostatic pressure or decreased colloidal osmotic pressure (transudative effusion) or from increased

microvascular permeability and /or decreased lymphatic drainage due to disease of pleural surface itself, or of adjacent tissues (exudative effusion).[1] When a patient is found to have a pleural effusion, an effort should be made to determine the cause. The first step is to determine whether the effusion is a transudate or an exudate and second step is definitive management.[2] The causes of transudate pleural effusion are congestive cardiac failure, chronic liver disease, nephrotic syndrome and other hypoproteinaemic states like malnutrition, mal-absoption etc. The leading causes of exudative pleural effusion are pneumonia, tuberculosis, malignant disease, connective tissue diseases like systemic lupus erythematosus and rheumatoid arthritis, pulmonary infarction, acute rheumatic fever etc.[1,2] Pleural space normally contains a very thin layer of fluid (5-15ml) which serves as a lubricant and its surface tension help maintaining negative intrapleural pressure during all phases of breathing.[3] Diseases affecting any structure of thorax like pleura itself, lungs, thoracic wall or mediastinal structure can lead to development of pleural effusion. Some extra thoracic sources like subphrenic abscess, liver abscess or acute pancreatitis and some systemic disease may also cause it. Pleural effusion is not a diagnosis but describes the underlying pathological process involving the pleura either primarily or secondarily.[4,5] Clinical presentation of pleural effusion varies from asymptomatic to life threatening symptoms depending upon the volume of effusion and underlying disease process. Pleural effusion affecting minimal lung functions is well tolerated, whereas similar effusion in patients with underlying severe lung disease may cause ventilator failures.[3-5] By taking proper history, performing physical examination and necessary investigations definitive aetiological diagnosis of pleural effusion could be made which would help and influence the effective management of pleural effusion.[6] However, in some cases, the exact cause and clinical significance of pleural effusion is not obvious. If carefully done, thoracocentesis is a relatively uncomplicated technique, well tolerated and quite safe. It is an appropriate procedure for the well-trained physician. In most circumstances diagnostic thoracocentesis may be done in an ambulatory setting.

A wide variety of potential testing options with pleural fluid including its physical appearance, chemical analysis, cytologic and bacteriologic evaluation are available. Thoracocentesis and pleural fluid study very often diagnostic and even if not, may give a clue to further invasive work up needed for diagnosis. Straw coloured pleural fluid may suggest tuberculosis while haemorhagic fluid raises the possibilities of tuberculosis, bronchial carcinoma, pulmonary infarct etc. A predominant lymphocytic count may suggest tuberculosis, malignancy or chronic rheumatoid disease while polymorphonuclear predominant effusion suggests parapneumonic effusion, empyema, oesophageal rupture, acute rheumatoid process or lupus pleuritis.[1,5-8] The presence of pleural fluid eosinophilia considerably reduces the possibility of malignancy.[4,8] Measurements of pleural fluid pH, lactate dehydrogenase (LDH) and adenosine deaminase (ADA) levels, though very informative, are not widely available. A very low glucose level of (<20 mg/dl) is highly suggestive of rheumatoid disease but low glucose level (<60 mg/dl) may be found in bacterial, tuberculous as well as in malignant effusion.[1,5,7,8] Pleural fluid amylase level higher than that of plasma usually signifies acute pancreatitis as the cause.[1] This current study was carried out to identify the aetiology of pleural effusion in an effective and economic way and can produce awareness among all level of medical practitioners, minimize diagnostic dilemma and enhance prompt diagnosis or at

least early referral and thereby reducing suffering and cost of expensive test of the poor population of this country.

METHODS

This prospective analytical study was conducted for a period of one year (January 2008 to December 2008**)** at Department of Medicine in Shaheed Ziaur Rahman Medical College Hospital, Bogura, enrolling 50 subjects with pleural effusion. All patients admitted in hospital those were found to have pleural effusion on the X- ray films and confirmed by ultrasonogram were selected as study population. The cases of pleural effusion diagnosed to be transudative from clinical and/or laboratory evidence, viz. due to congestive cardiac failure, nephrotic syndrome, chronic liver disease and other hypoproteinaemic states, were excluded from the study. After taking informed written consent, thorough physical examination was carried out giving emphasis to confirm the diagnosis of pleural effusion as well as aetiological aspect of pleural effusion. All the relevant information from history, clinical findings and investigation results were recorded in a predesigned questionnaire. Pleural fluid was aspirated under aseptic precaution from all of the selected cases for the aetiological diagnosis. After collecting the fluid, it was sent for biochemical, microbiological and cytological analysis to the specific department.

RESULTS

Among total 50 study subjects, 37 (74.0%) were male and rest 13 (26.0%) were female. Majority (10, 29.4%) of the tuberculous pleural effusion cases found among 21-30 years age group. Tuberculosis occurred between 21 to 40 years of age in majority of subjects. Malignant effusion was found between 41 to 70 years of age. No malignant effusion was found below 40 years of age (Table I).

Table I: Age distribution in different groups of pleural effusion patients (n=50)

Age in years	Tuberculous pleural effusion (n=34) No. (%)	Malignant pleural effusion (n=11) No. (%)	Others (n=5) No. (%)
11-20	6 (17.7)	0	1 (20.0)
21-30	10 (29.4)	0	2 (40.0)
31-40	5 (14.7)	0	1 (20.0)
41-50	6 (17.6)	4 (3)	1 (20.0)
51-60	4 (11.7)	5 (45.4)	0
61-70	2 (05.8)	2 (18.1)	0
Above 70	1 (02.9)	0	0
Total (n=50)	**34 (68.0)**	**11 (22.0)**	**5 (10.0)**

Incidence of tuberculsis and malignancy as the causes of pleural effusions was more common in males than that in females. In current study, out of 34 cases of tuberculous pleural effusion, 23 (68.0%) were males and 11 (32.0 %) were females and out of 11 cases of malignant effusion, 9 (81.8%) were males and 2 (8.2%) were females (Table II).

Table II: Gender distribution of different types of pleural effusion patients (n=50)

Type of Pleural effusion	No. Of patients	Male (%)	Female (%)
Tuberculous	34	23 (68.0)	11 (32.0)
Malignant	11	9 (81.8)	2 (18.2)
Others	5	4 (80.0)	1 (20.0)

Low-grade fever, cough, weight loss and dyspnoea were found as the most common symptoms of tuberculous effusion. Cough, Chest pain, weight loss and dyspnoea were the common symptoms of malignant pleural effusion. Hoarseness of voice was found in 6 (54.5%) cases of malignant pleural effusion (Table III), 35 (70.0%) subjects had straw coloured effusion, whereas 11 (22.0%) had haemorrhagic pleural effusion. Out of 34 tuberculous patients, 28 (80.0%) had straw colour in effusion and in malignant pleural effusion 7 (63.6%) had haemorrhagic type (Table IV).

Table III: Relative rates of symptoms present among different groups of pleural effusion (n=50)

Symptoms and signs	Tuberculous (n=34)	Malignant (n=11)	Others (n=05)
Cough	34 (100.0%)	09 (81.8%)	04 (80.0%)
Fever	34 (100.0%)	06 (54.5%)	05 (100.0%)
Dyspnoea	23 (67.6%)	07 (63.6%)	03 (60.0%)
Chest pain	16 (47.0%)	08 (72.7%)	04 (80.0%)
Haemoptysis	19 (55.8%)	09 (81.8%)	01 (20.0%)
Weight loss	30 (88.2%)	09 (81.8%)	03 (60%)
Sputum	23 (67.6%)	07 (63.6%)	04 (80%)
Hoarseness of voice	00 (0%)	06 (54.5%)	00 (0%)

Table IV: Appearance of pleural effusion in different groups (n=50)

Appearance	Pleural Effusion			Total (%)
	Tuberculous no. (%)	Malignant no. (%)	Others no. (%)	
Straw	28 (80.0)	4 (11.4)	3 (8.6)	35 (70.0)
Amber	2 (100.0)	0 (0.0)	0 (0.0)	2 (4.0)
Haemorrhagic	4 (36.4)	7 (63.6)	0 (0.0)	11 (22.0)
Turbid	0 (0.0)	0 (.0)	2 (100.0)	2 (4.0)
Total	**34 (68.0)**	**11 (22.0)**	**5 (10.0)**	**50 (100.0)**

Increased lymphocyte counts were found in most of the cases of tuberculous effusion, with or without leukocytosis (Table V). Parapneumonic effusion or empyema was associated with neutrophilic leukocytosis. Tuberculosis (34, 68.0%) was the most common cause of pleural effusion among study subjects. Sputum for AFB was found positive in 2 (5.9%) subjects. AFB was also found

in Z-N staining of pleural fluid in 2 cases. Pleural biopsy was positive in 25 (73.5%) subjects. Lymph node biopsy was done in 3 cases and positive result was found in 1case. Total 11 (22%) cases were confirmed to be of malignant origin. Nine cases were diagnosed by cytology of pleural fluid and pleural biopsy. One case was confirmed by lymph node biopsy and another by bronchoscopy biopsy with histopathology (Table VI). Fluid analysis was 47.0% sensitive, 75% specific for diagnosis of tuberculosis and 54.6% sensitive and 92.3% specific for diagnosis of neoplastic diseases (Figure 1).

