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TABLE OF CONTENT

Editorial Board
Intruccion to Authors

iii
v

ORIGINAL ARTICLE

IMPACT EVALUATION OF A WORKSHOP ON PONSETI TECHNIQUE IN TREATMENT OF CLUBFOOT AT ILE-IFE NIGERIA Yongu, W.T , Adegbehingbe,O.O	1
SUBCLINICAL MALARIA INFECTION AMONG UNIVERSITY OF MAIDUGURI STUDENTS: PREVALENCE AND PARASITE DENSITY Adesina O.O	6
PATTERN OF DENTAL TREATMENT IN PATIENTS ATTENDING THE DENTAL CENTRE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI NIGERIA AO Olaleye, Suleiman IK, S Solomon	12
CHEST RADIOGRAPHIC FINDINGS IN SPUTUM SMEAR POSITIVE PULMONARY TUBERCULOSIS AS SEEN IN USMANU DANFODIYO UNIVERSITY TEACHING HOSPITAL SOKOTO, NIGERIA. Saidu SA, Makusidi AM, Njoku CH	20
COITAL TRAUMA AS SEEN AT THE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI Umaru Inuwa, Babagana Bako, Abdulkarim G. Mairiga, Ado Danazumi Geidam	25
KNOWLEDGE, ATTITUDES AND PRACTICE OF PEOPLE IN MAIDUGURI, TOWARDS VOLUNTARY BLOOD DONATION Goni BW, Yusuph H, Abja UMA, Bukar AA, Bakki B, Kida IM, Talle AM, Sahabi AM.	30
PELVI-URETERIC JUNCTION OBSTRUCTION AS SEEN IN UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL: A SIX-YEAR EXPERIENCE Ibrahim A G, Hamid I, Waziri A M	39

CASE REPORT

MYOSITIS OSSIFICANS PROGRESSIVA : A CASE REPORT AND LITERATURE REVIEW Yongu,W.T , Isa ,N, Akinniyi ,O.T	44
NEONATAL FOURNIER'S GANGRENE: A CASE REPORT Kura M, Ibrahim AG, Yunusa KZ, Hamid I	49

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IMPACT EVALUATION OF A WORKSHOP ON PONSETI TECHNIQUE IN TREATMENT OF CLUBFOOT AT ILE-IFE NIGERIA

¹Yongu, W.T, ² Adegbehingbe, O.O

ABSTRACT

Background: Training of health workers in the use of Ponseti technique is one of the cardinal strategies in disseminating and sustaining this widely accepted and unique way of treating children born with clubfoot. There is scarcity of data on the impact of such a training workshop on health workers (HW).

Objectives: To assess the impact of Ponseti training workshop on the knowledge, attitude and practice of health workers. **Methodology:** A cross sectional study using a non-controlled pre and post test design was carried out on participants at the Ponseti Workshop which took place at Ile-Ife Osun State of Nigeria on 20th and 21st November 2012. All the participants that were physically present during the first and last sessions of the workshop were included in the pre and post test respectively. A questionnaire was administered to the group to assess their knowledge, attitude and practice (KAP) before the series of lectures. This was repeated the next day after they had completed their lectures and practical demonstrations to assess the impact on them. The questionnaire was Likert scale type. The results of the pre and post test was collated and analysed. For simplicity of analysis, correct answers that the participant agreed or strongly agreed with were scored 1. Any correct answer that was disagreed with or they were not sure, were scored zero.

Results: The pre test questionnaire was distributed to 46 participants but only 40 responded. The mean age was 44.5 yrs (range 29-64 yrs). The highest qualification was FWACS, FMCS (Orthopaedic surgeons) 9 (22.5%), medical doctors with only MBBS 3 (7.5%), physiotherapists 5 (12.5%), Plaster technicians 10 (25%), orthopaedic nurses 2 (0.5%), occupational therapist 1 (0.25%), O' level certificate 1 (0.25%), qualification was not indicated in 8 of the respondents. The male to female ratio was 4.6:1. Only 32 participants out of 38 who responded returned the answered questionnaires in the post test. The mean score from the pre test (PT 1) was 66.25% while the mean score for the post test (PT 2) was 70.05%. The impact of the workshop on the participant's knowledge, attitude and practice (KAP) was PT 2 minus PT1 which is 3.8%. **Conclusion:** The Ponseti workshop had a definite impact on the way the participants would be treating their patients with clubfoot henceforth. More regular workshops would be needed to sustain a cumulative impact on the health workers in this peculiar way of treating this disease condition.

Key Words: *Ponseti, clubfoot, impact, workshop.*

INTRODUCTION

Clubfoot is a multidimensional congenital musculoskeletal deformity affecting the foot or feet. It is characterized by adduction at the forefoot with associated supination, varus of the hindfoot, equinus at the ankle due to the shortened tendo achilles and cavus on the medial side of the foot¹⁻⁴. All

these deformities are correctable by Ponseti method which involves serial systematic manipulation and casting to achieve 70 degrees of abduction, well timed tenotomy, three weeks of continuous casting, continuous abduction brace for three months and subsequently night time (12 hrs) usage for up to 4 years. When this strict protocol is adhered to, the long term success rate (excellent or good) is usually up to 78%^{2,3}.

However, there are usually challenges in following the protocol because some of the health workers themselves do not fully understand the functional anatomy of the foot^{3,4}. This caused a delay from 1963 when it was first described by Professor Ignacio Ponseti to 1995 when the results of long term follow up were published before

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it started to gain wide acceptance. There are problems like the belief system of the community ascribing clubfoot to witchcraft, stigmatisation of patients and their parents as well as poor assessment when child birth is in the village where there are no attending health workers^{4,5,6}. There are also other methods of treating the condition both traditional and orthodox but the results of long term follow up are not as good as the Ponseti method⁵⁻⁸.

These barriers to Ponseti management can be overcome by educating health workers, parents and community members about the disease and its treatment, establishing clubfoot clinics and partnering with the patients so that the financial burden of the care can be shared^{6,7,8}. This is the role service clubs, churches, mosques and non-governmental relief agencies can play to assist the very poor patients in the society^{7,8,9}.

This cross sectional study was performed on health workers in Nigeria who came to attend the second Ponseti workshop in Ile Ife Osun state of Nigeria in November 2012. The first international workshop in the country took place at the same venue in 2009 and some of the participants then have become resource persons. This study was done to assess the early impact of the knowledge they acquired in this second conference.

METHODOLOGY

A cross sectional study using a non-controlled pre and post test design was carried out on participants at the Ponseti Workshop which took place at Ile-Ife Osun State of Nigeria on 20th and 21st November 2012. Ethical clearance was obtained from the organizers and consent from each participant.

All the participants that were physically present during the first and last sessions

of the workshop were included in the pre and post test respectively. A questionnaire was administered to the group to assess their knowledge, attitude and practice (KAP) before the series of lectures. This was repeated the next day after they had completed the lectures and practical demonstrations to assess the impact on them.

The questionnaire was Likert scale type. The results of the pre and post test was collated and analysed. For simplicity of analysis, correct answers that the participant agreed or strongly agreed with were scored 1. Any correct answer that was disagreed with or they were not sure, they scored zero.

RESULTS

The pre test involved 40 participants who answered and returned the questionnaire out of 46 who received it. The mean age was 44.5 yrs (range 29-64 yrs). The highest qualification was FWACS, FMCS (orthopaedic surgeons) 9 (22.5%), medical doctors with only MBBS 3 (7.5%), physiotherapists 5 (12.5%), plaster technicians 10 (25%), orthopaedic nurses 2 (0.5%), occupational therapist 1 (0.25%), O'level certificate 1 (0.25%), qualification was not indicated in 8. The male to female ratio was 4.6:1.

Only 32 participants answered the questions and returned the questionnaire out of 38 who received it in the post test.

The mean score from the pre test (PT 1) was 66.25% while the mean score for the post test (PT 2) was 70.05%. The impact of the workshop on the participant's knowledge, attitude and practice (KAP) was PT2 minus PT1 which is 3.8%.

DISCUSSION

Clubfoot is a complex musculoskeletal deformity that presents at birth and results in complete inward turning of the foot. It can be idiopathic or occur as part of a syndrome in association with other disorders, such

as spina bifida and arthrogryposis. It is the most common musculoskeletal congenital birth defect and has a worldwide incidence of 1.6-1.8/1000 live births^{7,8}. In the People's Republic of China, where the birth rate is more than 18.2 million births per year, it is estimated that over 18,000 children are born each year with clubfoot. In Nigeria where the birth rate is 39.23 births/1000 population (2012 estimation) the estimated children born with it would even be relatively higher. If left untreated, neglected club-feet result in physical, social, psychological, and financial burdens to individuals and their families^{8,9,10}.

The Ponseti method for correcting clubfoot is a safe, effective, and a minimally invasive treatment that is recently gaining acceptance. Several seminars and workshops have been organized all over the world to disseminate information on the technique^{9,10,11}. Several methods have also been used to study the effect of the knowledge acquired from these conferences on the way these patients are treated.

Recently the Ponseti technique has been implemented in Latin America. A study was conducted to evaluate the initial impact and unique barriers to the diffusion of the Ponseti method throughout this region. Structured interviews were conducted with 30 physicians practicing the Ponseti method in three socioeconomically diverse countries: Chile, Peru and Guatemala. Since learning the Ponseti method, these physicians treated approximately 1,740 clubfoot patients, with an estimated 1,705 (98%) patients treated using the Ponseti method, and 35 (2%) patients treated using surgical techniques. The barriers were classified into the following themes: physician education, health care system of the country, culture and beliefs of patients, physical distance and transport, financial barriers for patients, and parental compliance with the method. The results yielded several common barriers throughout Latin America including lack of physician education, physical

distance to the treatment centers, and financial barriers for patients^{10, 11, 12}.

They concluded that information from this study can be used to inform, implement and evaluate specific strategies to improve the diffusion of the Ponseti method for treating clubfoot throughout Latin America. In our study, there was an overall improvement in the knowledge of the participants on clubfoot and the Ponseti mode of treatment from 66.25% to 70.05% after the workshop. The impact could even be higher because some of the participants in the pre-test held onto the questionnaires longer than required and therefore had their answers influenced by the lectures before submission for analysis. This gave rise to the relatively high (PT 1) value of 66.25%. There was also a heterogeneous mixture of the participants with educational qualification ranging from O'level certificate to fellowships in orthopaedics, this made complete understanding of some of the medical terminologies challenging for those without thorough formal training in anatomy. This further buttresses the fact that more workshops need to be organized to improve health workers education on this subject matter.

Another study was also conducted to evaluate the short-term results of the non-surgical Ponseti method training programs run in Ho Chinh Minh City, Vietnam. A questionnaire was developed and distributed to the 57 trainees who had completed one of the 3-day training courses. Of the 57 questionnaires distributed, 36 (63%) were completed and returned for evaluation. Most responders were continuing to use the Ponseti method for management of clubfoot. On average, each trainee had treated 16 babies with clubfoot, most of who were less than 12 months of age, within 2 years of the initial training course and were achieving good clinical correction. The major problems identified were the inability to perform an Achilles tenotomy, lack of availability of the

Treatment of Clubfoot

foot abduction splint, and parent compliance. The course materials were being used for reference and for dissemination of the Ponseti method to other clinical peers^{11,12}.

They concluded that evaluation of the Ponseti method training program for management of clubfoot in Vietnam revealed continued use of the technique at 12-24 months post-training⁷. A longer term and more objective

assessment of the babies/children treated and of the associated gait function and foot comfort would be beneficial⁵.

We agree with the authors of both studies that proper documentation and evaluation of the Ponseti technique at each club foot clinic and publication of same will go a long way in objectively convincing those who are still doubtful of the results of this mode of treatment.

ACKNOWLEDGEMENT

We wish to acknowledge the efforts of all the resource persons and the staff and leadership of Obafemi Awolowo University Teaching Hospital in ensuring that we had memorable Ponseti Workshop.

The authors declare no conflict of interest.

