Epidemiology of paediatric surgical admissions to a government referral hospital in the Gambia

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Introduction There is a paucity of published data on the type of conditions that require surgery among children in sub-Saharan Africa. Such information is necessary for assessing the impact of such conditions on child health and for setting priorities to improve paediatric surgical care.
Methods Described in the article is a 29-month prospective study of all children aged <15 years who were admitted to a government referral hospital in the Gambia from January 1996 to May 1998.
Results A total of 1726 children were admitted with surgical problems. Surgical patients accounted for 11.3% of paediatric admissions and 34 625 total inpatient days. The most common admission diagnoses were injuries (46.9%), congenital anomalies (24.3%), and infections requiring surgery (14.5%). The diagnoses that accounted for the greatest number of inpatient days were burns (18.8%), osteomyelitis (15.4%), fractures (12.7%), soft tissue injuries (3.9%), and head injuries (3.4%). Gambian children were rarely admitted for appendicitis and never admitted for hypertrophic pyloric stenosis. The leading causes of surgical deaths were burns, congenital anomalies, and injuries other than burns.
Discussion Prevention of childhood injuries and better trauma management, especially at the primary and secondary health care levels, should be the priorities for improving paediatric surgical care in sub-Saharan Africa. Surgical care of children should be considered an essential component of child health programmes in developing countries.

Keywords: surgery; child, hospitalized; referral and consultation; hospitals, public; prospective studies; Gambia.

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Voir page 1335 le résumé en français. En la página 1335 figura un resumen en español.

Introduction

Hospital admission data can be a valuable tool for assessing the epidemiology of diseases within populations. With a minimum amount of data collection, substantial insight can be had into the types of diseases, the age at which conditions present, and their burden on inpatient service. And although these data are inevitably referral- and access-biased, they can provide useful information on morbidity in the community (*1*).

Little is known about the surgical diseases that affect children living in sub-Saharan Africa. Data are lacking on the spectrum of surgical conditions, the mortality and morbidity associated with lack of surgical services, and the burden of paediatric surgical diseases on the health systems. Incomplete information has made it difficult to define an appropriate role for paediatric surgery in Africa, and to assess the impact of surgical diseases on child health.

We describe the clinical epidemiology of paediatric surgical admissions to the Royal Victoria Hospital (RVH) in Banjul, the Gambia.

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Materials and methods

Background

The Gambia (population, 1.04 million; total land area, 10 689 km^2) is situated in West Africa and is surrounded on three sides by Senegal and on the west by the Atlantic Ocean. In 1997, the country was among the least developed in the world, ranking 165 out of 168 on the Human Development Scale (*2*). The estimated per capita income is US$ 302 per year. The infant and under-five mortality rates are 85 and 137 per 1000, respectively (*3*). The population growth rate in 1993 was 4.2%.

The RVH in Banjul is the national referral hospital. The 150-bed RVH paediatric unit is located adjacent to the main hospital and the children's surgical ward has 35 beds.

Data collection

The records of all children admitted to the children's surgical ward between January 1996 and May 1998 were reviewed by *S.W.B.* For each admission the patient's name, medical record number, age, sex, primary diagnosis, dates of admission and discharge, procedures, and outcome were recorded.

Results

From January 1996 through May 1998, a total of 1655 children were admitted to the children's

surgical ward at the RVH. This cohort of children accounted for 1726 admissions and 34 625 total hospital days. The readmission rate was 4.3%. A total of 58 children were admitted twice, 11 children three times, and 2 children four times. The average inpatient census was 40 patients, corresponding to a bed occupancy rate of 114%. The clinical base during the study included 6630 paediatric surgery outpatient visits, 15 236 paediatric medicine admissions, and 25 856 paediatric medicine outpatient visits. Surgical patients accounted for 11.3% of paediatric admissions.

The age distribution of paediatric surgical admissions is shown in Fig 1. The average patient age was 5.2 years (95% confidence interval (CI) = 5.0–5.4). A total of 51% of the children were <5 years old, and 13% were aged less than 1 year. The male to female ratio was 1.9:1.