Table V: Predominant cell type in different group of pleural effusion

Predominant Cell type	Final diagnosis					Total
	Tuberculous n (%)	Carcinoma n (%)	Empyema n (%)	Undiagnosed n (%)	Lymphoma n (%)	
Lymphocytes	22 (64.7%)	8 (23.5%)	1 (2.9%)	2 (5.9%)	1 (2.9%)	34
Polymorphs	3 (6%)	0 (0%)	2 (40%)	0 (0%)	0 (0%)	5
Mixed	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7
RBC	2 (50%)	2 50%)	0(0%)	0 (0%)	0 (0%)	4

Table VI: Methods of diagnosis of tuberculous pleural effusion (n= 34)

Methods	Number of Positive cases	Percentage (%)
Histopathology of pleura	25	73.5%
Culture of pleural tissue in L-J medium	04	11.8%
AFB stain &Culture of pleural fluid in L-J medium	02	5.9%
Sputum for AFB stain	02	5.9%
Lymph node biopsy	01	2.9%
Total	**34**	**100**

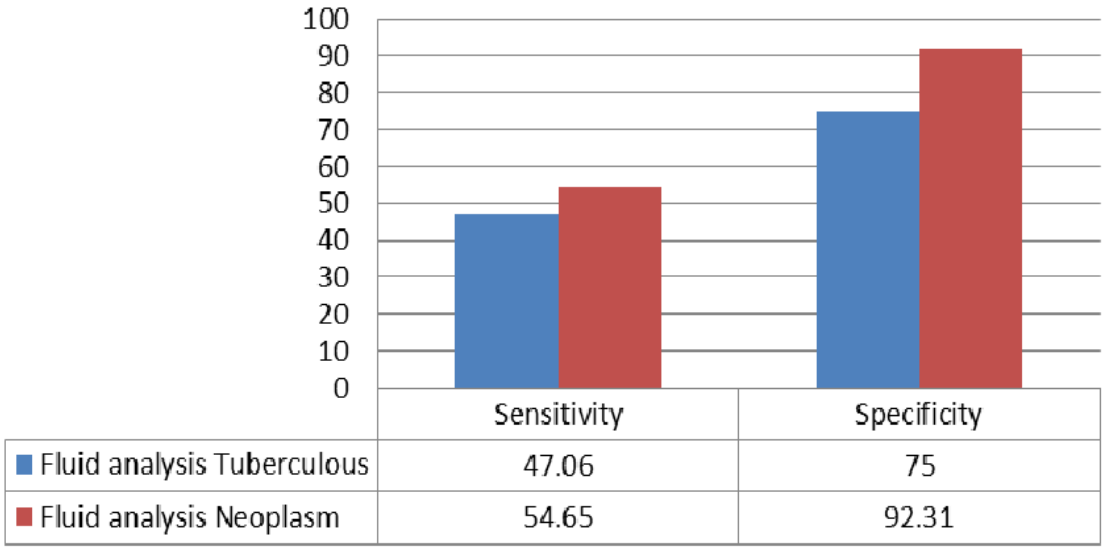

Figure 1: Analysis of sensitivity and specificity of different diseases diagnosed in pleural fluid

DISCUSSION

The aim of the study was to find out the pleural fluid characteristics in exudative pleural effusion. The mean age was 35.58 years. Age range varied between 11 to 70 years. In pleural effusion due to tuberculous origin, common age was in the third decade having 10 (29%) cases, as reactivation of tuberculosis occurs in this age group.[3] This has also correlated with the findings of another previous study.[8] The highest age incidence for malignant effusion patients was the 6th decade followed by fifth decade. This report is also consistent with the study[8] showing the percentage of male female as 83% and 17% respectively. Another researcher[9] showed in his study the percentage of male female as 56% and 44% respectively. Out of 50 patients 34 patients (68%) had tuberculosis, 10 (20%) patients had malignant effusion. Three patients had empya-ema, 1 lymphoma and 2 cases were undiagnosed. This finding is not consistent with previous report[10] where 414 patients in Mayo clinic found 68% of their patients to be of malignant origin and only 13% to be of tuberculous origin. In our country tuberculosis is the most common etiology of pleural effusion.[9] In the current study, among the malignant causes, adenocarcinoma topped the list followed by squamous cell carcinoma. Some 07 cases (63.6%) had adenocarcinoma which is consistent with a previous study[4] which found 70% of their cases to be adenocarcinoma. In 2 (18.1%) cases, we did not find out the cause after repeated fluid study. Researchers found the unidentified cases number to be 19%.[2] One patient of this present study had lymphoma. So, it is seen that lymphoma is not an uncommon cause of pleural effusion. Thirty four cases of tuberculous pleural effusions were diagnosed. Eleven cases of malignant effusions were confirmed by different methods. In current study, pleural fluid analysis was 47.0 % sensitive, 75% specific for diagnosis of tuberculosis and 54.6 % sensitive, 92.3% specific for diagnosis of neoplastic diseases. Similar result was observed in previous study where it was seen that sensitivity, specificity value of pleural fluid analysis was 70%, 100% respectively in diagnosis malignancy.[11]

CONCLUSION

Tuberculosis and malignancy are two most common causes of exudative pleural effusion in our country. Majority of the subjects with pleural effusions were of tuberculous origin and rest one third from malignant causes. Acid fast staining of pleural fluid does not give much yield and mycobacterial culture of pleural fluid is a lengthy and difficult procedure and furthermore this procedure is not much yielding.

Conflict of interest: None

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Platelet Count in Preeclampsia and Eclampsia and its Association with the Severity of Disease

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ABSTRACT

Introduction*: Eclampsia is one of the commonest pregnancy complications in developing countries like Bangladesh and a major cause of maternal mortality and morbidity. This study was done to investigate the platelet count in preeclampsia and eclampsia cases and to evaluate its association with severity of disease conditions.* ***Methods****: Total 195 pregnant women with preeclampsia (67) and eclampsia (128), admitted in eclampsia ward of Dhaka Medical College Hospital (DMCH),were enrolled in this study from July 2009 to June 2011. An amount of 1.5 ml blood was drawn from the cubital vein of each patient and platelet count was done by Sysmex 800i fully automated haematology analyzer of Department of Haematology, DMCH.* ***Results****: Most of the patients were 25 years old or younger. The mean gestational age was 31.58± 2.42 weeks. Mean systolic and diastolic blood pressure of study subjects were 164.00± 22.64mm of Hg and 109.00±14.83mm Hg respectively. No significant correlation was found between systolic blood pressure and decreasing platelet count (p=0.271). Diastolic blood pressure (p=0.018) and proteinuria (p=0.044) showed statistically significant correlation with probability of developing thrombocytopenia. The severity of thrombocytopenia in pre-eclampsia and eclampsia showed very highly significant difference (p=.0001).* ***Conclusion:*** *Platelet count may be used as the easiest, earliest and cheapest indicator of severity of the disease. Early diagnosis and appropriate treatment results in better maternal and foetal outcome ensuring a good health care system.*

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INTRODUCTION

Eclampsia is one of the commonest pregnancy complications in developing country like us and a major cause of maternal mortality and morbidity. In Bangladesh 71% of total deliveries happen in home by unskilled birth attendants and only 23% of women deliver under medical supervision, the rest have no access to obstetric care[1].As a result most cases of preeclampsia remain unrecognized until severe complications like eclampsia occurs. It is estimated that every year eclampsia is associated with about 50,000 maternal deaths worldwide, predictably again most of which occur in the developing countries.[2] The current incidence of eclampsia are 0.04% to 0.1% in the United states and United kingdom, on the contrary with a much high rate as great as 15% in some parts of Asia, Africa and Latin America.[3]Eclampsia is the second most important cause of maternal death in Bangladesh contributing 20% of all maternal deaths due to obstetric complications.[2] Changes in the coagulation system in established preeclampsia is well documented. Out of all the haematological changes that occur in eclampsia or preeclampsia, thrombocytopenia is the most common. The degree of thrombocytopenia increases with severity of disease. Lower the platelet count, greater are maternal and foetal morbidity and mortality.[4] The lower platelet count in preeclampsia and eclampsia is associated with abnormal activation of the coagulation system and are believed to reflect increased platelet consumption.