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SUBCLINICAL MALARIA INFECTION AMONG UNIVERSITY OF MAIDUGURI STUDENTS: PREVALENCE AND PARASITE DENSITY

Adesina O.O

ABSTRACT

Background: Despite several interventions, malaria continues to cause significant morbidity and mortality worldwide. **Objectives:** To determine malaria parasitaemia among apparently healthy university students. **Methodology:** The study was conducted from September 2009 to March 2010 in University of Maiduguri, Borno State. A total of 500 students randomly selected from the residential hostel (public and private hostel) at the university campus were included into the study. The students were both in private and public hostel within the campus. All selected students were undergraduates. Subjects included in the study were those who had not taken malaria medication for at least 3 weeks. Each subject volunteered and gave informed consent through the use of structured questionnaire. **Results:** The age range was 17-28 years. The overall prevalence of malaria parasitaemia was 17.4% (87/500) and was similar among students resident in both public (16.8%, 67/400) and private hostel (20.0%, 20/100) ($p = 0.58$). However, the prevalence was significantly higher in age group 17 – 19 years resident in public hostels (43.3%, 26/60) than those resident in private hostels (25.0%, 10/40) ($p = 0.007$). **Conclusion:** Prophylaxis for malaria in such settings would be an efficient means of preventing symptomatic malaria.

Key words: Subclinical, Malaria, parasite density, prevalence, students.

INTRODUCTION

Malaria is the most common parasitic infection in Africa and is the disease of tropics¹. Over 40% of the world lives in malaria endemic area and it is estimated that 300-500 million cases and 1.5-2.7 million deaths occur each year². About 95-99% of the adult population carry the parasite with less than 30% of this number coming down with illness¹. Malaria transmission is not homogeneous through an endemic area but spotty, and depends on two primary factors: location of mosquito breeding sites and clustering of human habitations³. Socioeconomic factors such as education, income, housing patterns, social groups, water storage and treatment seeking behavior play an important role in malaria transmission^{4,5}. Subclinical Plasmodium appears to be common comprising up to 30%

of parasitaemic individuals studied by active surveillance⁶. Asymptomatic parasitaemia provides reservoir for transmission and may be a precursor to symptomatic diseases⁷. Asymptomatic parasitaemia, the presence of malaria parasites in the blood in the absence of symptoms is prevalent in highly endemic areas of Africa, reaching over 90% in children with only a small percentage of individuals ever exhibiting clinical symptoms⁶. Available evidence indicates that urbanization is having a significant impact on malaria epidemiology⁸. Formal urban development can typically reduce anopheles mosquito vector densities, but the informal peri-urban settlement found at the edge of many urban centers in sub-Saharan Africa create conditions favourable to anopheline vector breeding^{9,10}. During the initial stages of their development, this sub-urban slum areas are frequently nothing more than expanded rural areas with mosquito breeding sites essentially unchanged^{9,10}. The control of falciparum malaria is becoming increasingly challenging in many endemic area of the world including Nigeria not only because *P. falciparum* has developed resistance to commonly used antimalaria drugs but due to individual and household drug use patterns^{11,12}. The commonest complaint of students for

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absenteeism has always been malaria as high as 28%¹³. It was also reported that Nigeria School children miss an estimated 3-12 school days per year which is 2-6% of school year¹⁴. Although government has extended their good gestures as regards campaign, eradication and using malaria control programme for pregnant women and children of pre-school age¹⁵ this has not extended to our higher institution of learning. The use of both free chemotherapy and insecticide treated nets have not been extended to this community which represents a considerable size of the Nigeria youths. Despite several work done in Maiduguri on malaria, few published reports are available from our tertiary institution.

MATERIAL AND METHODS

The study was conducted from September 2009 to March 2010 in University of Maiduguri, Borno State. The University is the first Federal University representing the North- Eastern part of Nigeria¹⁶. A total of 500 students randomly selected from the residential hostel (public and private hostel) at the university campus were included into the study. The students were both in private and public hostel within the campus. All selected students belong to different ethnic groups and were all undergraduates. The subjects recruited into the study include ages 17-28 years. Subjects included in the study were those who had not taken malaria medication for at least 3 weeks. Each subject volunteered and gave informed consent through the use of structured questionnaire.

Thin and thick films were prepared by pricking the finger aseptically with lancet. Two drops of blood were placed on the 76mm x 25mm microscope slide and thick smear made. The smears were air dried and stained with 10% Giemsa stain solution. It was washed and viewed under the microscope using oil immersion magnification. Thin smears were made, fixed in methanol before staining in the same concentration of Giemsa stain. A

positive and negative smear was included with each new batch of working Giemsa stain. The stained smears were first examined at low magnification (10× and 40×) objectives lens to detect large parasites such as microfilaria and also examined using 100x oil immersion. The parasite densities obtained were reported as a ratio of parasite against WBCs from thick smears assuming the leukocyte count of 8000 cells/μl. For positive smears, parasites were counted against 500 WBCs according to Greenwood and Armstrong¹⁷.

The parasite densities were calculated as follows:

$$\frac{\text{Number of parasite}}{\text{Number of WBC}} \times 8000$$

RESULTS

Of the 500 subjects enrolled in the study, 400 (80.0%) were from public hostel while 100 (20.0%) were from private hostel (Table 1). The mean age was 20.5 ± 4.1 years with age group 20 – 22 years contributing the highest proportion of 52.0% (260/500). Table 2 presents the prevalence of malaria parasitaemia among the enrolled students. The overall prevalence of malaria parasitaemia was 17.4% (87/500) and was similar among students resident in both public (16.8%, 67/400) and private hostel (20.0%, 20/100) ($p = 0.58$). However, the prevalence was significantly higher in age group 17 – 19 years resident in public hostels (43.3%, 26/60) than those resident in private hostels (25.0%, 10/40) ($p = 0.007$). Of the 87 students with peripheral malaria parasitaemia, 57 (65.5%) had parasite density below 1000 asexual parasites (Table 3) indicating relatively low parasite density among the enrolled students. All the 87 subjects with malaria parasitaemia showed no obvious symptoms indicative of malaria.

Table 1. Age distribution of the enrolled Subjects

Age group (years)	Total enrolment (n=500)	Public Hostel enrolment (n=400)	Private hostel enrolment(n=100)
17-19	100	60	40
20-22	260	230	30
23-25	100	80	20
26-28	40	30	10

Table 2. Prevalence of malaria parasitaemia

Age group (years)	Public hostel (%)	Private hostel (%)	P values
17-19	26/60 (43.3)	10/40 (25.0)	0.007
20-22	20/230 (8.7)	5/30 (16.7)	0.09
23-25	16/80 (20.0)	3/20 (15.0)	0.35
26-28	5/30 (16.7)	2/10 (20.0)	0.58
Total	67/400 (16.8)	20/100 (20.0)	0.58

Table 3: Parasite density

Parasitaemia (parasites/ μ l)	Public (%)	Private (%)	Total	p-value
1000	42 (62.7)	15 (75.0)	57	0.067
1000-5000	21 (31.3)	4 (20.0)	25	0.074
>5000	4 (5.8)	1 (5.0)	5	0.756

DISCUSSION

Subclinical malaria parasitaemia is the presence of malaria parasites in blood in the absence of symptoms¹⁶. Morbidity and mortality due to malaria have been increasing due to deterioration in health system, insecticide resistance, periodic changes in weather pattern, human migration and population displacement.

From this study, the prevalence rate of subclinical malaria is 17.4%. The overall prevalence of 17.4% is similar to 17% previously reported in children¹⁸. Although, Ntoumi, et al¹⁹, found that asymptotism was age dependent and that age increase was associated with decrease parasite load and complexity of infection.

The prevalence rate obtained from this study during rainy season is lower when compared with similar work done during rainy season by Fernando et al in Senegal²⁰ with prevalence rate of 77% and 83.3% in a similar work conducted by Omolade et al²¹ and Annon, 2003²² in southern part of Nigeria. The result obtained reflected longer rainy season in their region as compared to our study center. The study was carried out in the rainy season [May-June] when there are more breeding sites of mosquitoes and these could lead to high peak transmission. This no doubt had contributed to the high prevalence of malaria (83.3%) among asymptomatic students in their study. In Nigeria, the epidemiology of malaria is relatively uniform throughout the year, but sometimes high at the rainy season as reported

earlier^{22,23}. The transmission of this parasite in our study center could be influenced by socio-economic and cultural factors when considering hostel location and its structure with mixed joint family system which play a vital role in influencing susceptibility to infection carrier. From our study as supported by Carter et al,²⁴ that malaria transmission is not homogenous through an endemic area but spotty and depends on two primary factors: location of the breeding sites and clustering of human habitations where people serving as reservoirs of parasites for mosquitoes live.³. From our study sites, there is poor or inadequate drainage system, no kitchen, overpopulation in both hostel with ratio 6 to 8 student per public and private hostel respectively thus making use of mosquito net as preventive measure is cumbersome; an observation also made by Onwujekwe and others about malaria even among students²⁵. Thus vector control is an intervention measure that can be used to limit the spread of malaria in a community and should therefore be considered as an adjunct to chemotherapy²⁴. Also, mixed joint family system in the community studied representing six North Eastern geopolitical states can influence susceptibility to infection due to variation in adaptability to socio economic factors like low economic status,¹² poor spacing, poor drainage system^{6,7} which encourage breeding of the various stages of

mosquitoes. There was no significant difference in the overall subclinical malaria parasitaemia in both hostels. This finding is attributed to similar socioeconomic conditions. Similarly there is no significant difference in age distribution except in subject enrolled within age 17-19 which shows that age prevalence rate is higher in public hostel compared to private hostel among students of that age limit. Although, Ntoumi et al¹⁹, in their findings reported an association of age with parasite load; they further argued that, asymptotism was age dependent and that age increase was associated with decrease parasite load and complexity of infection. They opined that they could have been exposed to the environment for a longer time and better immuned. There is no significant difference in distribution of parasite density in malaria positive subjects in our study.

In conclusion, there is a high prevalence of subclinical malaria in this locality as reflected by the high malaria parasitaemia among university students. This could impact negatively on the health of this population.

Improving hygienic conditions and periodic insecticides spray in both hostels can go a long way in reducing the prevalence of subclinical malaria and indirectly symptomatic malaria.

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Subclinical malaria

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PATTERN OF DENTAL TREATMENT IN PATIENTS ATTENDING THE DENTAL CENTRE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI NIGERIA

AO Olaleye, Suleiman IK, S Solomon

ABSTRACT

Background: This is a retrospective study of the pattern of dental treatment given in a Teaching Hospital in North Eastern region of Nigeria within a period of three years coinciding with the establishment of the Dental school culminating in the departmentalization of the Dental Clinic into different specialities. **Objectives:** To document the pattern of dental treatments. **Materials and Method:** This is a retrospective study of dental records of patients attending the dental clinic of a Teaching Hospital. Some criteria were set to determine regular attendees and these were recalled for clinical examination. **Result:** More males (52.6%) sought treatment than females (47.4%), while surgical related procedures (55.3%) were more frequently carried out than restorative (34.5%) and periodontal related procedure (9.2%). Females had more restorative treatment (62.3%) than males (37.7%) periodontal related procedures was 9.2% of all treatment given with male preponderance (61.8%). Caries was the major cause of all treatment given (64.4%) while periodontal related causes was 17.3%. **Conclusion:** Number of males seeking dental treatment was more than females and so was the treatment given; however, more females tend to seek for restorative care than their male counterparts. Less females underwent surgical procedures as they may prefer restorative procedures than males. More extractions were carried out so there is the need for government's intervention in oral health policy of the state and Nigeria.

Key Words: *Pattern, dental treatment, restorative, dental clinic.*

INTRODUCTION

Good oral health has been defined as a condition of freedom from caries, periodontal diseases and disorders that affect the oral cavity¹ and the presence of these conditions which are most often not self limiting may affect the person's well being and overall quality of life². Several studies have been carried out on tooth loss in Nigeria but general pattern of treatment given in relation to some demographic factors are scarce.

There is a great effect of oral diseases on communities which may lead to pain and suffering, impairment of function and reduced quality of life that results from it. Oral health

programmes have not been integrated into national and community programmes in most developing countries especially in West Africa^{3,4} and this is not unconnected with the high prevalence of serious life threatening conditions and diverse communicable diseases^{5,6}.

The pattern of oral diseases in every community require that epidemiological data collection will aid the planning of health care systems and in understanding the nature of oral health diseases. It is essential that oral health services and care be properly planned so as to provide effective service and also to have a system of evaluation of these services.

Oral health policy and survey on oral health diseases are scarce in developing nations especially more in West African countries and most of the populations are subjected to an alarming increase in new and untreated dental caries which most of the time result in severe pain and spread of infections⁷⁻¹⁰.

In a developing economy like Nigeria, oral

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health data collection has been difficult, laborious and far in between thus making oral health care planning for the population very difficult.

Government responses to these challenges are inadequate as regards to the availability, accessibility and affordability of these services especially in semi-urban and rural communities, although these services are somewhat better in urban settings.