The epidemiological features of paediatric surgical admissions are summarized in Table 1. The 58 diagnoses are grouped into nine major categories. The most common diagnostic categories were injuries (46.9%), congenital anomalies (24.3%), and surgical infections (14.5%).

The most common injuries were burns (18.1%), fractures (9.8%), and head injuries (7.6%). Seasonal variations were noted for burns and head injures (Fig. 2). Burns were most common during the cool months of the year (December–February). The peak incidence of head injuries coincided with the mango harvest when children climbed trees to collect the fruit (April–May). A second peak in head injuries was noted in December–January when children climbed trees to collect firewood.

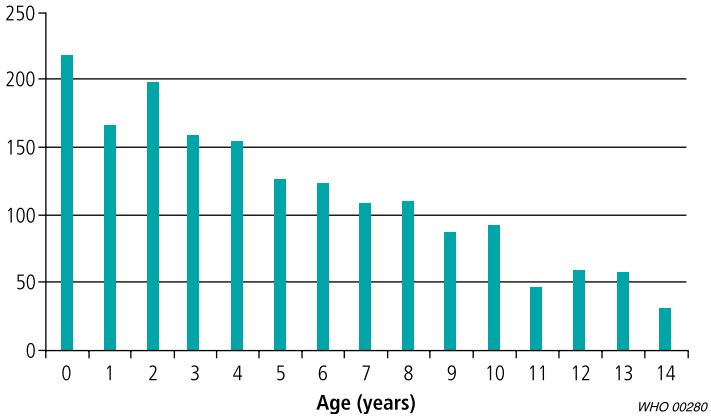
The most common congenital anomalies were inguinal hernias and hydroceles (9.6%), cleft lips and palates (2.0%), anorectal anomalies (1.7%), and Hirschsprung's disease (1.2%). The average age of children admitted for treatment of congenital anomalies was 3.9 years (95% CI = 3.5–4.2). A total of 75% of children admitted for congenital anomalies were aged >1 year.

The most common infections requiring surgical intervention were osteomyletis (5.7%), abscesses (4.2%), and pyomyositis (1.4%). All children with osteomyletis had advanced disease and were admitted for sequestrectomy. Children with abscess and pyomyositis were admitted when they required wound care that could not be provided in an outpatient setting.

The diagnoses that accounted for the greatest number of hospital days are shown in Table 2. The following single diagnoses were responsible for the largest number of hospital days: burns (18.8%), osteomyelitis (15.4%), fractures (12.7%), soft tissue injuries (3.9%), and head injuries (3.4%). All types of injuries accounted for almost 50% of the total inpatient days.

Two of the most common paediatric surgical conditions in industrialized countries were rare or absent in the Gambia: only 16 children were treated for appendicitis, making it the 23rd most common admission diagnosis; and there were no admissions for hypertrophic pyloric stenosis.

Fig. 1. **Age distribution of paediatric surgical admissions (*n*=1726), Royal Victoria Hospital, Banjul, the Gambia, January 1996 to May 1998**



A total of 89 children with surgical conditions died while in the hospital, giving an overall mortality rate of 5.3%. The distribution of paediatric surgical deaths was as follows: burns accounted for 36% of surgical deaths, congenital anomalies for 24%, trauma for 12%, infection for 11%, and other causes for 17%. The highest case-specific mortality rates occurred for selected congenital anomalies. Among the most common conditions, the highest mortality rates were found among children with meningomyelocele (42%) and posterior urethral valves (40%).

Discussion

The results of this study provide valuable insight into the surgical conditions that affect children living in sub-Saharan Africa. Our data include the spectrum of common paediatric surgical conditions, the associated morbidity and mortality, and the burden of these conditions on the health services. Other epidemiological features provide clues as to how paediatric surgery might be improved in sub-Saharan Africa.

