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Pattern of paediatric general surgery cases in a rural teaching hospital in South-South Nigeria

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Abstract

Introduction: To review the pattern of paediatric surgical cases seen in a rural teaching Hospital in south-south Nigeria over a three-year period. Methods: A retrospective analysis of all patients managed in a Paediatric Surgery Unit over a three-year period (September 2014 – August 2017) was done. Data collected were analysed using SPSS version 23. Statistical significance was set at p<0.05 at 95% confidence level and results were presented in tables and chats where appropriate. Results: 730 cases were seen of which males were more (78.4%) and more of the age groups were neonates (28.8%). Majority of the cases were electives (76.9%). Circumcision and circumcision related cases (31.0%) were mostly seen, which was followed by inguinoscrotal hernias and hydroceles, (25.1%) and gastrointestinal conditions (15.9%). Conclusion: Although the number of cases seen were few when compared with established paediatric surgical practice, the pattern of cases seen reflect what have been reported by most authors as paediatric inguinal hernia and hydrocoele were the commonest cases seen in the study barring circumcision.

Keywords: Cases, General, Paediatric, Pattern, Surgery, Surgical

Introduction

Paediatric surgical cases are disease conditions in children requiring specialist treatment by surgeons applying invasive surgical procedures. Surgical conditions in children exist in every community and has been shown to be on the increase, especially traumatic cases.[1]The number of paediatric surgical cases presenting for care in tertiary health centres usually increase with corresponding better outcomes once specialist paediatric surgery units are established.[2]

The knowledge of cases presenting in a new paediatric general surgery unit is useful to determine the disease epidemiology in that area, to formulate management protocol and local hospital policies that will ensure good outcome of cases.[2]Hence, at the inception of the specialist paediatric surgery practice, this study was conceived

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Methods

This was a cross-sectional retrospective study of all patients managed in the newly established paediatric general surgery unit of a teaching hospital in rural south-south Nigeria from September 2014 – August 2017. These patients including males and females were seen in the outpatient clinic, children emergency room and as referred cases on admission in other units in the hospital. Some were managed as in-patients while others were managed as out-patients.

Data collected include sex, age, diagnosis, emergency presentation and operative treatment. Age group of patients was defined according to NICHD paediatric terminology.[3] The data obtained was analysed using Statistical Package for Scientific Solutions (SPSS) version 23. Results were presented in tables and charts

and statistical significance set at $p<0.05$ at 95% confidence level.

Results

A total of 730 cases were managed during the period of study. Of these, 572 (78.4%) were males and 158 (21.6%) were females, table 1. Of all the paediatric age groups seen, neonates were more, 210 (28.8%). The percentage of other paediatric age groups seen are shown in table 2. Most cases managed were elective cases, 562 (76.9%), as against emergency cases which were 168 (23.1%), see table 3.

There was a wide margin between the number of male elective cases (484, 86.1%) and that of female elective cases (78, 13.9%) but the margin between male emergency cases (88, 52.4%) and female emergency cases (80, 47.6%) was small, see table 1. In other words, more of the females managed in this study had emergency cases (80, 50.6%) compared to males (88, 15.4%), see table 3.

Table 1: Demographic characteristics of cases

Variables	Frequency, n=730	Percent
Age group		
0-27 days	210	28.8
28 days-12 months	148	20.3
13 months-2years	153	21.0
3-5 years	39	5.3
6-11 years	124	17.0
12-18 years	56	7.7
Sex		
Male	572	78.4
Female	158	21.6

While most of the elective cases were done amongst the neonatal age group (192, 34.2%), most of the emergency cases were done amongst the infant group and these were 44 (26.2%), see table 2.

Circumcision and circumcision related cases were mostly seen, 226 (31.0%). This was followed by Inguinoscrotal hernias and Hydroceles, 183 (25.1%) and Gastrointestinal conditions, 116 (15.9%). The details of cases seen during the period of study is shown in table 2 and 3