METHODS

This cross-sectional study was done in Department of Obstetrics and Gynaecology and Department of Haematology of Dhaka Medical College Hospital, Dhaka. This study was carried out from July 2009 to June 2011. For the purpose of the study, Preeclampsia was defined as a condition with blood pressure of >140/90 mm Hg on at least two occasions, 4-6 hours apart after 20 weeks of gestation, along with proteinuria. Proteinuria was defined as excretion of 300 mg of protein or more every 24 hours in urine. A patient with pre-eclampsia when complicated with convulsion and/or coma was called a case of eclampsia. Total 67 preeclamptic patients and 128 eclamptic patients were included in the study. As there is an eclampsia ward present in Dhaka Medical College Hospital, larger numbers of eclamptic patients were available during the study period. Current study involved collections of both interview and laboratory data. Blood pressure was measured in lying position keeping the sphygmomanometer at the level of heart. Blood was collected by vein puncture from cubital vein into collection tubes containing an anti-coagulant EDTA. Platelet count was done by Sysmex 800i*- fully automated haematology analyzer of Department of Haematology, Dhaka Medical College Hospital, Dhaka. It primarily utilizes fluorescent based flow cytometry as the modality for analysis. From each blood sample, a slide was prepared and stained. Then it was manually counted under microscope and the count was matched. Urine protein (albumin) test was done by reagent strips (uric 2 V GP, Bayer GMBH, Germany).The dipstick strip had a detection limit of 10 mg/dl of protein. According to colour change of the strip, proteinuria was graded (1+,2+,3+,4+). Collected data were stored and screened for any discrepancy. The edited data were analyzed in SPSS 13.

DATA ANALYSIS: For background variables and socio-demographic data descriptive statistics were generated and relative frequency (percentage) was showed. Degree of proteinuria of both groups of patients was analyzed using Chi-square test. Correlation of Blood Pressure and platelet count was sought through Pearson's Correlation Test. Correlation of proteinuria and platelet count was shown through Spearman's Rank Correlation Test.

RESULTS

A total number of 195 pregnant women were included. Among them, 67 were preeclamptic and 128 were eclamptic women. The data were analyzed by descriptive statistics, Chi square and student's t-test, Pearson's Correlation Test and Spearman's Rank Correlation Test. The results of this study show that majority of the patients were< 25 years. Mean age of preeclamptic and eclamptic patients were 27.13±5.19 years and 24.84±4.87 years respectively (Table I). Socio-economic status of most of the subjects of both groups was low. Most of preeclamptic patients were multigravidae and eclamptic patients were primigravidae. Majority of the preeclamptic (62.7%) and eclamptic (53.l%) patients had gestation>32 weeks. Mean systolic blood pressure (SBP) of preeclamptic and eclamptic patients were 164.55±23.37 mm Hg and 163.71±22.34 mm Hg (TableI) respectively. Mean diastolic blood pressure (DBP) of preeclamptic and of eclamptic patients were 106.94±12.52 mm Hg and 110.08±15.85 mm Hg(TableI) respectively. 68.6% of preeclamptic and 84.4% of eclamptic patients had severe proteinuria on dip stick method (Table I). This study shows that 31.3% of preeclamptic and 39.8% of eclamptic patients had platelet count <150,000/cu mm. Mean platelet count of preeclamptic and eclamptic patients were 197,402.99±80,124.54 and 177,750.00±91,376.6 (Table I) respectively. It was observed that there was a negative correlation between SBP (Table II, Figure 1), DBP (Table III, Figure 2) and degree of proteinuria (Table IV, Figure 3) with platelet count in the study subjects. The relation between SBP and platelet count was not statistically significant. But statistically highly significant relation was found in case of other two attributes that is DBP and proteinuria with platelet count.

Table I: Patient's characteristics

Parameter	Results	
	Preeclampsia (67)	Eclampsia (128)
Age (in years)	27.13 ± 5.19	25.63 ± 5.09
Gestational age (in weeks)	31.88 ± 2.01	31.58 ± 2.42
Parity		
Primi	22 (32.8%)	71 (55.5%)
Multi	45 (67.2%)	57 (52.31%)
Socio-economic status		
Middle class	32 (47.8%)	38 (29.7%)
Lower class	35 (52.2%)	90 (70.3%)
Systolic Blood Pressure (mmHg)	164.55 ± 23.37	163.71 ± 22.34
Diastolic Blood Pressure(mmHg)	106.94 ± 12.52	110.08 ± 15.85
Platelet Count	197402.99 ± 80,124.54	177750.00 ± 91,376.61
Thrombocytopenia(<150,000/cu mm)	21 (31.3%)	51 (39.84%)
Proteinuria (≥3+)	46 (68.6%)	108 (84.4%)

Table II: Relation between Systolic Blood Pressure and platelet count

Disease Condition	Mean Systolic Blood Pressure mmHg	Mean Platelet Count/cu mm	r value	*p* value
Preeclampsia	164.55±23.37	197402.99±80,124.54		
Eclampsia	163.71±22.34	177750.00±91,376.61	_0.079	0.271^{ns}

ns = not significant

Table III: Relation between Diastolic blood pressure and platelet count

Disease Condition	Mean Diastolic Blood Pressure mmHg	Mean Platelet Count/cu mm	r value	*p* value
Preeclampsia	10694±12.52	197402.99±80124.54		
Eclampsia	110.08±15.85	177750.00±91376.61	_0.170	0.018*

***Significant. Here Pearson's Correlation Test was done

Table IV: Relation between Proteinuria and Thrombocytopenia

Disease condition	Thrombocytopenia <150,000/cumm	Proteinuria ≥3+	r value	*p* value
Preeclampsia	110952.38±40,451.79	21(31.34%)	_0.144	0.044*(<0.05)
Eclampsia	79490.20±29,479.74	51(39.84%)		

Here Spearman's Rank Correlation Test was done.

Table V: Comparison of thrombocytopenia between preeclampsia and eclampsia

Disease Condition	Thrombocytopenia<150,000/cumm	*p* value
Preeclampsia (n=21)	110952.38±40,451.79	
Eclampsia (n=51)	79490.20±29,479.74	0.0001***

Data were analyzed using unpaired student's 't' test and presented by mean±SD. Total 72 patients had thrombocytopenia. Out of 72 patients 21 had preeclampsia and 51 had eclampsia. The difference was statistically very highly significant (p= 0.0001).

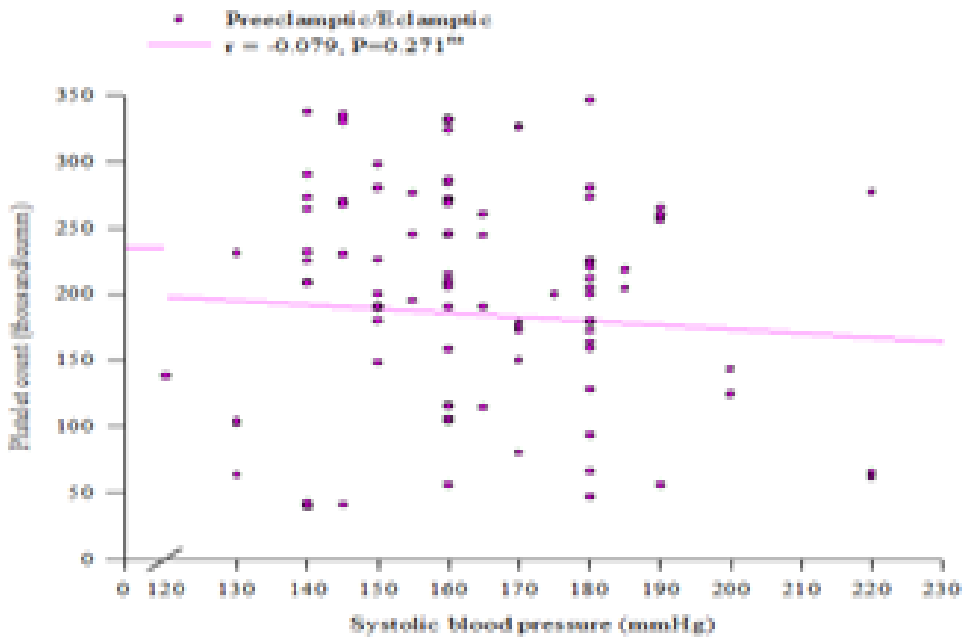

Figure 1: Relation between systolic blood pressure and platelet count

Systolic blood pressure (SBP) of preeclamptic and eclamptic patients was plotted against platelet count. The figure shows negative correlation between SBP and platelet Count. No statistically significant correlation was found between the two attributes ($p>0.05$).

