Paediatric Surgical Admissions In A Tertiary Hospital In Western Nigeria

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Abstract

There is paucity of data on paediatric surgical admission in sub Saharan Africa.
This study was done to elucidate the spectrum of childhood surgical conditions as seen in tertiary hospital in Nigeria. Data were prospectively collected over a period of one year. There were 135 paediatric surgical admission representing 15.5% of the total paediatric admissions with a mean age of 6.2yrs±4.2SDand male to female ratio of 2.3:1.

Three most common diagnostic categories were injuries in 42.2%, surgical infections in 31.1% and congenital anomalies in 12.6% of the patients. 66.7% of the children needed a surgical procedure. There were 3 deaths giving a mortality of 2.2%.

It was concluded that injuries is single most common cause of paediatric surgical admission. Measures targeted at injury prevention will help reduce the incidence of these conditions.

INTRODUCTION

Until recently data on childhood surgical admission in Africa has been scarce ([1], [2]) Children are not young adult but are a group with specific attributes that necessitate special care and attention. Data on epidemiology of paediatric surgical disease will be invaluable in the immediate and long term health care plan. This will give room to adequate budget provision to meet the specific needs of this group of patients. Hospital admission data in this instance will therefore be very useful in assessing such childhood condition with minimal data collection giving in sight into the type of disease, age at presentation and burden on in-patients services. To our knowledge in Nigeria this is the only prospective study that will look into these conditions. The only data available was a retrospective audit of surgical admission. ([2]).This study was therefore done to elucidate the spectrum of paediatric surgical admissions in a tertiary hospital in western Nigeria. It will also add to growing to data on paediatric surgical admissions in sub Saharan Africa.

PATIENTS AND METHODS

The data was collected prospectively over a period of one year from October 2002 to September 2003.All paediatric surgical patients were included in the study. Patients that had obvious surgical condition but died before intervention were excluded from the study. The data collected were demographic status of the patients, diagnosis, and duration of hospital stay and outcome of treatment. The outcome was divided in to three categories; discharge from the hospital after treatment, those that took their discharge against medical advice, and those that died during the course of treatment. The method of analysis was through the use of means and standard deviation and simple percentages.

RESULTS

Eight hundred and seventy two children were admitted in to the paediatric wards during the study period; out of which 135 (15.5%) of these were admitted for surgically related conditions. The average age of the patients was 6.2 yrs ± 4.2SD.Approximately 48.9% were aged below 5years and 11.1 aged less than 1 year. The male to female ratio was 2.3:1. The three most common diagnostic categories are injuries accounted 42.2%, surgical infections 31.1% and congenital anomalies12.6%.

Gastro-intestinal problems 9.6% and others 4.4% accounted for rest.

The most common injuries diagnosis were Fractures in 21(15.6%), soft tissue injuries in 11(8.2%) and Burns in 8 (5.9%) patients. Among those with surgical infections the

three most common diagnosis were orbital cellulitis, chronic osteomyelitis and septic wounds in 9(6.7%),8(5.9%) and 7(5.2%) respectively All the children with abscess, septic wounds, and pyomyositis were admitted for wound care.

The most common congenital anomalies were Inguinal hernia 11 (8.2%), and congenital hydrocoele 3(2.2%). The rest are as shown in the table 1.

Figure 1

Table 1: Epidemiological features of the paediatric surgical conditions .at the federal medical centre Owo