The aim of this study is therefore to find out the pattern of treatment sought and given to enable the formulation of policy on availability and accessibility of dental services and utilization

MATERIALS AND METHODS

This study is a retrospective one that depends on the record produced by the various practitioners and the decision reached by them formed the basis of treatment actually given to the patients.

This study dealt only with records of adult patients thus all patients below the age of 18 years were excluded from this study because the Nigerian constitution stipulated that this is the age at which a Nigerian can vote and be voted for. It is also assumed that the educational age is that when a child starts primary school at age 6, spends six years in the primary school and 6 years at the college level before graduation making a total of 18 years.

This study consisted of 645 patients seen over a period of three years by different operators in a Teaching Hospital in North East of Nigeria. The dental clinic was evolving at this time to a dental teaching hospital. At this time there was no organized departmental method of seeing patients and the record system was not properly codified and established. The records of patients seen were the materials used in this case to collate the data on the treatment given

to the patients and the treatment plan

The treatment given was coded to determine the frequency and type of treatment given.

The treatment given to the patients were listed as follows:

- Extractions
- Cleft repair
- Surgical procedures including biopsies
- Disimpaction of third molars
- Immobilization of jaw fractures
- Trismus correction

All of the above were categorized as oral surgery procedures while the under listed procedures were classified as restorative procedures which include the following:

- Amalgam filling
- Root canal treatment
- Composite Restoration
- Dentures (Removable partial Dentures)
- Bridge work (Fixed partial Dentures)
- Re-cementation of dislodged crowns
- Porcelain fused to metal crowns

Periodontal related procedures include the following

- Scaling and polishing (Dental prophylaxis)
- Dentinal hypersensitivity
- Curretage
- Halitosis

Other procedures carried out were orthodontic cases, complications arising from extractions and aphthous ulcer and all of these were grouped together under "other procedures".

RESULT

This survey consisted of 350 males and 295 females accounting for 60.3% and 39.7% respectively while the age range was between 18 years and 66 years. Twelve cases of aphthous ulcer were recorded with male preponderance 66.7% while female accounted for 33.3%. All the complications associated with tooth extraction (Dry socket) were found in females.

There were 1942 courses of treatment given, with males accounting for 52.6% of all courses of treatment while females accounted for 47.4%. Surgical procedures formed 55.3% of all the courses of treatment carried out and males accounted for 60.6% of all the surgical procedures. Periodontal procedures formed 9.2%, aphthous ulcer was 0.6% while complications arising from extraction was 0.3%. For restorative procedures males accounted for 62%. All the complications arising from extraction occurred in females in this study while only one orthodontic case was seen (Table 1).

Analysis of all surgical procedures indicated that tooth extraction was far the commonest procedure 82.2%. Minor surgeries carried out included biopsies and suturing of lacerations 7.0%, cleft repairs under local anaesthesia 4.9%, dis-impaction of third molar 3.5%, Jaw fracture immobilization 2.1% and relief of trismus 0.3%.

For periodontal procedures males received 61.8% while females had 38.2% of all periodontal procedures. The other procedures were categorized as "Others" since they formed a small proportion of the total procedures carried out.

More courses of extraction were done in males (62.3%) than in females (37.7%). Minor surgeries and 3rd molar dis-impaction

were almost the same in males and females but females had more cleft repairs than males, while jaw fractures were more common in males (95.6%) than females (4.4%). Incidence of trismus even though very low was twice as commonly seen in females than males.

Of all the surgical procedures performed in males 84.6% was extraction while it formed 78.5% of surgical procedure done in females (Table 2).

For restorative procedures, males received 37.7% of all procedures while females had 62.3%. Amalgam filling made up 59% of all restorative procedures, root canal treatment was 20.6%, composite restoration 7.9%, removable of partial denture was 3.9%, fixed partial denture 2.8% while porcelain fused with metal was 5.7%. For every one of those restorative procedures, females accounted for more percentage than males (table 3).

For periodontal related procedures, scaling and polishing formed the bulk of treatment carried out (87%) and more males had more courses of treatment in all related periodontal procedures (61.8%) than females (38.2%). Males also had more scaling and polishing (62.5%) than their female counterparts (37.5%) as detailed in Table 4.

TABLE 1 TOTAL NUMBER OF COURSES OF TREATMENT BY GENDER

	M	F	TOTAL	%
SURGICAL PROCEDURES	651	424	1075	55.3
RESTORATIVE PROCEDURES	253	418	671	34.5
PERIODONTAL PROCEDURES	110	68	178	9.2
ORTHODONTIC PROCEDURES	0	01	01	0.1
ORAL MEDICINE PROCEDURES	08	04	12	0.6
ALVEOLAR OSTEITIS	05	0	05	0.3
TOTAL	1022	920	1942	100

Pattern of Dental Treatment

TABLE II: ORAL SURGERY PROCEDURES

	M	F	TOTAL
EXTRACTIONS	551	333	884
SURGICAL PROCEDURES	39	36	75
CLEFT REPAIR	21	32	53
THIRD MOLAR DISIMPACTION	18	20	38
JAW FRACTURES	21	01	22
TRISMUS	01	02	03
	651	424	1075

TABLE III: RESTORATIVE PROCEDURES

	M	F	TOTAL
AMALGAM FILLINGS	168	228	396
ROOT CANAL TREATMENT	58	90	138
COMPOSITE RESTORATIONS	15	38	53
REMOVABLE PARTIAL DENTURES	08	18	26
FIXED PARTIAL DENTURES	01	04	05
RE-CEMENTATION OF AJC	01	0	01
CROWNS	0	10	10
	281	458	739

TABLE IV: PERIODONTAL RELATED PROCEDURES

	M	F	TOTAL
SCALING AND POLISHING	97	58	155
CURETTAGE	11	08	19
DENTAL HYPERSENSITIVITY	01	02	03
HALITOSIS	01	0	01
	110	68	178

DISCUSSION

This study being a pioneer study is about the dental treatment procedures carried out in a Teaching Hospital in Maiduguri, a town in North Eastern part of Nigeria. In several developing economies especially in west African states, there has been lack of planning as regards oral health and diseases so much so that oral health care programmes and policy

are lacking^{3,4}. Dental conditions when not treated usually leads to discomfort and pain which usually affects the oral health well being and general health and the quality of life of the patient. In addition there are some factors that may militate against the patient seeking for dental treatment. When patients start to feel they have a need for dental treatment it usually gives rise to demand for health care and therefore it becomes a duty for the dentist

to diagnose and prepare a treatment plan to take care of the conditions complained of in developing countries. Some studies may be prone to information bias because the dental care provider involved were aware that they were participating in a study, but this is not applicable to this study.

This study revealed that surgical related procedures formed the bulk of treatment given to patients attending the hospital. This may be related to the fact that the dental centre of the hospital started as a dental unit with a specialist in oral and maxillofacial surgery as the foundation staff and also doubles as the training centre for resident doctors in oral and maxillofacial centre. The period of this study coincided with the entrance of the first set of dental students in the clinical school

Extraction formed the bulk of surgical related procedures (82.2%) and it also accounted for 45.5% of all treatments given. In developed economies where most of the procedures carried out were attempts at re-restoring fillings but in most developing economies, extraction forms the major treatment given to patients. This is because most patients tend to neglect their oral health in relation to their medical health and to worsen the scenario the services provided at most dental clinics gives precedence to curative, rehabilitative and emergency care over preventive measures. Caries was the reason cited for extraction (77.7%) while periodontal disease was the cause of extraction in 18.8%. Although unlike the other studies carried where women and children are more affected than males^{10,11,12} more males were seen and treated in this study

In a developing economy like Nigeria, dental patients only visit the dental clinic when there is severe pain and treatment is urgently needed; a culture of regular or routine check up is absent^{11,13} and the patients usually present themselves at late stages of dental disease.¹⁴⁻¹⁷

It is even more pertinent to note that in Maiduguri Borno State where this study was carried out, there are only two government

dental centres located in the state capital while the 17 remaining local governments lack any dental facility. Dental specialists are found only in the teaching hospital while other dental facility which is a state government owned has only 5 dentists and all of these serve a population of about 3 million people. All these facts reflect the difficulty and challenges posed to accessibility, affordability and availability of oral health care services and because of these most visits to the dental clinic was undertaken for symptomatic reasons.

It is easier, cheaper and faster, less time consuming for patients to have extraction done than seek for alternative restorative treatment. The national Health insurance Scheme (NHIS) which though is presently limited to federal government workers does not cover most dental procedures and was not even existent at the time of this study.

Males are more prone to jaw fractures in this study and this may be due to the preponderance of motor bikes as a means of commercial transportation in Maiduguri metropolis. Conversely cleft repairs are more common in females and this may be attributed to females caring more about their appearance than their male counterparts.

Caries was the reason given for all the amalgam restorations in this study and this forms 59% of all restorative procedures, 92% for root canal treatment procedures, 53% of all composite restoration, thus in total it formed 82% of all restorative procedures. In totality, caries accounted for 64.4% of all procedures carried out in this study. In contrast a study¹⁸ showed that 30% of those demanding treatment were due to decayed teeth whilst 35%, 27% and 17% of those seeking dental treatment needed surgical, restorative and periodontal care whereas this study showed that 55.3%, 34.6% and 9.2% of treatment given were for surgical, restorative and periodontal care respectively. There is a shift to female when restorative care is involved as more courses of treatment were carried out for amalgam fillings, root canal treatment, composite restorations, removable

or fixed partial denture. Despite this the majority of courses of treatment were surgical related and this may be due to relative cost of restorative care making patients opt for the cheaper surgical alternatives

Considering the cause of treatment both for surgical and restorative related procedures, caries accounted for 64.4% of all treatment carried out which is comparable to the study conducted in Burkinafaso¹⁷ while periodontal disease accounted for 18.2% of extractions done. In the same study, women and younger age group were found to be influenced more by the cost of dental care while some studies noted that the utilization of dental services was found to be higher in females compared to males which are in agreement with the findings in some studies.¹⁹⁻²²

The case of one dental clinic to serve a population of over 4 million people with oral health care seekers travelling over 600Km to seek for treatment is grossly inadequate. In some other studies conducted in rural population of India, it was discovered that unmet treatment need of the population is very high and the services present are inadequate in most parts of the country.^{23,24}

There should be introduction of out of town or outreach programs that will take oral health programs and care to the community periodically which can also serve as referral points to specialized centres in the metropolis. The accessibility and availability aims of general well being are defeated in this scenario due to the challenges faced by oral health seekers. All these will allow or breed "quackery" if a patient would need to travel for 3-5 hours to get to where he or she could

be treated.

It may be inferred that even though more males were seen in this study more females had restorative care than male while caries still form the largest proportion of treatment given. For amalgam restoration the male to female ratio is 7:5, for RCT and composite restoration 1:2 thus affirming that females tend to have their teeth restored rather than removing it. It is also in agreement with extraction as less female patients removed their teeth than males therefore it can be concluded that any treatment that would involve more time and or probably more money may discourage men from taking that course of treatment. For prosthetic care more treatment course were given to women than men (2:1), for jacket crowns the ratio was more 7:2 and fixed prosthetics 3:1

In conclusion, the treatment prescribed and performed by the dentist in this study were more of surgical related therefore there is the need to move away from surgery to a more restorative care. Oral health care provision in the state needs to be revisited revised and in most cases included in the general health policy. Local government councils should as a matter of urgency start an oral health care services provision at all the primary health centres. Well trained and supervised health care personnel should have oral health care programs included in their training. Alternative approach is to devise a special oral health programs targeted at the rural communities for specially trained oral health care personnel to handle simple and uncomplicated oral health needs. Females tend to care more about their appearance than men so are ready to keep their appointment for restorative care.

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CHEST RADIOGRAPHIC FINDINGS IN SPUTUM SMEAR POSITIVE PULMONARY TUBERCULOSIS AS SEEN IN USMANU DANFODIYO UNIVERSITY TEACHING HOSPITAL SOKOTO, NIGERIA.