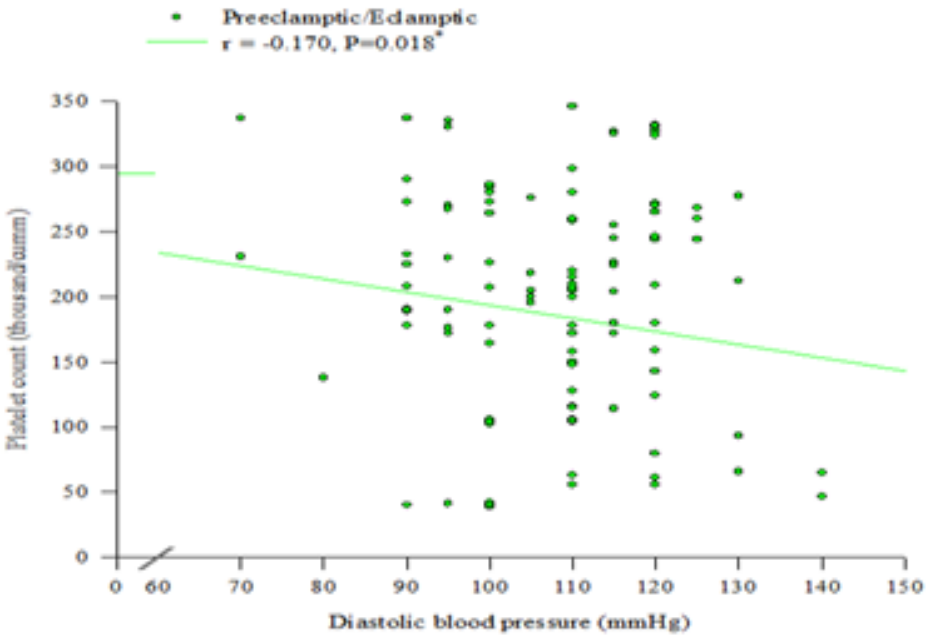

Figure 2: Relation between diastolic blood pressure and platelet count

Diastolic blood pressure of preeclamptic and eclamptic patients was plotted against platelet count. The graph shows moderate negative correlation. Statistically significant correlation was found between the two attributes ($p< 0.05$).

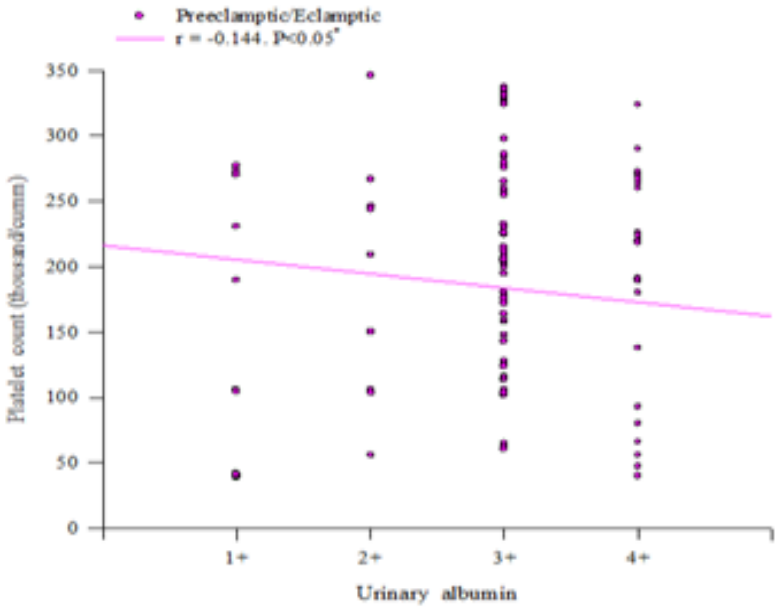

Figure 3: Relation between degree of urine albumin, platelet count of both preeclamptic and eclamptic patients.

The graph shows moderate negative correlation between two attributes which was statistically significant ($p<0.05$).

DISCUSSION

Preeclampsia is a poorly understood condition of human pregnancy, which can affect multiple organs and is a leading cause of maternal death worldwide. The aetiology and patho-physiology remain an enigma, however which hampers progress in prevention, diagnosis and treatment of this condition.[5] Despite decades of intense research, how pregnancy incites or aggravates hypertension remains unsolved.[6] This present cross-sectional analytic study was carried out to determine the proportion of thrombocytopenia among pre-eclamptic and eclamptic patients. This study also aimed at to evaluate association of severity of preeclampsia and eclampsia with degree of thrombocytopenia. Degree of hypertension and proteinuria were considered as the degree of severity of the disease process and eclampsia was taken as a more severe disease than preeclampsia.

In the current study, the mean age was 27.13±5.19 years in preeclampsia, 24.14±4.87 years in eclampsia and mean age of total (n=195) study subject was 25.63±5.09 years. Another study[7]showed higher mean age 27.6±3.8 years. However multiple studies[4,8,9] showed almost similar mean (±SD) age like our study. It was observed in this study that the mean gestational age was 31.88±2.01 weeks and 31.42±2.60 weeks in preeclampsia and eclampsia group respectively. But in another study[4] it was stated that the mean gestational age was 35.1±3.1 weeks in pre-eclampsia and 35.56±2.1 weeks in eclampsia which was higher than our findings. In a different study.[10] it showed that 73.56% of the pre-eclamptic women are >32 weeks of gestational period; the percentage is also higher than present study. Our study showed 52.31% of patients were multipara. Multipara was also found in 76.5% of pre-eclamptic patients[11]like our study elsewhere. Two different studies got majority of eclamptic patient as primi.[9,10] Low socio-economic status is a strong risk factor for preeclampsia. Only a small part of this association

can be explained by the mediating effects of established risk factors for preeclampsia. In this study majority (64.11%) of the patients came from lower socio-economic class. Studies[9,12] showed that most of the eclampsia cases were from below average socio-economic status which matched with ours. In this study most of the cases were presented with severe proteinuria (68.6% of preeclampsia and 84.4% of eclampsia). Majority of the patients that is 74.96% had proteinuria >3+. There was statistically significant (p<0.05) difference in between preeclampsia and eclampsia group in terms of proteinuria but 30.5% of eclampsia patients in contrast with 14.9% of preeclampsia patients had 4+ proteinuria. Severe grade of proteinuria was evident in more severe disease. The severity of the proteinuria in pre-eclampsia has been regarded as a predictor of adverse outcomes for the mother.[13] Others have been less sanguine about the relationship.[14] A reliable correlation between the level of proteinuria and severity of pre-eclamptic complications would be extremely valuable for clinical decision making. In a study it was observed that proteinuria in pre-eclampsia is associated with more severe fetal involvement and growth retardation.[15]

In our study, thrombocytopenia was present in 21(31.3%) of pre-eclamptic patients and 51 (39.8%) of eclamptic patients. The mean ±SD platelet count was 197,402.99±80,124.54 in pre-eclamptic patients and 177,750.00±91,376.61 in eclamptic patients. The mean for the both groups was found to be 184,502.56/cu mm. A different study[4] shows a lower count than this, 1.82 lacs/mm3 ± 0.45 in preeclampsia and 1.21 lacs/mm3 ± 0.49 in eclampsia. A study shows platelet count 155,500±31,290 in preeclampsia and 131,000±33,279 in eclampsia (p<0.0001) which is also lower than the current study.[8] Another study[12] found 47.00% of patients with PE and eclampsia having low platelet count (<150,000/mm3). Among the eclamptic group 60.00% had low platelet count (<150,000). The result also matches with our study in terms of association of low platelet count and eclampsia but the percentage is higher than ours.Mean platelet count in our study was higher than others.[4,8,16,17] Current study shows very highly significant difference in extent of thrombocyto-penia (0.0001) between preeclampsia and eclampsia. This finding is similar with two more studies.[4,17] Other studies observed no remarkable difference.[16,18] in degree of throm-bocytopenia.