DIAGNOSIS	NUMBER OF PATIENTS
TRAUMA	
Fractures	21(15.6%)
Soft tissue injuries	11 (8.2%)
Burns	8(5.9%)
Head injury	5(3.7%)
Abdominal trauma	3 (2.2%)
Crush Injuries	3(2.2%)
Ankle injuries	2(1.5%)
Dislocation	1(0.7%)
Clitoridal cyst (Post circumcision)	1(0.7%)
Hand injuries	1(0.7%)
Sub-total	57(42.2%)
SURGICAL INFECTIONS	
Orbital cellulitis	9(6.7%)
Chronic osteomyelitis	8(5.9%)
Septic wound	7(5.2%)
Septic arthritis	6(4.4%)
Superficial abscess	4(2.2%)
Acute osteomyelitis	2(1.5%)
Cellulitis	2(1.5%)
Typhoid perforation	2(1.5%)
Sub-total	42(31.1%)
CONGENITAL ANOMALIES	
Inguinal hernia	11(8.2%)
Congenital hydrocoele	3(2.2%)
Congenital talipes equino-varus	1(0.7%)
Umbilical Hernia	1(0.7%)
Cystic Hygroma	1(0.7%)
Sub total	17(12.6%)
GASTROINTESTINAL ANOMALY	
Acute intestinal obstruction (Small bowel obstruction)	6(4.4%)
Intussusceptions	5(3.7%)
Entero-cutaneous fistula	1(0.7%)
Adhesive intestinal obstruction	1(0.7%)
Sub total	13(9.6%)
OTHERS	
Foreign body in the nostril	2(1.5%)
Testicular torsion	1(0.7%)
Rickets	1(0.7%)
Cerebral palsy	1(0.7%)
Irritable hip syndrome	1(0.7%)
Subtotal	6(4.4%)
Grand total	135(100%)

The average age of the patients that presented with injuries was 6.6 years with male to female ratio of 1.6:1. Those with surgical infections was 6.2 years with male to female ratio of 1.6:1 while those with congenital anomalies was 5.2years with male to female ration of 1.4:1.

Approximately 66.6% of children presenting with surgical problems required a procedure. The most common procedure were reduction and immobilization of fractures in in 21(23.6%), wound debridement in 17(19.1%) and exploratory laparatomy for intraabdominal emergencies conditions in 16(18%). The others are herniotomy in 14(15.7%) incision and drainage of abscess in 7 (7.9%), arthrotomy in 6(6.7%) and Sequestrectomy in 5(5.6%). The rest are removal of foreign body, triple arthrodesis and tube thoracostomy in 1(1.1%) of the patients. Major operative procedures was done in 61(68.5%) and minor procedures in 28(31.5%) patients.

Three children with surgical conditions died while in the hospital giving an over all mortality of 2.2%.The distribution of the death; 5 days old neonate with spreading anterior abdominal wall cellulitis,8 days old with 60 % second degree burn and 4 months old with intussusceptions. This showed that all the deaths were below one year of age

The average duration of hospital stay was 21.4 days±27SD with a range of 1-146 days. The total hospital stays of all patients' was 2694 days.

DISCUSSION

This study has demonstrated the spectrum of surgical conditions that after children in one of the tertiary hospital Nigeria giving valuable into their prevalence. The Three most common diagnostic categories are injuries,, surgical infections, and congenital anomalies. These represented 79% of the surgical condition seen during the study period. Injuries from various forms of trauma were most common in 42.2%followed by surgical infections in 31.1% and congenital anomalies in 12.6% of the patients. The most common injury diagnosis was fractures in 21(15.6%), soft tissue injuries in 11(8.2%) and Burns in 8(14 %).Injuries as the leading cause of paediatric surgical admissions, was documented in a study in Tanzania ($_4$) and Malawi ($_5$).This was also supported in the study by Adesunkanmi et al in their series on epidemiology of childhood injury. Our study further lends credence to the increasing fact that injury is vast becoming a major health problem in sub Saharan Africa.

Surgical infections was the second most common diagnosis with periorbital cellulitis being the dominant problem accounting for 6.7%.This contrasted with the report by Bickler in the Gambia where surgical infections ranked third and the most common diagnosis was chronic osteomyelitis.($_1$)

Congenital anomalies were the third most common diagnosis with average age at presentation being 5.2years and male to female ratio of 1.4:1.The delay presentation was observed in this category of patients, seeking medical intervention only when complication arouse. This was similar to report by Odelowo in Ilorin and Adeyemo in Ibadan, Nigeria in their study of the patterns of congenital malformation.

This study has elucidated the spectrum of surgical disease as seen in a tertiary hospital in Nigeria. These data can therefore be used to set priorities for improving paediatric surgical care. It also showed that emphasis should be placed on injury prevention. This will reduce the incidence of trauma related surgical conditions in children. The strategies for control of some childhood injury in developing country like ours have been highlighted in the study by Mahon in India ($_9$). There is also need to upgrade our facilities in our hospitals to be able to meet the challenges that come with the management of these conditions in children. Improvement in trauma care should include all the three tiers of health care delivery. This study also showed the enormity of paediatric surgical care in Africa.

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