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ABSTRACT

Background: Pulmonary tuberculosis has become a major public health concern particularly with the global HIV/AIDS epidemic. Recent report has shown that the disease affects mainly young adults in their most productive age with attendant socio-economic impact on the nation. Although sputum bacteriology is the gold standard for the diagnosis of PTB, chest radiography is a valuable tool for its investigation and management. **Objective:** To determine pattern of chest radiographic findings in sputum positive pulmonary tuberculosis. **Method:** A two-year prospective study was undertaken between January, 2010 and December, 2011 among treatment naïve sputum smear positive PTB patients who had chest radiograph at diagnosis. The socio-demographic and clinical features were recorded. The chest radiographs were reported by radiologist and the data was analysed using SPSS version 11. **Results:** One hundred and six consecutive PTB patients who had chest radiograph were studied. Their age range was 20 – 75 years with mean (\pm SD) of 37.1 (\pm 10.3) years. There were 78 males (73.6%) with male to female ratio of 1.4:1. Significant proportions (54%) were of low socio-economic status and 52% were HIV positive. The commonest presenting radiological features were patchy/streaky opacities and cavitary lesions. Eight had pleural effusion while lung collapse was found in 4 patients. Bilateral involvement of the lung fields was commoner (68.3%) and upper lobe disease was the commonest finding. **Conclusion:** Patchy/streaky opacities and cavitary lesions were the commonest radiographic features in our study. Bilateral and upper lobe affectations were predominant. Chest radiograph remains a useful tool in the diagnosis and subsequent management of PTB.

Key words: *Chest radiograph, Sputum, PTB.*

INTRODUCTION

Tuberculosis (TB) has become a major health concern especially with the global HIV/ AIDS epidemic. More than 9 million people are diagnosed with active tuberculosis each year, and 1.6 million die of the disease¹. Recent projections indicate that the incidence of tuberculosis can be expected to increase to 10.2 million annually with 3.5 million deaths¹.

The tuberculosis burden has been found to be largest in sub-Saharan Africa and South East Asia ^{2,3}. Seventy-five percent of TB cases

in these countries are in the economically productive age groups. Majority of adult tuberculosis patients with or without HIV co –infection develop pulmonary disease³. Although sputum bacteriological study is the gold standard for the diagnosis of pulmonary tuberculosis⁴ it hardly gives insight into the severity and extent of the disease. The combination of clinical assessment and radiological finding which give insight into disease severity will significantly influence the course of management and follow up. There are few studies on the radiological pattern of pulmonary tuberculosis among Nigerians⁵⁻⁷ and none has been carried out in the Sahelian Belt of North Western Nigeria to the best of our knowledge. It is therefore expected that this work would serve as pioneer study in this region while forming a basis for comparison with other documented studies.

MATERIALS & METHODS

Usmanu Danfodiyo University Teaching Hospital, (UDUTH) Sokoto serves as the

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tertiary referral centre for Sokoto, Kebbi, Zamfara, Niger and Katsina States of Nigeria. A two year prospective study was undertaken between January 2010 and December 2011, among treatment naive sputum smear positive PTB patients, who had chest radiographs at the time of diagnosis.

Patients that presented to the medical outpatient department and/or admitted to the medical ward during the above mentioned period were enrolled for the study if they had cough, with expectoration for at least 2 weeks with or without haemoptysis, chest pain, fever and weight loss and were subsequently bacteriologically confirmed to have PTB.

The consent of the patients were obtained and their socio-demographic data, presenting symptoms and clinical examination findings were documented at presentation.

Ethical clearance was obtained from the Hospital Ethical Committee.

RESULTS

One hundred and six consecutive positive smear PTB patients who had their chest radiographs done at our centre were studied. The age range of the patients was 20-75 years with a mean of 37.1 ± 10.3 . There were 78 males (73.6%) and 28 females. Significant proportions (54%) of the patients were of low socioeconomic status. Fifty five of the cases (52%) were HIV positive. Three of the HIV negative patients had diabetes mellitus.

All the patients with positive history of contact with individuals with chronic cough in our study were found to be HIV negative. Other clinical features found are haemoptysis and diarrhoea.

The commonest radiographic finding was patchy /streaky opacities in 58 patients, followed by cavitary lesion in 46 patients while reticulonodular opacities and pneumonic consolidation were found in 19 patients each (Figure 1). The distribution of the radiological findings was such that bilateral affection of the lung fields was commonest with 68.3%,

followed by unilateral right sided involvement in 17.8%. About seventy eight percent of the patients who had lesion showed upper lobe affection, while 8(72.7%) of the 11 patients that had pleural effusion showed the effusion as the only radiological feature. Five of our patients had normal radiographs. There were 4 cases of lung collapse of which 3 (75%) were on the right and one on the left. There was also one case of destroyed lung syndrome on the left side.

DISCUSSION

Majority of PTB patients in our study were young adults in their most productive age. This agrees with the finding from Ilorin, Nigeria⁸ and supports the global epidemiological pattern described for developing countries; where more of the infected people are below 50 years of age. This contrasts with what obtains in the developed countries where there is higher prevalence of the disease among those aged 50 years and above. The contributory factors responsible for the disparity include improvements in TB control and treatment programmes.

Majority of our patients were males (73.6%) which are similar to the finding in previous reports^{9,10}. However, Erinle⁵ in his study in Ilorin, Nigeria reported a female preponderance presumably because his study population consisted of both adults and children. Fifty two percent of our patients were HIV positive. This may not be unconnected with the association of the resurgence of tuberculosis with the HIV pandemic in sub-Saharan Africa^{3, 11, 12}. This unholy alliance between HIV and tuberculosis is as a result of suppression of the patients' immunity leading to the increase in the incidence of reactivation of latent tuberculosis and progression of recent infection. Another cause of immunosuppression is diabetes mellitus, which we found as co-morbidity in three of our HIV negative patients.

The commonest presenting symptoms were fever and productive cough followed closely

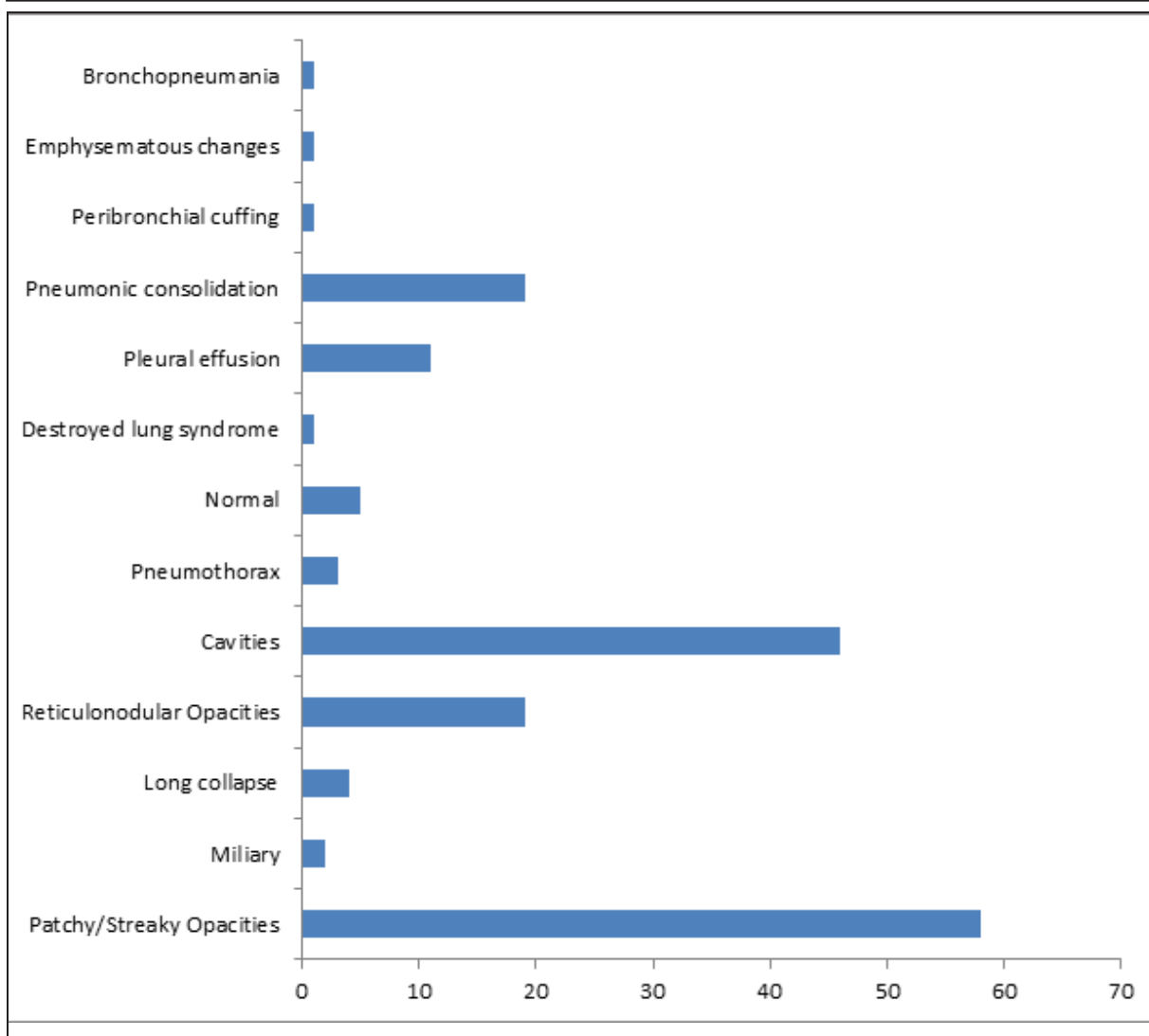


Figure 1. Patterns of radiographic findings in PTB

by chest pain and weight loss. All patients with positive history of contact with chronically coughing individuals were found to be HIV negative. This may not be surprising as HIV positive individuals are more likely to have reactivation of latent TB infection than re-infection from exposure to a tuberculosis patient¹³⁻¹⁵.

The chest radiograph is the mainstay in the radiologic evaluation of suspected or proven pulmonary TB¹⁵. WHO recommends that the diagnosis of pulmonary tuberculosis be based on any of the following: "One sputum smear positive for acid fast bacilli (AFB) and radiographic abnormalities consistent

with active PTB" for sputum positive PTB and "symptoms suggestive of PTB and three negative smears for AFB and radiographic abnormalities consistent with active PTB" for negative smear PTB^{1,4}.

The predominant radiological feature in our study was patchy /streaky opacities, followed by cavitary lesions. This is in accord with previous studies^{5,14}. The only case of destroyed lung syndrome was on the left which was noted by other studies to be more commonly affected by the lesion⁵.

The radiological features in our study showed that most of the patients had bilateral lung

involvement. This is similar to the finding by Erinle⁵. Unilateral affectation of either the right or left lung field was found in 17.0% and 13.2% respectively. Five of the study group had normal chest radiographs. This infers that a normal radiograph does not totally exclude active tuberculosis. It has however, been argued that this may be seen in cases associated with endobronchial lesions which may not be apparent at the time of the examination or early apical lesions that can be missed¹⁴. In such unclear cases, CT scan is often helpful¹⁵. Chijioke et al¹⁵ reported the usefulness of CT scan in demonstrating pulmonary miliary shadows in a patient with miliary PTB in

which the chest X ray was essentially normal

The commonest lobar involvement is that of the upper lobe (78.2%). This agrees with findings in other studies^{7,9}. Dosumu⁷ in his study drew attention to the preponderance of the upper lobe lesions in PTB.

In conclusion, we found patchy/streaky opacities and cavitatory lesions predominantly affecting the upper lobes as the commonest radiographic features in PTB. Chest radiograph remains a useful tool in the diagnosis and subsequent management of PTB.

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COITAL TRAUMA AS SEEN AT THE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI

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ABSTRACT

Background: Evidence suggests that coital trauma is a common occurrence in the society but grossly underreported as most of the injuries are minor and self limiting. **Objective:** To document the pattern of coital trauma. **Method:** This was a retrospective descriptive study of cases of coital trauma seen at the University of Maiduguri Teaching Hospital [UMTH] over a period of 20 years (1990 – 2009). **Result:** The incidence of coital trauma in this study was 0.34% of the total gynaecological patients seen within the period. The mean age was 19.88 ± 6.75 , 45.8% of them were teenagers and 16.7% were prepubertal girls. Alleged rape was the commonest aetiological factor seen in 13 (54.2%) of the patients while in 6/24 (25.0%) of the cases no obvious cause was detected. Injury occurred at coitarche in 16/24 (66.7%) of the patients and in 58.3% of them the sexual intercourse was non-consensual. The commonest site of coital injury was the lower vagina 13/24 (54.2%) and 8/24 (33.3%) had laceration on the posterior fornix. A patient presented in shock and another with a rectovaginal fistula. **Conclusion:** Coital injury in the society is not an uncommon occurrence but seldom reported and still poses a great challenge as regards to its prevention. Sex education, counseling and enforcement of stringent penalties to the perpetrators of rape will go a long way in reducing its occurrence.