A wide spectrum of surgical conditions affect African children. The majority of patients, however, fall into three major diagnostic categories — injuries, congenital anomalies, and surgical infections. In our series, these three diagnostic categories accounted for almost 90% of paediatric surgical admissions.

Injuries were responsible for the largest number of admissions (46.9%), the greatest number of inpatient days (49.1%), and were the leading cause of surgical deaths (48%). The most common injury diagnosis was burns (18.1%), followed by fractures (9.8%) and head injuries (7.6%). As a single diagnosis, burns were responsible for the greatest number of hospital days (18.8%) and were the leading cause of surgical deaths (36%).

Several diagnoses within the injury category were directly related to poor surgical care. A total of 29 children were treated for burn contractures, a preventable complication when burns over joints are

Table 1. **Epidemiological features of the most common paediatric surgical admissions, Royal Victoria Hospital, Banjul, the Gambia, January 1996 to May 1998**

Diagnosis	No. of admissions	Average age (years)	Age range (years)	M (*n*)	F (*n*)	M:F
Trauma and burns						
Burn	313 (18.1)[a]	3.4; *3.1–3.7*[b]	0.1–14	182	131	1.4
Fracture	169 (9.8)	6.8; *6.3–7.3*	0–14	98	71	1.4
Head injury	131 (7.6)	6.7; *6.1–7.3*	0.3–15	88	43	2.0
Soft tissue injury	76 (4.4)	6.5; *5.8–7.2*	0.1–13	51	25	2.0
Burn contracture	29 (1.7)	6.3; *5.1–7.5*	2–12	11	18	0.6
Laceration	28 (1.6)	5.5; *4.1–6.9*	0–13	19	9	2.1
Abdominal trauma	20 (1.2)	7.9; *6.6–9.2*	2–13	19	1	19.0
Wound problem	14 (0.8)	4.8; *3.0–6.6*	0.8–12	9	5	1.8
Dislocation	8 (0.5)	7.4; *5.6–9.2*	4–11	7	1	7.0
Postfracture extremity necrosis	8 (0.5)	8.2; *7.2–9.2*	*5–9.5*	*5*	*3*	*1.7*
Snake bite	6 (0.3)	12.2; *11.4–13.0*	11–14	5	1	5.0
Other	7 (0.4)	5.6; *2.9–8.3*	1.6–10	4	3	1.3
Subtotal	809 (46.9)	5.4; *5.2–5.6*	0–15	498	311	1.6
Congenital anomalies						
Inguinal hernia	165 (9.6)	4.3; *3.9–4.7*	0–13	162	3	54.0
Cleft lip/palate	34 (2.0)	2.0; *1.1–2.9*	0.3–13	12	22	0.5
Anorectal anomaly	30 (1.7)	3.3; *1.9–4.7*	0–11	21	9	2.3
Hirschsprung's disease	21 (1.2)	3.7; *2.5–4.9*	0–9	18	3	6.0
Undescended testicle	20 (1.2)	6.6; *5.0–8.2*	2–14	20	0	–
Club foot	19 (1.1)	1.8; *1.3–2.3*	0.1–4	12	7	1.7
Meningomyelocele	19 (1.1)	0.3; *0.1–0.5*	0–1.5	6	13	0.5
Umbilical hernia	17 (1.0)	2.9; *1.4–4.4*	0.1–10	9	8	1.1
Hypospadius	11 (0.6)	4.9; *3.4–6.4*	1.3–10	11	0	–
Posterior urethral valves	10 (0.6)	2.5; *0.4–4.6*	0–10	8	2	4.0
Bladder extrophy	9 (0.5)	2.9; *1.3–4.5*	0.8–8	4	5	0.8
Omphalocele	9 (0.5)	4.5; *1.3–7.7*	1–8	6	3	2.0
Cystic hygroma	7 (0.4)	3.1; *1.5–4.7*	1–7	4	3	1.3
Other	49 (2.8)	4.6; *3.5–5.7*	0–14	22	27	0.8
Subtotal	420 (24.3)	3.9; *3.5–4.2*	0–14	315	105	3.0
Surgical infections						
Osteomyelitis	98 (5.7)	7.8; *7.0–8.6*	0.1–14	59	39	1.5
Abscess	73 (4.2)	4.2; *3.3–5.1*	0–13	48	25	1.9
Pyomyositis	25 (1.4)	6.8; *5.5–8.1*	1.3–14	21	4	5.3
Cellulitis	16 (0.9)	4.5; *2.1–6.9*	0–14	10	6	1.7
Hand infection	8 (0.5)	4.5; *2.4–6.6*	1.2–10	6	2	3.0
Tuberculosis	8 (0.5)	6.3; *3.9–8.7*	2–11	5	3	1.7
Septic arthritis	5 (0.3)	8.0; *4.4–11.6*	2.8–13	4	1	4.0
Other	17 (1.0)	7.2; *4.5–9.9*	0.1–14	11	6	1.8
Subtotal	250 (14.5)	6.2; *5.7–6.8*	0–14	164	86	1.9
Gastrointestinal						
Foreign body in the oesophagus	21 (1.2)	4.9; *3.5–6.3*	0.5–13	14	7	2.0
Appendicitis	16 (0.9)	12.1; *11.4–12.8*	10–14	7	9	0.8
Abdominal pain	13 (0.8)	7.3; *4.9–9.7*	0.3–14	11	2	5.5
Small bowel obstruction	8 (0.5)	3.4; *0.1–6.7*	0.1–11	3	5	0.6
Caustic ingestion	6 (0.3)	4.3; *1.7–6.9*	1–9	5	1	5.0
Intussusception	5 (0.3)	2.0; *0–4.0*	0.7–6	4	1	4.0
Rectal prolapse	5 (0.3)	3.6; *1.3–5.9*	1.3–8	1	4	0.3
Other	25 (1.4)	4.2; *2.7–5.6*	0.8–12	18	7	2.6
Subtotal	99 (5.7)	5.9; *5.0–6.8*	0.1–14	63	36	1.8