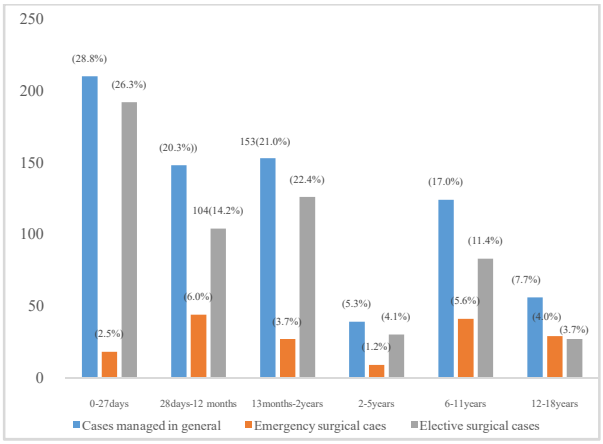

Fig. 1: number of emergency, elective and cases managed in general by age

Table 2: Number of Emergency cases listed by procedures performed

Procedure	Frequency, n=168	Percent
Intestinal obstruction from different causes	49	29.2
Peritonitis from different causes	13	7.7
Appendicitis	38	22.6
Hypertrophic pyloric stenosis	2	1.2
Traumatic emergencies	19	11.3
Complicated 0varian cyst	1	0.6
Hepatobiliary and pancreatic disorders	2	1.2
Omphalocele	3	1.8
Urologic emergencies	4	2.4
Complicated inguinal hernias	10	6.0
Soft tissue infections and abscesses	27	16.1

Intestinal obstruction from various causes was the commonest indication for paediatric emergency surgery in the study accounting for 49 of the 168 emergency cases (29.2%). Appendicitis is the second most common indication for emergency surgery with 38 patients (22.6%), see table 2

Table 3: Number of Elective cases listed by procedures performed

Procedure	Frequency, n=703	Percent
Circumcision	226	32.2
Traumatic cases	21	3.0
Tumours	42	6.0
Head and neck disorders	25	3.6
Gastric disorders	2	0.3
Duodenal disorders	4	0.6
Small intestinal/jejunoileal disorders	41	5.8
Colorectal and anal disorders	25	3.6
Appendix disorders	44	6.3
Hepatobiliary and pancreatic disorders	2	0.3
Anterior abdominal wall disorder	11	1.6
Inguinoscrotal hernias and hydroceles	183	26.0
Undescended testes	19	2.7
Urologic disorders	6	0.9
Soft tissue infections and abscesses	52	7.4

Discussion

A total of 730 cases managed during the period of study reflected about a hundred percent increase when compared to the number of cases seen in similar period before onset of specialist paediatric general surgery practice in this study area. However, this is a small number compared to 1,853 cases seen in 2009 at the paediatric surgical unit of the University of Benin Teaching Hospital, albeit the centre is a long-established paediatric surgery practice in a major city.[4]

More males were seen during the period of study which is similar to other reports in literature.[2,4-6] Neonates constituted a larger percentage of patients seen as circumcision was the highest case presentation; hence elective surgeries were higher also. Circumcision is a sociocultural practice among the communities that make up the hospital's catchment area. Since most circumcisions were done by traditionalists, cases of circumcision mishaps and complications also presented.

Aside circumcision and circumcision related cases, inguinoscrotal hernias and hydroceles were the commonest cases managed within the study period; elective cases were still more but with a smaller margin and there were still more males. Inguinoscrotal hernia and Hydrocele cases are the commonest cases presenting to most paediatric general surgery units as was the case in this study and this observation compares with the findings of a study done in a district general hospital in the United Kingdom.[7]

As shown in table 3, the cases seen were similar to the categories of cases managed in a standard paediatric general surgery unit; albeit certain cases were quite few in number while some were not seen at all like Gastroschisis.

There were significant number of soft tissue infections and abscess cases in this study probably due to the level of poor hygiene amongst the local populace. Also, soft tissue wounds sustained by children during exercise and numerous activities tend to become easily infected and suppurated due to poor native wound care practised in the rural/semi-urban setting.

The occurrence of intestinal obstruction and acute appendicitis as the commonest emergency cases compare with the findings of Ademuyiwa et al in a study done in Lagos University Teaching Hospital.[8] Neonates mostly presented with congenital anomalies resulting in intestinal obstruction aside circumcision. This may be due to the fact that the pathophysiology of neonatal intestinal obstruction is more likely to constrain parents than any other type of congenital anomaly or surgical problem.

Hypospadias was the commonest paediatric urological case seen during the period of study. This shows that hypospadias is quite a common case amongst children in this subregion as also reported by the American Urology Care Foundation.[9]

Different kinds of neck masses presented in this study, including thyroglossal duct cyst, lymphoma, cystic hygroma, branchial cyst and salivary cyst in descending order of frequency. These anomalies are as

widespread as documented in a Tanzanian research work.[10]

Tumour cases seen during the period of study were few; lymphoma and rhabdomyosarcoma cases were more in numbers. This may be so as patients seen exclusively by the hospital's paediatric oncology unit within the period were not included in the study. Also, the trauma cases were few compared to other reports.[2,5] Trauma in children relating to orthopaedic, neurosurgical and plastic specialties were not included in this study and so may account for the fewer numbers.

Conclusion

Although the number of cases seen were few when compared with established paediatric surgical centres, the pattern of cases seen reflect what have been reported by most authors as paediatric inguinal hernia and hydrocoele were the commonest cases seen in the study barring circumcision.

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