Key words: Coital trauma, teenagers, pre-pubertal girls, rape, non-consensual, bruises,

INTRODUCTION

Coital trauma constitutes a common type of female lower genital tract injury, yet, seldom reported gynaecological emergency¹. Coital injuries range from simple abrasions to extensive laceration of the vaginal walls, fornices, cervix and urethra, rarely leads to rectovaginal or vesico-vaginal fistula¹⁻⁴. Most coital injuries seen in Nigeria occur among the reproductive age group especially among married women and rape cases. The incidence is also higher in nulliparous and low parity women^{5,6}.

Predisposing factors include forced or rough coitus, sexual brutality as in the case of rape and when the woman is not adequately prepared as

in marital homes and consensual intercourse. Others include genital disproportion, post menopausal vaginal atrophy, pregnancy, puerperium, congenital and acquired shortness of the vagina and the position assumed during sexual intercourse such as sitting and dorsal decubitus positions^{3,4,7-9}.

Management is multidisciplinary and depends on extend of the injury, blood loss and the associated complications. Major complications of coital injuries are haemorrhage, vaginal stenosis, sepsis, transmission of infections, injury to abdominopelvic organs, rectovaginal fistula, vesico vaginal fistula and occasionally death^{1,3,10-14}.

This condition might be prevented by sex education for all and curbing the unacceptable habit of rape in the society.

This study aims to determine the incidence, clinical presentation and risk factors to coital injuries at the UMTH, Maiduguri.

MATERIALS AND METHOD

A 20 year (1990-2009) retrospective descriptive study of all patients with coital injuries seen at the UMTH was conducted. Records of the patients were obtained from the operation

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Coital trauma

register, gynaecological emergency records, ward register and case notes recovered from the medical records department. These were studied for socio-demographic characteristics, clinical presentation and findings, treatment, complications and predisposing factors. The information was recorded on a proforma designed for the study and entered into an IBM computer and SPSS version 16 statistical package was used to analyze the data and then presented in tables as frequencies and percentages.

RESULT

There were a total of 27 patients seen with coital injuries out of the 7,867 new gynaecological patients seen during the study periods. Twenty four cases with full details were recovered and analyzed (retrieval rate=89%).

The mean age of the patients was 19.88 ± 6.75 years with the range of 7 to 39 years. Most of the patients were teenagers, 11/24 (45.8%) and 4/24 (16.7%) were prepubertal girls. Nulliparous and women of low parity constituted 22/24 (91.6%), 16/24 (66.7%) were single and 13/24 (54.2%) had at least primary

education as shown in table 1.

Alleged rape was the commonest aetiological factor seen in 13 (54.2%) while in 6/24 (25%) of the cases no obvious cause was detected. Injury occurred at coitarche in 16/24 (66.7%) of the patients and in 58.3% of the women the sexual intercourse was non-consensual as shown in table 2.

Table 3 depicts the clinical presentations, complications and sites of coital injury. All the patients presented with vaginal bleeding and pain while 18/24 (75.0%) had vaginal lacerations. The commonest site of coital injury was the lower vagina as seen in 13/24 (54.2%) and 8/24 (33.3%) had laceration on the posterior fornix. One of the patients with laceration in the lower vagina also had a concomitant rectovaginal fistula.

All the patients had broad spectrum antibiotics. Examination under anaesthesia and repair of laceration was done for 20/24 (83.3%). Vaginal packing was the treatment offered in 3/24 (12.4%) and a patient had 2 units of blood transfused to correct anaemia.

Table 1: Socio-demographic characteristics

Characteristics	Frequency (%)
1. Age group	
<10	2 (8.3)
10-19	11 (45.8)
20-29	8 (33.3)
30-39	3 (12.5)
Total	24 (100)
2. Parity	
0	17 (70.8)
1	3 (12.3)
2	2 (8.3)
3	1 (4.2)
≥4	1 (4.2)
Total	24 (100)
3. Educational status	
No formal education	11 (45.8)
Primary education	2 (8.3)
Secondary education	7 (29.2)
Tertiary	4 (16.7)
Total	24 (100)
4. Marital status	
Single	16 (66.7)
Married	8 (33.3)
Total	24 (100)

Table 2: Causes, risk factors and consent.

1. Causes	Frequency (%)
Rape	13 (54.2)
Rough	5 (20.8)
None	6 (25.0)
Total	24 (100)
2. Risk factors	
Coitarche	16 (66.7)
Pregnancy	3 (12.5)
Puerperium	3 (12.5)
Influence of drugs	2 (8.3)
Total	24 (100)
3. Consent	
Non consensual	14 (58.3)
Consensual	10 (41.7)
Total	24 (100)

Table 3: Clinical presentation and site of injury

1. Clinical presentation.	Frequency (%)
Laceration	18 (75.0)
Bruises only	2 (8.3)
Vulvovaginal haematoma	2 (8.3)
Hypovolaemic shock	1 (4.2)
Fistula	1 (4.2)
Total	24 (100)
2. Site of injury	
Lower vagina	13 (54.2)
Posterior fornix	8(33.3)
Vulva	3 (12.5)
Total	24 (100)

DISCUSSION

Even though the act of coitus is supposed to be pleasurable, it could result in considerable morbidity and mortality in some women. However, these complications are preventable. Abstinence is the ultimate prevention but, it is a difficult and unrealistic prescription in a male dominated society like ours. Therefore, epidemiology of coital injuries is of great importance in the diagnosis, treatment and prevention of its complications⁷.

Coital trauma is not an uncommon occurrence worldwide but grossly under reported perhaps most cases have minor injuries and are self

limiting or due to shame associated with it^{3,8,9}.

In this study, coital trauma constituted 0.34% of all gynaecological patients seen. This is lower than 0.7% reported in Abraka⁶ and Calabar⁷, Nigeria. The lower incidence may be related to the shame and secrecy attached to the condition which makes most cases to linger in silence and only a few severe cases and those due to rape do report to the hospital for medical help^{3,9}. Also Dao et al in the USA reported higher occurrence of 30 cases per year¹⁴ and Cisse et al in Dakar Senegal also reported 32 cases per year¹⁵.

Young ladies are the commonest victims of rape⁷ and therefore it is not surprising that teenagers constituted 45.8% of our patients. This is also because rape is the commonest cause of coital injury in our study. A similar finding has also been reported in Calabar⁷, Nigeria. While in Abraka, Delta State, rough coitus or lack of fore play was reported as the commonest risk factor in coital injuries⁶.

The offence of rape is the most heinous sexual offence under the Nigerian criminal law¹⁶ and is punishable by life imprisonment¹⁷. Even an attempt to commit it attracts a penalty of 14 years imprisonment¹⁸, yet this despicable act still persists in our environment. This may not be unconnected to the fact that the perpetrators are hardly prosecuted and most of the cases are covered in secrecy in an attempt to cover up for the victims. There is a need to divulge from this attitude and allow the law to take its course. This may serve as a deterrent to others and could reduce the occurrence of coital injuries in our environment.

The majority of the patients were Nulliparous and had no formal education while the most affected age group were the teenagers. This findings is similar to the findings reported at Abraka, Ile Ife and Ilorin^{1,6,8}.

Coitarche was the predisposing factor in majority of our patients and this could be traumatic especially when it is non consensual as was the case in 58.3% of our patients. Coitarche is also the commonest risk factor identified in Ilorin⁸. Occurrence of rectovaginal fistula following sexual intercourse is not an uncommon finding as reported by Ijaiya et al³. One of our patients had rectovaginal fistula which was repaired. One other patient presented in shock which

is also a rare complication of coital injury as reported in USA¹⁴. She had 2 units of blood transfused to correct anaemia

Lower vaginal injuries were the commonest in our study and this is in consonance with the findings of Abasiattai and colleagues in Calabar, Nigeria⁷. The lower vagina including the fourchette and the introitus can easily be injured during forceful penile penetration as obtained in rape and non consensual intercourse. This type of injury is more likely in young nulliparous women and at coitache as obtained in our study.

Posterior vaginal fornix was the commonest site of injury reported in Benin⁶ and Ilorin⁸ but it is the 2nd commonest site in our study. This is because the posterior fornix is the part of the vaginal that receives the penile thrust during intercourse. This type of injury is more likely in parous women and during consensual intercourse. Our finding could be because only a 3rd of our patients were parous and intercourse was consensual in 41.7% of them.

Vaginal bleeding and pain were the commonest clinical presentations found in this study, majority presented with severe laceration that necessitated repair, this findings were similar to the findings reported in other centres.^{1,3,5-9}

Prevention of coital injuries can be achieved by sex education, counseling and enforcement of laws to ensure that the perpetrators of rape do not escape the wrath of the law.

In conclusion, coital trauma is not uncommon in our environment but under reported. Sex education, counseling and enforcement of laws to forestall occurrence of sexual violence will go a long way in reducing the menace.

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KNOWLEDGE, ATTITUDES AND PRACTICE OF PEOPLE IN MAIDUGURI, TOWARDS VOLUNTARY BLOOD DONATION

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ABSTRACT

BACKGROUND: Voluntary blood donation is an important component of medical therapy. Many avoidable deaths have occurred because blood or blood products needed to save these lives were not available. The need for blood keeps on increasing as reflected by increasing rate of road traffic accidents, complications of pregnancy and child birth, various anaemias and surgical emergencies. **OBJECTIVE:** To document views on blood donation **METHODOLOGY:** A cross-sectional study in which 80 structured questionnaires were administered to respondents. **RESULTS:** The study population comprised of 61 (76%) males and 19 (24%) females. The findings revealed that majority of respondents (57.5%) had enlightenment about blood donation; however only 28.7% had donated blood in the past. Most respondents (42.6%) never donated blood in the past due to the following reasons; 34(42.5) not called to do so, lack of awareness about voluntary blood donation 9 (11.3), fear of HIV screening 6 (7.5), poor nutrition 4 (5.0), ill-health 3(3.8) as well as cultural and religious taboos 6(7.5) against voluntary blood donation. Most respondents (61.17%) said that they could only donate blood either on an emergency basis or to a close relative/ friend if compelled to do so. A substantial proportion of respondents (77.5%) were aware of infections that are acquired through blood transfusion such as HIV (38.6%) and hepatitis B and C viruses (~26%). **CONCLUSION:** Although voluntary blood donation is an important component of medical therapy, very few respondents in the study had ever donated blood in the past and majority would consent to free blood donation only in case of emergency or as family replacement.

Key words: *knowledge, blood donation, infection transmission*

INTRODUCTION

Voluntary Blood Donation can simply be defined as safe, non-remunerative removal of blood from suitable donors in order to save the life of a compatible recipient.¹ Voluntary blood donation is a custom with deep roots in medical practice. Regular and adequate blood donation is necessary to sustain transfusion medicine, defined as that part of the Health System which undertakes the appropriate provision and use of human blood resources.^{2,3}

Blood donor recruitment in Nigeria was previously estimated at less than one per thousand population.⁴⁻⁷ This is grossly low and unacceptable compared with rates of 30 to 50 per thousand population in developed countries.⁸ A survey conducted between April 1999 and June 2002 about the knowledge and attitudes of Nigerian to blood donation, in which structured questionnaires were issued in some 20 Nigerian towns; reported that although many Nigerians knew blood donation and transfusion related issues, lack of definitive donor recruitment strategies and fear of donation were the major impediments to successful donation campaign. On another score there are many superstitious beliefs about blood donation and transfusion in Nigeria.⁶ Culture and Religion are another obstacle to voluntary blood donation practice in our society. Other militating factors include ignorance and declining standard of living.⁵

Even though official policy in Nigeria is that blood donation should be voluntary and non-

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remunerative, only a few people practice this. Several studies on the knowledge, attitudes and practice of people about blood donation in Nigeria revealed the apparent difficulties encountered in sourcing for voluntary blood donors. Many Nigerians today appear insensitive to the need for voluntary blood donation even though the demand for blood far exceeds its supply.⁵ At the same time, profound degenerative changes have occurred in the economy which has increased the poverty level.⁶

The need for proper voluntary donor education, motivation, recruitment, selection and retention cannot be over emphasized. In this way blood requirements for major surgical operations, anaemia, and other ailments will be met. Some studies have suggested that government-sponsored programme to supply donors with health-building supplements will reverse this situation.³

Therefore, to have blood we have to rely on ourselves, in order to save lives. It is in light of above that this study was embarked upon

MATERIALS AND METHOD

Study area: the study was conducted within Maiduguri metropolitan council and Jere local government areas of Borno State. Maiduguri has an estimated population of about 1.2 million people according to the 2006 National Population Census figures. The city is cosmopolitan in nature with Kanuri, Babur/Bura, Hausa, Shuwa-Arab, Fulani, Marghi etc. as the major ethnic groups; other ethnic groups from Nigeria and neighbouring countries of Chad, Niger, and Cameroon republics are also found in the city.