CONCLUSION

Current study shows that thrombocytopenia was prominent in preeclampsia and eclampsia group. The relation between systolic blood pressure and platelet count was not significant. But there was a significant relation between diastolic blood pressure and proteinuria with platelet count. Thrombocytopenia was more pronounced in the eclampsia group than the preeclampsia group which was statistically highly significant (p=0.0001). So, it may be concluded that thrombocytopenia is significantly related with the severity of the disease.

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Teacher Professionalism

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ABSTRACT

Teachers are responsible for the education and well being of the students, and they serve as an influential role model in Students lives. The teachers' ethical and personal qualities of empathy, care, respect, fairness, motivation, determination, and a strong belief that they can make a difference in a student's life dispositions associated with professionalism. The purpose of this paper is to discuss how teacher professionalism is defined in scholarly debates in recent times. Within this purpose the definitions of professionalism, criteria of professionalism, and the characteristics of a professional teacher and status of teacher professionalism will be discussed from different perspectives. This paper will offer an operational definition of teacher professionalism and an integrative approach about multiple interpretations of teacher professionalism in sociological, political and educational context. In the light of multiple approaches, it will be concluded that teacher professionalism means meeting certain standards in education and it is related to proficiency.

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INTRODUCTION

The concept of professionalism is defined from the point of different perspectives and then how these definitions are associated to teaching profession is analyzed. The concept of professionalism in teaching is commonly discussed on sociological, educational and ideological bases in the literature. Secondly, the key ideas of professionalism approaches underlying these bases are reflected in brief. Lastly, in the light of multiple perspectives and arguments, a workable definition for today's teacher professionalism conception and its interpretation embracing these perspectives have been tried to be presented. Medical professionalism is a challenging, evolving, and life-long endeavor.[1] George Bernard Shaw[2] stated that modern medical professionalism includes the ability to communicate specialist knowledge, diagnosis and treatment options in an easy-to-understand way, rather than seeking to use specialist knowledge as a means to create distance from, and a dependency of, the public. The purpose of this review is to establish the basis of teacher professionalism. In order to do so, number of questions need to be explored. The first one is whether it is valid to talk about teacher professionalism at all. There has long been conflict about whether teaching can be termed a profession or whether it is more

appropriately classified as a semi-profession. If so, what does that means? Finding answers to these questions necessitates an examination of different formulations of 'profession' to establish how these relate to the occupation of being a teacher. This also pursues a number of avenues of enquiry that applied to conception of teacher professionalism, with particular emphasis on the knowledge base of teaching.

Teacher professionalism encompasses the key characteristics of professional competence, performance, and conduct. Competence refers to the teachers' knowledge of their subject area, as well as their understanding of teaching methods. Performance refers to instructional strategies and the ability to communicate the curriculum to students. Professional conduct includes behavior, language, and personal appearance, as well as attitude and dispositions.

Dispositions are guided by our beliefs and attitudes. They are the values, commitments, and professional ethics that influence our behaviors toward students, families, colleagues and communities. They affect our students' learning, motivation, and development and guide our professional growth.

Professional conduct includes a number of components that are necessary to effectively do the job. Examples include: being on time, demonstrating professional writing and verbal skills, being prepared to teach, dressing appropriately, having classroom materials prepared and organized and maintaining confidentiality.

In historical context, the issue that whether teaching is a professional status or not has been controversial. According to some authors,[3,4] teaching is a semi-professional job because they are directed to perform certain standards by their superiors. As a result of this teachers' individual autonomy and decision making powers are limited. Other authors[5,6] believe that it is more useful to approach professionalism as an ideological construct that is used for occupational control on teachers. Another approach[7] reflects a positive attitude towards teacher professionalism and identifies the term as the best highest standards for teachers.

The need to attain and develop certain standards and benchmarking criteria for all professions has increased in today's competitive work conditions. Standards create a professional environment of "best practice" procedures enabling organizations to confidently create systems, policies and procedures; they also assure high operational quality.[8] This phenomenon makes a current issue of improving the occupation standards and qualifications of teachers to comply with the up to date developments like other occupation groups in other organizations. At this position, the concept of professionalism comes into importance which is considered to be the key elements of effectiveness in work life.

The concept has been controversial one in different occupation groups with a long history especially in sociological ground and still it is the subject of many scholarly debates. The dynamic nature of the term and its multiple interpretations establish different definitions of the concepts with different functions. When the subject is teacher professionalism,[9] the meaning of the term changes as response to external pressures, public discourses and scientific developments. However, it seems possible to make workable professionalism definition in the field of education based on these different approaches. So, it would be useful to begin with some definitions.

1. The Concept of Profession

Alistair Cook, American journalist (1908-2004) stated that, a profession can be defined as an occupation or 'calling', especially one involving a degree of skill, learning or science or "a trade or occupation pursued for higher motives, to a proper standard".[10]

The distinction is usually drawn between a professional (i.e., someone who earns a living from their trade or occupation), and an amateur (i.e., someone who might do the same or a similar thing, but without remuneration). But the difference is not simply that one is paid and the other is not, because a 'professional' performance is one which is good, polished and of a high quality, whereas an 'amateurish' performance is the opposite---however much or little payment might have been received. But all professions are conspiracy against the laity.[2]

A logical conclusion is that if a person intends to rely upon a certain trade or occupation as their main source of income, then they would need to be proficient at it, and be recognized as being so.

A rise of the classical or 'true' professions brought about another social class distinction, namely between 'professional' and 'semi-professionals' or 'para-professionals'.[32] Those who served the medieval courts of Europe as physicians, jurists, ambassadors and bureaucrats were accorded professional status, in a social order maintained by 'professional armies'.[33] 'Semi-professionals' or 'para-professionals' performed similar services for ordinary people: the barber who shaved and trimmed hair but who also performed surgical procedures and extracted teeth, practitioners of folk medicine and midwives (Singman, cited in Crook, ibid).

It was only in mid-nineteenth century that a broadening of professional groups started to occur across Western Europe and North America. Crook[33] also notes developments further afield that in China the distinction between 'profession' and 'occupation' was first made in 1929, when doctors, lawyers, accountants, engineers, professors and journalists were officially identified as elite professionals.

2. The Concept of Professionalism

In relation to changing historical, political and social contexts, it is indispensable to establish the conceptions of teacher professionalism as its multiple meanings have altered and developed over time and in contestation between rival stakeholder groups and their interests.[11] The concept of professionalism is used in different senses and rather difficult to define. For example, in daily language, it is generally used to imply an activity for which one is to pay as opposed to doing voluntarily. The term is also used to classify the status of profession groups in terms of responsibility.[12] In business world; professionalism is generally synonymous with "success" or refers to the expected behaviors of individuals in specific occupations.[13]

The terms "profession" and "professor" have their etymological roots in the Latin for profess. To be a professional or a professor was to confess to be an expert in some skill or felid of knowledge.[14] In 1975, Holy defined professionalism as 'those strategies and rhetorics employed by members of an occupation in seeking to improve status, salary and condition'.[15] In his another work, he states that professionalism is related to the improvement in the quality of service rather than the enrichment of status.[16] If we synthesize the definitions up to now, it is possible to interpret professionalism as a multi dimensional structure including one's work behaviors and attitudes to perform the highest standards and improve the service quality. Dame Janet Smith stated that: "Professionalism is a basket of qualities that enables us to trust our advisor." It 'focuses on question of what qualifications and acquired capacities, what competence is required for the successful exercise of an occupation.[17] Bull[18] stated that autonomy is a component of teacher professionalism and it provides individual decision making area to achieve one's aims and outcome of controlling the situation related to his/her work. It is not only functions as a buffer against the pressures on teachers but is also a means of strengthening them in terms of personal and professional sense.[18] Consequently; it has an opposite role of organizational control.[19, 20]

It appears that the focuses on defining and conceptualizing the nature of professionalism are, "the respectability status of the occupation",[12] improvement of service quality,[16] "achievement of the highest standards",[21] "self-control"[22] and "professional autonomy".[3, 19,20,23]

3. Teacher Professionalism

Is teaching a profession?