Study population: Eighty [80] consecutive adults within the study area who consented to provide information on voluntary blood donation.

Study design: cross sectional descriptive

study.

Sample size: sample size was calculated using Epi Info statistical software, the study was powered to 80% (i.e. $1-\beta$) and α level of 5% was used. The calculated sample size was 72, however 80 consecutive adults who consented to give information on voluntary blood donation were administered structured questionnaires to allow for missing data

PRIMARY SOURCE OF DATA

Primary data was obtained through administration of structured questionnaires by the investigators. Eighty respondents were consecutively interviewed. Socio-demographic information about the respondents such as sex, age, occupation, marital status etc were contained in the questionnaire as well as other relevant information about voluntary blood donation. The survey was conducted between March and June 2007.

The questionnaires were designed based on a pre-study focused group discussion with potential blood donors at the UMTH blood bank and other people in the community within Maiduguri metropolis. Pre-testing prior to the commencement of the study subsequently validated it.

TOOLS AND TECHNIQUES OF DATA COLLECTION

Qualitative technique was employed in the form of structured questionnaires, because the research involves seeking information about people's behaviour towards voluntary blood donation. Trained final year medical students administered the questionnaires to the study participants.

STATISTICAL METHOD

The data was manually entered into a computer database and was subsequently analysed using SPSS version 11.0 (SPSS, Chicago, Ill, USA). Values were expressed as means, averages, and percentages. Descriptive Statistics was

used to analyse the data obtained as averages and percentages. Tables and diagrams were used for illustrations as and when appropriate.

Ethical consideration: Ethical clearance for the study was obtained from the University of Maiduguri Teaching Hospital Ethics and Research Committee.

RESULTS

Eighty respondents in various parts of Maiduguri metropolitan and Jere LGAs were administered structured questionnaires. These respondents included patients and their relatives attending the Blood Bank and the General Out Patient Department of University of Maiduguri Teaching Hospital, Staff of Imam Malik Islamic Centre Maiduguri, Residents of Shehuri North, Fezzan Ward and Federal Low Cost Estate Maiduguri. The age range of the respondents was 20-70 years with a mean age of 37.3 ± 8.25 years, out of these, 61 (76.2 %) were males and 19 (23.8%) females. Of these, 58 (72.5%) had tertiary education, 6 (7.5%) had secondary education, 3 had primary education, 9 (11.3%) had Islamic/Qur'anic education and 4 (5.0%) did not have any form of education. The ethnicity of the respondents reflected the common ethnic groups that are resident in Maiduguri; 36 (45%) were Kanuri, 12 (15%) Hausa, 6 (7.5%) Babur/Bura, 5 (6.3%) Fulani, 4 (5%) Yoruba and Igbo, respectively, 2 (2.5%) Marghi, 1 (1.3%) each of Bade, Bolewa, Bidiri, Jarawa, Kibaku, Glavda, Shuwa Arab, Michika and Mandara, respectively.

Forty-six (57.5%) respondents had received enlightenment about voluntary blood donation in the past, while 33 (41.3%) did not. One (1.3%) was a non-respondent.

In terms of knowledge of diseases that are transmissible through blood transfusion; 62 (77.5%) respondents were aware that there are some diseases that are transmissible through blood transfusion, while 17 (21.3%)

were not. One (1.3%) was a non-respondent. Among those who had knowledge about these diseases; 64 (38.6%) were aware of HIV, 43 (25.9%) aware of Hepatitis, 16 (9.64%) Malaria, 14 (8.43%) Cytomegalovirus, 15 (9%) Toxoplasmosis, 13 (7.83%) respondents were aware of Syphilis, and 1 (1.3%) others (e.g. Yellow fever).

Only 3 (4.7%) of the respondents had received blood transfusion in the past, while 77 (96.3%) respondents were never transfused. However, 53 (63.3%) respondents said that they may one day need blood transfusion, 21 (26.3%) did not think so and 6 (7.5%) were non-respondents.

Fifteen (18.5%) respondents strongly agree that voluntary blood donation should be legislated, 20 (25%) agreed with that, 19 (23%) disagreed, and 1 (1.3%) strongly disagreed with legislating voluntary blood donation.

Sixty eight (85%) respondents thought that voluntary blood donation could be encouraged through publicity and mass media campaigns, while 11 (13.8%) did not agree with the fact that voluntary blood donation could be encouraged through mass media campaigns/publicity.

Six (7.5%) respondents strongly agreed that blood donation should be remunerable, 15 (18.8%) agreed, 36 (45%) disagreed, 7 (8.8%) strongly disagreed while 16 (20%) respondents were not sure whether blood donation should be remunerable or not.

Eight (10%) of respondents strongly agreed that voluntary blood donors should be paid compensation by a social insurance trust fund, 22 (27.5%) agreed with that, 35 (43.8%) disagreed and 3 (3.8%) strongly disagreed. Twelve (14.1%) respondents were not sure whether voluntary blood donors should enjoy social insurance cover or not.

Twenty four (30%) respondents strongly

Voluntary blood donation

agreed with the fact that voluntary blood donors should be acknowledged in the form of national honour, certificate of merit, or medal, 23 (28.8%) agreed with that, 17 (21.3%) disagreed, 3 (3.8%) strongly disagreed and 13 (16.3%) respondents were not sure.

Thirteen (16.5%) respondents strongly agreed with fact that voluntary blood donors should be given a time off from work on blood donation day, 33 (41.3%) agreed, 22 (27.5%) disagreed, and 1 (1.3%) strongly disagreed, while 11 (13.8%) were not sure.

Sixteen (20%) respondents strongly agreed with the fact that voluntary blood donors should be paid for expenses incurred during

blood donation only, 27 (33.8%) agreed, 27 (33.8%) disagreed, 2 (2.5%) strongly disagreed and 8 (10.1%) were not sure.

Thirty-five (43.8%) respondents strongly agree with the fact that traditional/religious leaders have role to play in encouraging voluntary blood donation, 36 (45%) agreed, 4 (5%) disagreed, and 5 (6.3%) were not sure.

Fifty-one (63.8%) respondents knew their blood group while 28 (35.5%) did not. One (1.3%) was a non-respondent. Thirty-five (43.8%) respondents were aware of the National Blood Transfusion Service (NBTS), while 45(56%) were not.

Table 1: socio-demographic characteristics of respondents

Socio-demographic characteristics	Number of respondents N (%)
Age range (years)	20-70
Mean age (years)	37.2 ± 8.25
Males	61 (76.2)
Females	19 (28.8)
Educational Level:	
Tertiary	58 (72.5)
Secondary	6 (7.5)
Primary	3 (3.8)
Islamic	9 (11.3)
Unschoolled	4 (5.0)
Ethnicity:	
Kanuri	36 (45.0)
Hausa	12 (15.0)
Babur/Bura	6 (7.5)
Fulani	5 (6.3)
Yoruba	4 (5.0)
Igbo	4 (4.0)
Marghi	2 (2.5)
Others	9 (11.7)

Table 2: Age groups of respondents

Age group (years) N	Male N(%)	Female N(%)	Total N(%)
20-29	11(18.0)	6 (31.6)	17 (21.3)
30-39	34(55.8)	7(36.8)	41(51.3)
40-49	11 (18.0)	4(21.1)	15(18.7)
50-59	3 (5.0)	0 (0.0)	3 (3.7)
60-69	1(1.6)	2(10.5)	3(3.7)
≥70	1(1.6)	0(0.0)	1 (1.3)
Total	61(100)	19(100)	80(100)

Table 3: Respondents' knowledge of infections that can be transmitted through blood transfusion.

Infections	number of responses N (%)
HIV	64 (38.6)
Hepatitis B&C viruses	43 (25.9)
CMV	14 (8.4)
Malaria	16 (9.7)
Toxoplasma gondii	15 (9.0)
Syphilis	13 (7.8)
Others	1 (0.6)

NB: total number of response exceeds 80 because of multiple responses by a single respondent.

Voluntary blood donation

Table 4: Attitudes of respondents towards voluntary blood donation

Conditions that may make Respondents to donate blood	Number of responses N (%)
Emergency situations only	36 (42.4)
To family members and relatives only	14 (16.5)
To friends only	2 (2.4)
Only when called to do so	19 (22.4)
Voluntarily	10 (11.8)
Only when covered by a social Insurance fund	1 (1.2)
On remunerable basis only	1 (1.2)
Will never donate	2 (2.4)

DISCUSSION

Majority of the respondents in the study belong to the economically active age groups of the population (i.e. 26-45 years). This finding is similar to those reported by Olaiya et al⁷ in Lagos, Nigeria. In addition, most respondents had tertiary education. Their attitudes may be different from the older and younger age groups in the study population. The older and the very young may not have received enlightenment about voluntary blood donation or may be less motivated to donate blood.

Quite a substantial proportion of the respondents had knowledge on voluntary blood donation yet only a handful of them ever donated blood. This finding may lend credence to the fact that public enlightenment alone without motivation may not increase the pool of voluntary blood donors in the society. This is in concordance with findings of Olaiya and colleagues as well as Ezimah et al.^{1,7} According to findings by some workers, the main

motivating factor that mobilises prospective donors is their awareness of the patients need for blood in combination to one's presumption that one day they may also find themselves in need of blood transfusion.^{7,9,10} Other research findings support the claim that altruism and awareness of need are not strong motivating factors.¹¹ This study has shown that people would donate blood if they were called to do so, in emergency situations or if somebody is in vital need for their blood or will get some form of recognition/acknowledgment/refreshment. Thus the above reasons should be taken into consideration when developing a donor recruitment programme.¹²⁻¹⁶

The study has shown that substantial proportion of the respondents agreed with the importance of voluntary blood donation in a society. However, the reason given by majority of respondents for not donating blood in the past; was the fact that they were not called to donate blood¹⁷⁻¹⁹. These reasons were different with

findings from studies in developed countries, in which most respondents said that they did not donate blood because of busy schedules at work as well as lack of time off from work on blood donation day.²⁰

Most of the respondents had enlightenment on blood donation and a substantial proportion of them agreed with the fact that blood donation is important. However, only a score of these respondents had donated blood in the past. The reason for their poor donation was that most of them were not called to donate; hence there is a need to intensify campaign about voluntary blood donation in our communities so that people could be called to donate blood voluntarily in the spirit of altruism. These campaigns should be a continuous process with follow up enlightenments at all levels. The findings from these study also revealed that most of the indications for blood donation in our society were due to conditions like child birth, surgical operations, ill health and road traffic accidents. These findings were similar to those of other studies in sub-Saharan Africa.^{4,20,21}

Most respondents had a fair knowledge about infections that are transmissible via blood transfusion. Notably, nearly 40% of respondents were aware of HIV and about a third knew hepatitis B and C viruses. This could be due to the recent public awareness campaigns on HIV/AIDS and Hepatitis through the mass media. Most of these media campaigns are carried out by government and non-governmental organisations (NGO). Cultural and religious practices did not feature as major impediments toward voluntary blood donation in the study as well as other factors like poor diet and fear of HIV screening, compared to findings in a similar study done in Nigeria.⁶ This could be simply due the fact that most of the respondents were from the educated class.^{22,23,24}

The findings from this study also supported

the fact that voluntary blood donation can be encouraged through publicity and mass media campaigns as well as involvement of religious and traditional leaders in these mass mobilisation programmes. Other factors that could help encourage voluntary blood donor recruitment in our society include; incentives for blood donors like refreshments and cover for expenses incurred during blood donation, as well as social insurance trust fund. The study also highlighted the roles that can be played by factors like blood donor acknowledgments and time off from work on blood donation day for workers in encouraging voluntary blood donation. The study has further shown that publicity on blood donation and legislation (e.g. allowing free access to blood and blood products for regular volunteer blood donors and their families) may increase community participation in blood donation. These findings were similar to those obtained in some European studies.^{12,21-27}

Furthermore, findings from the study revealed that only about a half of respondents were aware of the activities of the National Blood Transfusion Service (NBTS) at the time of the survey. This could have changed since then, however it has become imperative on the NBTS, health institutions, NGOs, religious bodies, traditional institutions, and indeed the general public to intensify public enlightenment campaigns about the activities and services of the NBTS. Everybody is a stakeholder in this all-important task.

Finally as a caveat, a major concern with surveys like this is that it measures the behaviour of respondents not their actual practice. Because what respondents say they do may be different from what they practice in real life, which may be a limitation as in most qualitative studies of its kind.

In conclusion, the study has shown that although most respondents were aware of the importance of voluntary blood donation in our

society very few had ever donated blood in the past and few were willing to donate blood voluntarily in the future because of the wrong beliefs that blood should be donated only in situations of medical emergency or to close

relatives and friends or only when called to do so. Religious and cultural beliefs were not among the major factors that prevented most respondents from donating blood voluntarily in the past.

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PELVI-URETERIC JUNCTION OBSTRUCTION AS SEEN IN UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL: A SIX-YEAR EXPERIENCE

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ABSTRACT

Background: Pelvi-ureteric junction obstruction is defined as narrowing or kinking of the junction between the ureter and the renal pelvis, that is associated with symptoms and or complications. It can result from a congenital narrowing or external compression by aberrant vessels, fibrous band or peri-ureteric fibrosis. The obstruction however may be due to impacted stone. It can be unilateral or bilateral and associated with complications ranging from pyelonephritis, nephrolithiasis and impaired renal function. Surgical procedures for treating this condition include minimally invasive techniques like laparoscopic pyeloplasty and open pyeloplasty. **Objective:** To determine the clinical presentation and outcome of Pelvi-Ureteric Junction (PUJ). **Materials and method:** We retrospectively reviewed all patients that were managed as pelvi-ureteric junction obstruction in University of Maiduguri Teaching Hospital between January 2006 to December 2011. Information was obtained from clinical records and laboratory results. Data was analysed using PASW statistic¹⁸. **Results:** A total of 73-patients were analysed. Fifty-four of the patients were males and 19 females, ratio of 3:1, age ranged from 15months-55yrs, mean of 26.77 ± 12.78 . The peak age is 20-29(35.62%), with over 70% of the patients presenting within the age of 10-39years. The cardinal features were loin pain, loin tenderness, fever, and nausea/vomiting occurring in, 63(86.30%), 42(57.53%), 37(50.68%), and 28(38.36%) patients respectively. Associated co-morbidities were diabetes in 6 patients (8.22%), hypertension in 3(4.11%), HIV in 4(5.48%) and asthma in 1(1.37%). **Conclusion:** Pelvi-ureteric junction obstruction is common in this environment but patients present late with complications. Therefore early diagnosis and prompt treatment is necessary for good outcome.

Keywords: *Pelvi-ureteric junction obstruction, fibrosis, aberrant vessel.*

INTRODUCTION

Pelvi-ureteric junction [PUJ] obstruction is essentially a congenital problem and patients may present early or late. The acquired form of PUJ obstruction usually follows fibrosis from a previous renal/ureteric surgery with injury to the pelvi-ureteric junction, or inflammatory process following pyelonephritis¹. Obstruction can be from congenital narrowing by fibrous band, aberrant vessel², and or retroperitoneal fibrosis. In the tropics where schistosomiasis³ and tuberculosis⁴ are common, extensive involvement of the urinary tract can involve proximal ureter and PUJ. Late presentation is usually associated with complications such as pyelonephritis, hydronephrosis,

stone formation, pyonephrosis and impaired renal function or absolute loss of renal unit⁵. Currently in developed countries diagnosis is made in-utero⁶ However in developing countries the diagnosis is usually made in the post-natal period; In older children and in adults with late presentations, there are associated complications. The management of PUJ obstruction ranged from stenting, endoscopic balloon dilatation, open pyeloplasty, laparoscopic pyeloplasty, robotic- assisted, to robotic pyeloplasty⁷⁻⁹. However open pyeloplasty remain the best option where the state of the art facilities are not readily available. This study reviewed PUJ obstructions, presentation, management and outcome as seen at the University of Maiduguri Teaching Hospital [UMTH].

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Materials and Method

The study reviewed all cases of PUJ obstruction managed at the UMTH over the study period. A total of 73 of the 81-patients had complete information for analysis. PASW statistics¹⁸

was used for analysis. Written permission was obtained from the Hospital Research and Ethical Committee. All patients gave written informed consent for the respective procedures done for them. Basic investigations done included urinalysis, packed cell volume, serum electrolytes, genotype (in children), abdominopelvic ultrasound scan, urine microscopy, culture and sensitivity. Diagnosis was made via intravenous urography. Anaemia and electrolytes derangements were corrected and urinary tract infection was treated based on sensitivity tests. Co-morbid conditions like diabetes, hypertension, asthma and HIV infections were optimised before operation. Prophylactic antibiotics (Ceftriaxone and Metronidazole) were routinely given. Those patients that presented in renal failure had serial haemodialysis or temporary nephrostomy tube drainage until renal function returned to normal before definitive surgery. All patients had surgery under general anaesthesia with endotracheal intubation. Accesses were via midline transperitoneal laparotomy for patients with bilateral obstruction, while subcostal incisions were used in those with unilateral obstruction. All procedures were stented with double-J stent in 52 procedures and the rest were improvised with feeding tubes. All stents were removed within 72hrs-6weeks.

RESULTS

Fifty-four of the patients were males and 19 females, a ratio of 3:1, age ranged from 15months-55yrs, with a mean of 26.77 ± 12.78 years [Table 1]. The peak age group is 20-29(35.62%), with over 70% of the patients presenting within the age of 10-39years. Duration of symptoms ranged from 3months -13years. The cardinal features were loin pain, loin tenderness, fever, and nausea/vomiting occurring in, 63(86.30%), 42(57.53%), 37(50.68%), and 28(38.36%) patients respectively as in table 2. Associated co-morbidities were diabetes in 6 patients

(8.22%), hypertension in 3(4.11%), HIV in 4(5.48%) and asthma in 1(1.37%).

Table 3 showed complications at presentation: hydronephrosis, pyelonephritis, and stone disease were the major complications. A total of 17 stones were found with 6 obstructing while 11 were non-obstructing. There was a high incidence of anaemia in bilateral disease occurring in 7(58.33%). Intra-operative findings revealed the various causes of obstruction as shown in table 4, with an unusual cause of schistosomiasis accounting for 5 out of the 9 causes due to fibrosis. One nephrectomy was done for a non-functioning kidney histology of which revealed a polycystic kidney with a focus of papillary cell carcinoma in the renal pelvis obstructing the PUJ.

Table 5 showed procedures performed. Some patients had more than one technique or procedure performed due to severity of their condition or bilateral disease. Both obstructing stones (6) and non-obstructing stones (11) were dealt with at the same sitting. In one patient with bilateral severe schistosomiasis involving the entire ureters up to the PUJ causing obstruction, Yang montie procedure on the left and Mitrofanoff's procedure on the right was done. There was no mortality. The hospital stay ranged from 5days-6weeks with a mean of 9 days.

Post-operative complications seen were: One patient(1.37%) had post operative renal failure which improved on haemodialysis. surgical site infection (ssi) in 6(8.22%), UTI in 6(8.22%),leakage in 3(4.11%),and reoperation in 2 for re-stricturing (2.74%). The follow up period ranged from 3months to 4years, with the mean of 23months. During the follow up period the clinical condition of the patients improved with optimum biochemical and radiological outcome.

Table 1: Age distribution

Age (yrs)	No (%)
<10	8(10.96)
10-19	11(15.07)
20-29	26(35.62)
30-39	16(21.92)
40-49	6(8.22)
≥50	6(8.22)
Total	73(100)

Table 2: Signs & Symptoms

Signs/symptoms	No(%)
Loin Pain/discomfort	63(86.30)
Loin tenderness	42(57.53)
Fever	37(50.68)
Nausea/vomiting	28(38.36)
Palor	11(15.07)
Haematuria	10(13.70)
Dysuria	8(10.96)
Loin mass	6(8.22)
*Others	11(15.07)

**Facial/leg oedema, uraemic frost, weight loss*

Table 3: Complications at presentation

Complications	Unilateral disease(61)	Bilateral disease(12)
Hydronephrosis	15(24.59)	7(58.33)
Pyelonephritis	16(26.23)	7(58.33)
Stone	16(26.23)	1(8.33)
Renal failure/impairment	2(3.28)	4(33.33)
Non-functioning kidney	0(0.00)	2(16.67)
Anaemia (pcv<30)	6(9.84)	7(58.33s)

Table 4: Causes of obstruction

Intrinsic narrowing	46(63.01)
Extrinsic fibrous band	5(6.85)
Aberrant renal vessel Fibrosis/stricture (eg. schistosomiasis)	6(8.22)
Obstructing stone	9(12.33)
Tumour(papillary cell Ca)	6(8.22)
	1(1.37)
Total	73(100)

Table 5 Procedures done

Anderson-Hynes	44
Heineke-Mirhulicz	14
Foley Y-V Plasty	8
Culp- De Weerd	11
Adhesiolysis	10
Pyelolithotomy	6
*Others	3

**1 nephrectomy, 1 Yang montie procedure and 1 Metrofanoff's procedure (in one patient).*

DISCUSSION

Pelvi-ureteric junction obstruction is a common problem presenting in children and young adults, however in this environment it is seen in all ages associated with complications due to late presentation. This study found loin pain, fever and loin tenderness due to urinary tract infections the common presenting features. Complications of pyelonephritis, hydronephrosis, and varying degree of renal function impairment were also documented in previous reports ^{7, 8} except for renal failure necessitating dialysis especially in bilateral disease. We made the diagnosis of PUJ obstruction based on clinical grounds, ultrasonography and radiological imaging in keeping with diagnostic procedures worldwide⁹.

The aetiology of PUJ obstruction is mainly congenital narrowing accounting for the majority of cases as seen in this study(63.01%), others are fibrous band¹⁰(6.85%), aberrant renal vessel¹¹(8.22%) and retroperitoneal fibrosis/ stricture from previous inflammation(12.33%) as seen in a previous study¹². However peculiar findings in this study are the occurrence of

schistosomal fibrosis¹³(6.85%) and obstructive stone disease (8.22%) obstructing the PUJ which are in variance with studies elsewhere. Majority of the procedures (44) were Anderson Hyenes dismembered pyeloplasty which is the gold standard¹⁴. There were 8 Foley Y-V plasty, and 11 Culp pyeloplasty for high insertion ureters, and redundant renal pelvis as indications respectively¹⁵. Postoperative complications of wound infection (8.22%), urine leakage (4.11%) and urinary tract infection (8.22%) are in keeping with similar study by Maranya etal¹⁰. There were unusually prolonged hospital stays compared to other studies¹⁶ due to complications at presentations like urosepsis, anaemia, impaired renal function, and co-morbid medical conditions for which patients needed to be optimised before definitive open surgery.

In conclusion, pelvi-ureteric junction obstruction is fairly common in this environment. Late presentation with attendant complications was a common finding. High index of suspicion for early diagnosis and management to improve outcome is essential.

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MYOSITIS OSSIFICANS PROGRESSIVA : A CASE REPORT AND LITERATURE REVIEW

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SUMMARY

Myositis Ossificans progressiva is a rare , progressively destructive , inheritable musculoskeletal disorder characterized by massive crippling heterotopic ossification from diffuse fibroblastic proliferation. A patient is reported here to show some of the symptoms of this disease entity so as to facilitate early diagnosis by clinicians.

Key words: *Myositis ossificans progressiva, Adolescent, Nigerian.*

INTRODUCTION

Myositis Ossificans Progressiva also known as fibrodysplasia progressiva or Munchmeyer's disease is a chronic , progressive ,rare musculoskeletal disease in which there is osseous replacement of the connective tissue around muscles ,tendons , aponeuroses , fascia and ligaments with associated bony ankylosis of the small joints leading to complete immobility¹. This disease was first described in 1648 by Guy Patin when he described a woman who "turned wood ". This catastrophic disorder is known to have Mendelian inheritance in man and it has been mapped on chromosome 2q23-24. Less than 2% of patients with the disease have phenotypic and genetic variants ².

Myositis Ossificans Progressiva (MOP) usually affects children less than 10 years old during which it presents as progressive hard lumps in the neck or back muscles. There is no known racial predilection for now. By the age of 15 years , 95% of the patients have immobility of the upper

limbs . Repeated episodic flare ups are precipitated by trauma , even a lumbar puncture or a biopsy may be responsible².

The usual sequence of symptoms is progressive heterotopic ossification starting at the mean age of 4.6yrs (0-16yrs) . There may be scalp nodules then axial and subsequently proximal and distal extremities involvement. The neck , spine and shoulders are sites of early involvement. There may be conductive deafness , short great toes with hallux valgus is almost always seen. Subsequently the "chin - on - chest" deformity develops as the neck progressively stiffens. By the age of 7 years the patient develops synostosis of the humeral shaft to the chest wall³.