Whether teaching counts as a profession or not has long been a vexed issue.[24-28] Using the conceptual framework developed thus far the first argument would be that no modern profession can emulate the ideal-type traits of the classical professions—not even modern versions of those professions themselves.

For this reason Etzioni grouped teachers, nurses and social workers among the 'semi-professions'.[29] Some authors argue that quasi or semiprofessions fail the definitional test of a profession in different point of view.[25] Beck concurs that one of the main reasons for its semi-professional positioning was that the school teaching was and remains a strongly feminized occupation.[30]

Leiter[3] observes that occupations such as teaching and nursing claim professional status but are not completely accorded this status because their individual autonomy is often under organizational control. More specifically, teachers are monitored by their administrators in terms of the consistency between their performance and the standards set before. As a result, they are directed and shaped by the administrators to achieve organizational goals so their autonomy is restricted. Samuels[4] supports these arguments asserting the public school teachers do not have a high level of authority since the major decisions in education settings are taken by them.

Depending on the educational context, it is possible to say that definitions of teacher professionalism focus on teachers' professional qualifications such as 'being good at his/her job", "fulfilling the highest standards", and "achieving excellence". Baggini claims that for today's teachers, professionalism is interpreted in terms of what extent the teachers' outcome the difficulties and what extent they are able to use their skills and experiences related to their profession.[14] On the most basic level, 'professional teacher refers to the category of a person who is remunerated to teach'; on a higher level, it can refer to teachers who represent the best in the profession and set the highest standards.[13] Phelps believes professionalism is enhanced when teachers use excellence as a critical criterion for judging their actions and attitudes.[7] In other words, professionalism is measured by the best and the highest standards.

New understanding of teacher professionalism provides professional liberty and provisions for teachers to take responsibility in their practices. Sachs calls this transition from old to new understanding as "transformative professionalism".[9] Sachs's approach to teacher professionalism can be interpreted as a challenge to revitalize the concept in rapidly changing work environment. He believes the teacher professionalism issue as a social and political strategy to promote the status of teaching profession. His approach is an alternative and up to date one when compared to traditional approach. It will be concluded that there is a consensus to a great extent that the purpose behind the teacher professionalism attempts in ideological base are viewed as occupational control and authorizing teachers by strength-ening the work demands.

CONCLUSION

In the glow of the different approaches to teacher professionalism in scholarly debates, it is evident that the meanings accredited to teacher professionalism and the grade of teaching has a dynamic characteristic. This dynamism stems

from the political and social changes and results in the variable meaning and status of the teaching profession in historical context. The up to date explanations of teacher professionalism has a modified meaning from the earlier beliefs in the sense that teachers confront with multiple pressures, exaggerated work demands and more occupational control in recent times.

It could be concluded from the discussions that we cannot talk about an agreement on the conceptualization of the term. On the other hand, considering the scholarly debates up to now, "teacher professionalism" could be interpreted as a professional work field with its sociological, ideological and educational dimensions. That aims at achieving the highest standards in teaching profession which is based upon knowledge, skill and importance. It is also associated with improving the quality and standards of teachers' works, their public images and meeting certain standards in education that related to proficiency. However, the meaning of the term and status of teaching profession is considered to be highly problematic and polarized in various spheres. At this instant, Whitty stated, it is probably best to see the different events about teacher professionalism in the twenty-first century as competing editions of teacher professionalism to a certain extent that consider any one as an indispensable for characterization of professionalism.[31]

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CASE REPORT NORTH BENGAL MEDICAL COLLEGE JOURNAL [2019], VOL., 5, No. 1 : 42-46

Pancreatic Tuberculosis: A case report

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ABSTRACT

Primary pancreatic tuberculosis is an extremely rare entity even in tuberculosis endemic areas. It usually presents with vague and nonspecific symptoms. It is often confused with pancreatic malignancy on clinical presentation as well as on imaging. In our case, a 67-year-old male presented with abdominal pain with constitutional symptoms-fever, anorexia and weight loss. Ultrasonography and computed tomography scan showed a mass in the pancreatic head. CT guided FNAC showed granulomatous inflammation with caseous necrotic material which is cytologically consistent with tuberculosis. Standard four-drug antituberculous medicines were started and the patient responded well clinically with radiological resolution of the lesion.

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INTRODUCTION

Tuberculosis is a common disease in developing countries but isolated involvement of the pancreas by tuberculosis is rare.[1] The exact prevalence of pancreatic tuberculosis can't be assessed. The 1st case of pancreatic tuberculosis was reported by Aurbach.[2] Pancreatic tuberculosis frequently poses diagnostic problems because of the vague and variable clinical features and often it mimics characteristics of pancreatic adenocarcinoma.[3] Pancreatic tuberculosis should be suspected when dealing with pancreatic mass with constitutional symptoms specially in people in developing countries. Diagnosis is usually made by radiological investigation and image guided intervention, which can prevent the need for diagnostic laparotomy.[4]

This paper presents a case of pancreatic tuberculosis in a 67 year old male patient manifesting irregular fever and constitutional symptoms.

The case

A 67 year old male presented with irregular high grade fever for 1.5 years associated with chills and rigor. The highest recorded temperature was 104^0F. He also complained of loss of appetite and significant weight loss of 8 kg in last 6 months. There were no respiratory complaints and no history of pulmonary or gastrointestinal tuberculosis in the past.

Clinical signs on physical examination were normal. Total leukocyte count was 9000/mm^3 with the following differential count: Neutrophilis 84%, Lymphocytes 12%, and Monocytes 2%. Haemoglobin: 10.8 gm/dl, ESR: 60 mm in 1st hr and CRP: 6.35 mg/dl (reference value <0.5 mg/dl).Liver function tests were found to be normal. ICT for malaria and kala-azar and tests for febrile antigens were found to be negative. Montoux test was negative (2mm). Serum CA 19-9 was 16.1 U/ml (reference value <37U/ml). Chest x-ray was normal. Ultrasound scan of the abdomen showed a small hypoechoic area near the head of pancreas. Contrast enhanced computed tomography (CECT) scan of the abdomen demonstrated heterogenous mass in the pancreatic head (Figure 1).

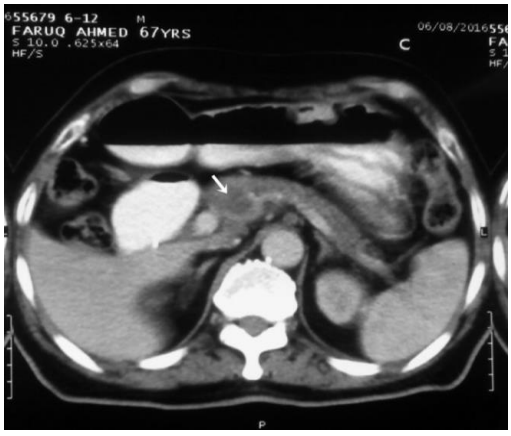

Figure 1: CECT shows mixed density mass in the head of pancreas (Arrow)

USG guided FNAC was performed, which revealed granulomatous inflammation with epithelioid cells and abundant caseous necrotic material which is cytologically consistent with tuberculosis (Figure 2).

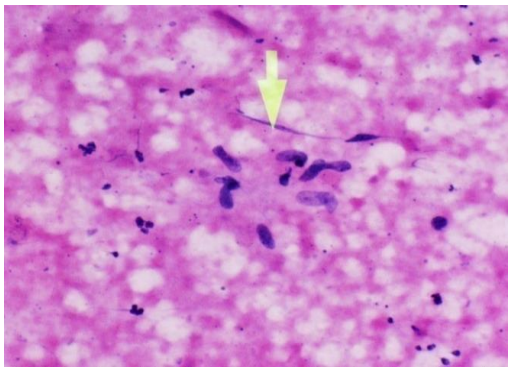

Figure 2: FNAC Pancreas epithelioid cells, caseous materials and cellular debri (H&E x400)

The patient was treated with four-drug anti-tuberculosis therapy (Rifampicin: 600 mg, INH: 300 mg, PZA: 1500 mg, Ethambutol: 1200 mg daily) for nine months. He became asymptomatic after completing two months of therapy. In the follow-up, the patient showed gradual gain in weight (8 kg in nine months), decrease in erythrocyte sedimentation rate (ESR) and repeat CECT of the abdomen performed after nine months showed radiological resolution of the lesion (Figure 3).

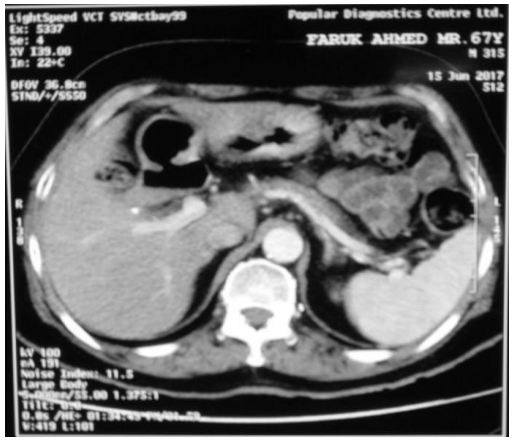

Figure 3: Repeat CECT of the abdomen performed after six months showed gradual radiological resolution of the lesion.

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

DISCUSSION

Primary pancreatic tuberculosis (PPTB) is described as an isolated involvement of pancreas by *Mycobacterium tuberculosis* in the absence of involvement of any other organ or previously identified TB.[5] The pancreas is rarely affected by tuberculosis probably because of the presence of pancreatic enzymes.[3] Fewer than hundreds cases have been reported worldwide.[6] Aurbach first reported pancreatic involvement in 4.7% of biopsies in case of miliary tuberculosis.[2] Most reports of pancreatic tuberculosis indicate a preponderance of males in the reported cases except for two reports from China and South Korea. The mean age (or median) in various published series varied from 36 to 56 years suggesting that most patients are affected in the fourth to fifth decade of life.[7] Isolated pancreatic TB is predominantly observed in the following patient types:[8]

- Patients who reside in endemic tuberculosis zones,
- Patients in areas of widespread TB dissemination such as a miliary setting and developing countries
- Patients who are immune-compromised

The possible mechanisms of involvement of pancreas are hematogenous dissemination from an occult lesion in lungs or abdomen, direct spread form the contagious lymph nodes, reactivation of dormant bacilli in an old tubercular lesion in an immune suppressive state.[4]

The common clinical features are non-specific abdominal pain, fever, anorexia and weight loss. Less common features are anemia, vomiting, obstructive jaundice, upper gastrointestinal bleeding and portal hypertension.[7-11] Rarely, diabetes mellitus may occur secondary to pancreatic tuberculosis.[12] Past history of tuberculosis has been reported in up to 44% of cases.[7] Clinical examination is usually non-contributory. Presence of abdominal lump has been reported in a variable number of patients in few reports. Presence of human immuno deficiency virus (HIV) infection has been reported in up to 50% of cases.[6,16,17] Abnormal chest radiographs have been reported in up to 50% of patients with pancreatic tuberculosis. Positive tuberculin skin test has been reported in 32–71% of patients with pancreatic tuberculosis across various series. Ultrasonography features include a diffusely enlarged pancreas which may or may not be associated with peripancreatic and mesenteric lymphadenopathy. Other associated findings are bowel wall thickening, focal hepatic or splenic lesion and ascites.[7] CT scan most commonly reveals a mass lesion but cystic lesions and multiloculated lesions have also been found to be of tubercular origin. Other findings include peripancreatic and periportal lymphadenopathy with peripheral ring enhancement.[1,6,7]

Ultrasound or CT-guided FNAC, essential to establish the diagnosis, helps evaluating samples by staining, cytology, bacteriology, culture and polymerase chain reaction assay. The microscopic features of tuberculosis are granuloma, caseation necrosis (seen in 75%-100% of cases) and presence of acid fast bacilli (identified in 20%-40% of cases). Endoscopic ultrasound (EUS) is a reliable technique for differentiating pancreatic lesion from peripheral structures. It is also preferred for tissue biopsy because of less chances of needle tract dissemination especially when the mass seems malignant.[7,10,13,14,15]

Most cases of pancreatic TB respond well to anti-tubercular drugs. Directly observed therapy with a standard multiple anti-tubercular drugs regimen including isoniazid, rifampicin, pyrazina-

mide, and ethambutol or streptomycin for 6-12 months, is usually effective. Minimally invasive procedures may be required in patients with enlarging symptomatic pancreatic mass not responding even after getting anti-tubercular drugs therapy for a reasonable period of time.[7,10,16,17]

CONCLUSION

The diagnosis of pancreatic tuberculosis is challenging, requires high index of suspicion. It should be considered in the differential diagnosis in patients with pancreatic lesions, particularly those with constitutional symptoms. USG or CT-guided FNAC emerges as an extremely important method of choice to diagnose pancreatic tuberculosis because of its low-invasiveness and reasonable specificity. The majority of patients respond well to anti-tubercular chemotherapy with a good prognosis.

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Conflict of Interest: None

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CASE REPORT NORTH BENGAL MEDICAL COLLEGE JOURNAL [2019], VOL., 5, No. 1 : 47-51

Epidermolysis bullosa simplex: A case report

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ABSTRACT

Epidermolysis bullosa (EB) is a rare inherited disorder of the skin characterized by blistering of the skin with variable severity ranging from localized to generalized involvement of the body; sometimes severely incapacitating the life of the patient. Treatment of EB is challenging and till date there is no cure. Epidermolysis bullosa simplex (EBS) is the most common and usually autosomal dominantly inherited disease, where blisters present usually at birth. Here blisters are intraepidermal, hence heal with no scar. A three years old boy of non-consanguineous marriage with family history of bullous disease presented with superficial blisters and erosions at the pressure sites was diagnosed as EBS.

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INTRODUCTION

Epidermolysis bullosa (EB) is a heterogeneous group of hereditary disorders characterized by extreme fragility of the skin and mucous membranes, which gives rise to the formation of blisters and ulcers following minor trauma. Most often affected areas of the body are sites subject to frequent pressure or friction, these conditions are also called mechanobullous disorders. The incidence of this disorder is approximately 1 in 17000 live births with an estimated 500000 cases worldwide. More than 10 genes are implicated in the etiology of EB and over 1000 mutations can be occur red de novo or be inherited in either an autosomal dominant or an autosomal recessive manner.[1] Depending on the level of tissue separation and blister formation, EB can be divided into 3 subtypes: (i) Epidermolysis bullosa simplex where separation occurs above the basement membrane; (ii) Junctional epidermolysis bullosa- where separation occurs at the level of basement membrane zone; and (iii) Dystrophic epidermolysis bullosa- where separation occurs below the level of basement membrane zone. There is also an acquired form (EB acquisita) that develops during the fourth or fifth decade of life and is caused by the production of immunoglobulin (Ig) G autoantibodies to collagen VII within the dermis.

The Case

A 3 years old boy presented to us with the complaints of blisters at the site of minor trauma since birth. The blisters were flaccid, appeared at the site of frequent friction e.g., elbow, knees, legs (Figure 1).

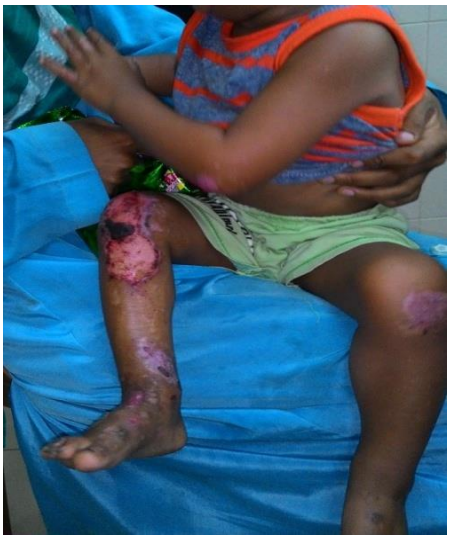

Figure 1. Denuded areas over the pressure areas of the patient

They ruptured spontaneously and healed with some pigmentary changes in the skin. The blistering of the skin increased during summer and reduced in frequency during winter.

On examination, there were multiple bilaterally symmetrical denuded areas with hemorrhagic crusts over both knees, dorsum of the foot, elbows, dorsum of hands. His oral cavity, conjunctiva, cornea, nails, scalp and genitalia were normal. Systemic examination findings were normal.