With continued growth of the humeral head there is superior migration and subsequent subluxation of the shoulder. About 90% of cases are reported to develop tibial osteochondromas which are usually located at the pes anserinus. Scoliosis is also seen in 65% of the patients ². They are usually wheel chair bound by the age of 30 years with an average age at death of 42 years (28-60 yrs) . Pneumonia ,Pulmonary hypertension and thoracic insufficiency syndrome with cardio-respiratory failure are some of the late diseases that may lead to the demise of these patients.

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MOP frequently presents with posture and gait abnormality or with other orthopaedic complaints among which microdactylism and hallux valgus are the most outstanding. They may present at the stage of inflammation, swelling, induration of the muscles and connective tissues, tumefaction, calcification or ossification and severe crippling³.

The biochemical findings in MOP are usually normal but radiological findings may include symmetrical single great toe phalanges and short thumbs, calcification and ossification of subcutaneous fat, muscles, tendons, aponeurosis and ligaments. There may also be large posterior elements, synostosis of the spinal processes, tall narrow vertebral bodies, fusion of facet joints between C2 and C7 as well as spinal deformities².

The various treatment modalities that have been used include corticosteroids especially during flare ups, IV etidronate, isotretinoin, Rosiglitazone and prednisolone tablets 5 mg daily but with no consistent objective alteration in the course of the disease. Non steroidal anti inflammatory drugs, Vitamin C, mast cell inhibitors, Leukotriene inhibitors and aminobisphosphonates have also been prescribed. Excision of the calcified soft tissue or biopsy is generally discouraged because of the increased likelihood of provoking a flare up.

Patients with MOP have a self-perpetuating 'fall cycle'. Minor soft tissue trauma may lead to severe exacerbation of the disorder resulting in ossification and joint ankylosis which predisposes them to more frequent falls. The children should pursue a less physically interactive play⁴

CASE REPORT

O.S is a 10 year old girl who developed

spontaneous onset of swelling and stiffness around the neck region at the age of two years. There was associated multiple rashes and fever necessitating admission at University College Hospital Ibadan. The rashes healed but was followed by progressive stiffness of the neck and shoulders.

Subsequently she developed multiple hard swellings at her lower back which remained persistent. There is also associated stiffness of the right hip but no fever, cough or weight loss.

She is the first of 2 children from her mother. There is no family history of similar ailment. She has been to several hospitals for treatment and biopsy done but to no avail.

Examination revealed a young girl of appropriate height for her age, not pale, afebrile and anicteric. There was limitation in neck movement: Flexion -10 degrees, Extension - 20 degrees, Lateral rotation (right -30 degrees and left 50 degrees). Shoulder movement was also restricted: Abduction (Right - 40 degrees and Left -35 degrees). Flexion and Extension was 5 and 10 degrees respectively in both shoulders. The range of motion in right hip was limited to flexion of 40 degrees while abduction is 30 degrees whereas the left hip had flexion of 45 degrees and abduction of 60 degrees.

There were multiple hard non tender masses lateral to the spine on both sides with a healed scar overlying one of the masses on the right side of her lower back (Fig 1).

Radiological examination revealed ossification of the physal growth plate of the right femoral head with bridging

bone between the neck and lesser trochanter of the right femur. There are also bridging bands of cord-like radio opaque shadows on the lower back and subscapular regions posteriorly extending toward the axillae and humerii (Fig 2).

The laboratory investigations done revealed a total protein value of 6.3 grams per decilitre (g/dl), the normal range is 6.5-8.7g/dl. Albumin was 3.7g/dl which was also slightly below the normal range of 3.8-4.4g/dl while globulin value was 2.6 g/dl (normal range 2.0-5.9 g/dl). The blood chemistry result was as follows; Alkaline phosphatase 112 units/litre (U/L) which is higher than the normal range (35-100 U/L), calcium 2.04 millimoles per Litre (mmol/L) which was within the normal range 2.02-2.60 and inorganic phosphate of 1.55 mmol/L which was also within the normal range of 1.30-2.26 mmol/L. Other investigations done were erythrocyte sedimentation rate (ESR) which was 06 millimetres per hour, the white blood cell differential count which was lymphocytes 39.6%, neutrophils 49.3% and monocytes 11.1%. Her haemoglobin concentration was 12.6 g/dl.

Based on the clinical and radiological findings, the diagnosis of MOP was made. She was placed on ibuprofen 200mg 8hourly for one week, Vitamin C tablets and Vitamin B complex tablets for six weeks as well as physiotherapy. The patient was seen after six months with subjective evidence of improvement which could not be objectively substantiated because the range of the neck, shoulder and hip movement were essentially the same. The same treatment was repeated and she was given a further six months appointment.



Fig .1. Posterior view of patient with Myositis Ossificans Progressiva showing multiple hard paraspinal masses in her Lumbar region.



Fig 2 showing bridging bands of cord-like radio opaque shadows on the back extending to the right axilla of patient with myositis ossificans progressiva.

Discussion

Myositis ossificans progressiva is a rare musculoskeletal disease that is well documented among Caucasians, however there are very few case reports in Africa on this crippling disease. This has led to lack of knowledge about the disease, late diagnosis and performance of biopsy which leads to aggravation of the disease especially among Africans⁵⁻⁷. The diagnosis is best made clinically and radiologically⁵ so as to avoid trauma to the muscle which can initiate a flare.

The first case of MOP was reported in Nigeria by Ele, P U et al⁶ in 1994. Thereafter, a few others like Obedike et al reported a case in 2000 and Obikili EN et al⁷ in 2006. The later authors described a case of MOP in a 3 year old Igala boy with progressive ossification of connective tissue and muscles of the neck and chest. There were characteristic anomalies particularly microdactyly of the hallux and pollex. Hallux valgus and clinodactyly were also noted. The 2nd to the 5th metacarpals had epiphysis at both the proximal and distal ends instead of only at the proximal ends. Even though the patient presented in the first year of life, the diagnosis was not made until in the fourth year of life. This is similar to the index case presented here where the correct diagnosis was delayed till the age of 10 years. We agree with their suggestion that early diagnosis is important in order to avoid all forms of trauma that may worsen the prognosis.

The largest documented case series of MOP was done by Connor JM and Evans DAP⁸ in 1979 during which 34 patients were studied. They did a total assessment of MOP in Great Britain by using a number of techniques including using national consultant survey, a survey of disabled homes and associations, computer searches of records of hospital inpatients and computer search of death certificates. The consultant survey was sent to 2152 consultants which included those likely to

treat patients with MOP. Eighty percent responded. Potential patients were visited by the team. Relations were also examined for stigmata of the disease. Records of patients as well as their radiographs were reviewed where available. A total of 34 patients were identified however 4 died during the time of the study. The sex ratio was equal and the age range was 5 to 71 years with a mean age of 28.7 years. The patients that died included two women age 32 yrs and 34 yrs who died of pneumonia, a 20 year old girl who died of starvation from fixation of lower jaw and a 57 year old lady who died of pneumonia and partial atlantoaxial subluxation.

All the patients had characteristic skeletal malformations and abnormal big toes. All the abnormal big toes were noticed at birth except in 5 cases. They were able to classify the abnormal big toes into 4 subtypes based on clinical and radiological findings.

They concluded that even though the findings of MOP were characteristically distinct, delay in diagnosis was the usual finding in their series which was similar to findings of others in the literature. All the patients have abnormal big toes which also agrees with previous findings. They also observed that the skeletal malformation was not limited to the big toes but were common at variety of sites which included first metacarpal (59 per cent), the middle phalanges of little fingers (44 per cent), the femoral necks (55 percents), the cervical spine and metaphyses of long bones. All these malformations tended to be bilateral and symmetrical. Formation of ectopic bones as was noted previously in literature usually started in early childhood in the neck or the dorsal paraspinal muscles⁹. The axial connective tissue bore the brunt of the disease and involvement of the limbs was most marked proximally. In contrast to previous report, the jaw muscles were commonly involved in their series (71 per cent)¹⁰. They also found out that abdominal muscle involvement even after operations were uncommon and in no patient were the extra-ocular muscles,

facial muscles, tongue, larynx, oesophagus, diaphragm, intestines, sphincter muscles or skin involved.

The investigation confirmed that local muscle trauma was the most important exacerbating factor of MOP. Deafness, baldness and pathological fractures were associated with some of the patients. The erratic progression of the disability was the usual pattern in all the patients with some having long periods of inactivity of the disorder.

The life span of MOP patient is reduced and most of them die from pneumonia. However in their series, most of the patients reached adult life even though with crippling disabilities. No medical treatment was found to influence the progression of the disease.

Curiously the first documented case of a viable pregnancy was in 1987 by Thornton et al¹¹. There is need to include genetic counselling in the management of these patients.

In conclusion MOP is a progressively crippling inheritable disease that if diagnosed early and activity modification adopted flares and progression may be reduced.

We recommend that a child suspected of having MOP should be carefully examined based on understanding of the symptomatology to make the diagnosis rather than doing open biopsy which may aggravate the condition of the patient.

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NEONATAL Fournier's GANGRENE: A CASE REPORT

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SUMMARY

Fournier's gangrene is primarily a disease of adults, though increasingly being seen in all ages. This is a report of our experience in the management of a patient presenting with Fournier's gangrene in the neonatal period. The predisposing condition was infective dermatitis from omphalitis. The patient had debridement and wound healed by secondary intention. The outcome of treatment of Fournier's gangrene in children secondary to omphalitis/infective dermatitis is good.

Key words: *Fournier's gangrene, neonatal, management, outcome.*

INTRODUCTION

Alfred Fournier described this disease condition as a disease of young adults of unknown cause in 1883¹. However this disease entity is now recognised as necrotising fasciitis of infective origin, source of which may be trivial to be detected. There are few reports of cases of Fournier's gangrene in neonates and infants²⁻⁴. This is a report of our experience with the management of this rare condition in the neonatal period.

CASE HISTORY

A 26-day old child, one of a set of male twins, who presented with 18 days history of fever and extensive blisters all over the body, similar lesions were noticed in the other twin. Both were initially managed at home with application of topical Gentian violet from a patent medicine store. Symptoms however continued unabated until the other twin died. In the index patient the lesions extended to involve the external genitalia prompting them to present to our centre. Pregnancy and labour were unsupervised and delivery was at home. The pregnancy was full term and uneventful. The child was not immunised. The mother is

uneducated and a full time house wife and the father is an artisan. No family history of diabetes and both parents were negative on HIV screening and their genotypes were AA. The patient was found to be febrile [T=38.9°C], weighing 3.8Kg, pale (PCV 23%). The external genitalia was uncircumcised male external genitalia with an ulcer on the ventral aspect of the penile shaft extending to the anterior aspect of the scrotum covered by necrotic tissue and extensive peri ulcer oedema. There were multiple skin involvement on the inner aspect of the thighs and lower abdomen [Figure1]. Both testes were normal, no external hernia. A diagnosis of neonatal Fournier's gangrene was made. Patient was managed with parenteral antibiotics (Ceftriaxone, Metronidazole and Gentamycin), wound debridement, blood transfusion and daily wound dressing with povidon iodine. Wound spontaneously healed and patient subsequently discharged home after 3weeks. He was seen on out-patient basis and subsequently lost to follow up after 3months.

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Fournier's gangrene in a neonate post debridement

DISCUSSION

Fournier's gangrene was originally described as a condition of sudden onset with rapid progression affecting young men of unknown cause¹. However, it is now recognised as infective necrotising fasciitis from different sources. These sources could be urogenital, ano-rectal, or cutaneous seen in 45%, 33%, and 21% respectively⁵. The predisposing factors in children include ompholitis, infected circumcision, others include systemic disorders, immunocompromised states like diabetes, haematological malignancies and HIV⁶. In this index patient the predisposing factors were ompholitis and infective dermatitis. In adults; diabetes, alcoholism, malnutrition and HIV play important role in the development of Fournier's gangrene⁷. Our patient presented with severe neonatal sepsis and anaemia. Adequate resuscitation, blood transfusion, intravenous antibiotics

were instituted, with wound debridement and bed side⁸. In our patient, tissue culture grew *Escherichia coli* and *Staphylococcus aureus* in keeping with multiple organisms of aetiology⁹. Some authors advise for closure once the wound is clean to reduce hospital stay as opposed to our experience with healing by secondary intention, prolonging hospital stay to 3 weeks¹⁰. The prognosis for Fournier's gangrene is found to be better in children than in adults^{11, 12}. When the source of infection is from the anorectum or secondary obstructive uropathy, faecal and or urinary diversion is done to prevent contamination and allow wound healing to take place¹³. This was not found necessary in our patient.

In conclusion, neonatal Fournier's gangrene though uncommon, can be successfully managed with aggressive resuscitation and wound debridement.

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