His mother's antenatal period was uneventful and he was delivered by normal vaginal delivery. There was no consanguinity of marriage of his parents. His father had similar history of blisters during his childhood, which had improved with age leaving some scars over the skin (Figure 2).

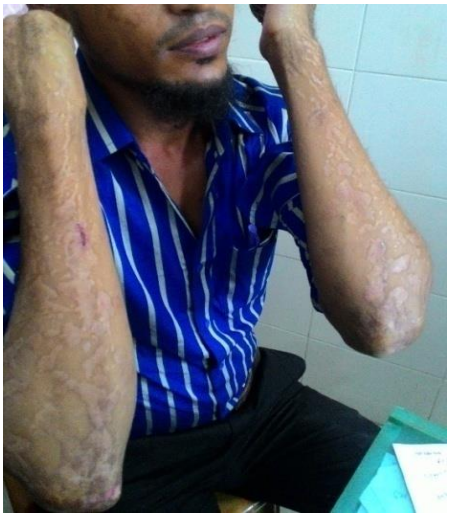

Figure 2. Scars over the extensor surfaces of both forearms of patient's Father

To exclude other bullous diseases of this age, e.g., chronic bullous disease of childhood, childhood bullous pemphigoid, a skin biopsy was taken from the lesion area for histopathology and perilesional normal skin for direct immunofl-uorescence (DIF). Histopathology revealed intra epidermal bullae with no immunoflurescence deposition in DIF – these findings coincide with EB simplex.

As there is no specific treatment of EB simplex, the parents were advised to wear the boy full sleeve shirts and trousers and soft shoes to avoid friction, use of soft toys, regular dressing of the wound areas, daily bathing and moisturizing the skin, and adequate nutritional support.

DISCUSSION

Epidermolysis bullosa can be divided into inherited and acquired forms. Inherited EB occurs due to mutation of several genes coding for structural proteins involved in constitution of hemidesmosomes of dermoepidermal junction, e.g., proteins K5/K14 in simplex type; laminin5

and α6β4 integrins in junctional type and COL7A1 in dystrophic. EB can be both autosomal dominant or autosomal recessive or de novo and bullae usually presents at birth. Acquired EB is known as epidermolysis bullosa aquicita and bullae appears in elderly age.[2]

EB simplex encompasses all subtypes of EB having blisters confined to the epidermis; Junctional EB includes all subtypes of EB in which blisters develop within the lamina lucida of the skin basement membrane zone (BMZ). Dystrophic EB includes all EB subtypes in which blistering occurs within the upper most dermis, just beneath the lamina densa of the skin BMZ.[3] In relation to age and different EB types and subtypes, there is marked variation in skin and mucous membrane lesions and multiorgan involvement. These cutaneous and extracutaneous manifestations and complications in several subtypes lead to a significant morbidity and even to premature death. Till date, no cure is still available for EB. In the absence of a specific therapy, patient management is currently centered on skin care measures, early recognition and symptomatic treatment of complications.[4]

As clinical features and routine histologic features overlap among different subtypes of EB, accurate diagnosis depends on genetic mutation mapping, electron microscopy study, or immunofluorescent mapping.[5] Unfortunately latter three are not available in our country. So we have to confirm our diagnosis by taking complete history, histology of the skin and direct immunofluorescent (DIF) study. This DIF study will help to differentiate EB from other bullous diseases of the skin e.g. chronic bullous disease of childhood. In EB there will be no deposition of immunoglobulins in DIF.

Different subtypes of EB simplex are caused by defects in genes encoding transglutaminase 5, plakophilin, desmoplakin, plakoglobin, keratin 5 and 14, plectin, exophilin 5 and bullous pemphigoid antigen 1.[5,6] Prenatal diagnosis can be done by fetal skin biopsy, fetal DNA analysis from amniotic fluid and chorionic villus cell sampling, 3 dimensional ultrasound and analysis of fetal DNA taken from a maternal blood sample.[1] The disadvantage of diagnosing EB prenatally is that nothing can be done to prevent progression of the disease. Most cases of EB simplex are inherited in an autosomal dominant pattern. Autosomal recessive EB simplex, lethal acantholytic EB simplex, plakophilin deficiency, EB simplex with muscular dystrophy, and EB simplex with pyloric atresia are transmitted in an autosomal recessive pattern.[1]

EB simplex generalized intermediate, previously known as EBS Koebner, inherited as autosomal dominant trait and the child is affected at birth or shortly thereafter, with improvement within first few months. The disease recurs as the child begins to crawl. There is seasonal variation also with worsening of condition during summer and improvement during winter.[5] Mucous membranes and nails are not involved. This is milder than other forms of EB and there is no internal organ involvement. All these findings coincide with our patient. EB simplex generalized severe, previously known as Dowling-Meara, is also inherited as autosomal dominant trait. In this subtype oral mucosa is involved, nail dystrophy, hyperkeratosis of palms and soles may occur. EB simplex localized, also known as Weber-Cockayne, has autosomal dominant inheritance, presents as recurrent bullous eruption of the hands and feet in infancy or at times later in life. There may be associated hyperhidrosis and blisters exacerbate during hot weather. In EB simplex with muscular dystrophy, there is minimal skin involvement but laryngeal involvement can be severe enough for the

requirement of a tracheostomy. Progressive muscular dystrophy usually starts any time from the first year onwards.[7]

As there is no definite cure for EB, the objective of treatment is to alleviate symptoms and provide supportive measures. A multidisciplinary team consisting of dermatologist, nutritionist, dentist, physiotherapist, nurse, psychologist, pain specialist is required for optimum management of the disease.[7] Protein and micronutrient needs are increased in EB patients due to accelerated skin turn-over, blood and protein losses through skin wounds, recurrent infections and chronic inflammation. Micronutrient deficiencies (iron, zinc, selenium, vitamins, etc.) can lead to severe complications. Insufficient fluid and fiber intake frequently causes constipation, which can induce painful defecation (anal fissures).[4] The child should be duly vaccinated as there is no contraindication to vaccination.[8]

A mild antiseptic cleanser (e.g. chlorhexidine 0.1% or polyhexanide, sodium hypochlorite 5–10 ml in 5 L of water, acetic acid ≤0.25%) should be used for extended and/or critically colonized/ infected lesions. An emollient/oil-based cleanser should be chosen for xerotic skin and hyperkeratotic or crusted lesions. Intact blisters should be lanced at their lowest point with a fresh hypodermic needle or sterilized sewing needle or scalpel blade to limit tissue damage. A soft piece of gauze can be used to gently compress the blister for complete emptying and the roof should be left on the blister as de-roofing can lead to additional pain. A soft bristle toothbrush previously soaked in hot water should be used to maintain oral hygiene.[7]

Frequent skin infections may worsen EB course. Topical agents which do not have systemic formulation (e.g. fusidic acid, mupirocin) are preferred and should be used for short period to avoid resistances. Pruritus is frequently chronic, severe and unresponsive to conventional treatments. Short courses of topical mild potency steroids, sedating antihistamines, gabapentin or pregabalin, anti-inflammatory agents (e.g. cyclosporine, thalidomide or topical tacrolimus) can be used for pruritus. Non adherent dressings are preferred for regular wound care.[4]

In EB simplex wounds heal without any scarring. Use of full sleeve dress, trouser, shoes to prevent friction induced trauma and avoidance of hard toys are advised to prevent blister formation. In junctional and dystrophic EB where wounds heal with scarring, more extensive skin care is required. Some innovative therapeutic strategies like protein therapy, gene therapy, and bone marrow transplantation are being used to correct gene mutation in severe forms of EB.[9, 10] Psychological support is vital for both parents and family members. The chance of development of skin cancer from chronic wounds is more or less absent in EB simplex but higher in junctional and dystrophic EB.

CONCLUSION

Epdermolysis bullosa simplex is one of the inherited bullous diseases of childhood. Early diagnosis and treatment of the complications can reduce patients' sufferings. Except for certain lethal variants, e.g., recessive dystrophic EB, EB simplex is milder with minimal affection of life expectancy.

Conflict of Interest: Nothing reported.

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Acknowledgments

List all sources of funding for the research with contributions of individuals.

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1. World Health Organization (WHO). WHO Recommendations: Low Birth Weight: preventing and managing the Global Epidemic. Geneva, Switzerland: WHO, 2000 (Technical Report Series no.894)

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