Table 1 (continued)

Diagnosis	No. of admissions	Average age (years)	Age range (years)	M (*n*)	F (*n*)	M:F
Urology						
Paraphimosis	11 (0.6)	6.5; *4.8–8.2*	2.3–11	11	0	–
Urethrocutaneous fistula	6 (0.3)	8.2; *5.6–10.8*	3–13	6	0	–
Bladder stone	5 (0.3)	3.8; *1.9–5.7*	2–7	4	1	4.0
Urinary retention	5 (0.3)	8.9; *4.4–13.4*	1.4–13	5	0	–
Other	15 (0.9)	5.0; *2.7–7.3*	0.1–13	14	1	14.0
Subtotal	42 (2.4)	6.1; *4.9–7.3*	0.1–13	40	2	20.0
Neoplasms						
Malignant	19 (1.1)	7.2; *5.4–9.0*	1.8–13	9	10	0.9
Benign	17 (1.0)	7.5; *5.5–9.5*	0.3–14	6	11	0.5
Subtotal	36 (2.1)	7.4; *6.0–8.7*	0.3–14	15	21	0.7
Ear, nose, and throat						
Airway obstruction	9 (0.5)	3.2; *1.5–4.9*	0.2–9	5	4	1.2
Cancrum oris	8 (0.5)	3.0; *2.1–3.9*	0.7–4.8	1	7	0.1
Other	12 (0.7)	5.3; *4.1–6.4*	3–8	8	4	2
Subtotal	29 (1.7)	3.9; *3.1–4.7*	0.25–9	14	15	0.9
Neurosurgical						
Hydrocephalus	15 (0.9)	1.8; *0.3–3.3*	0.1–10	7	8	0.9
Encephalocele	5 (0.3)	8.4; *2.9–13.9*	1–13	4	1	4.0
Other	3 (0.2)	5.4; *0.4–10.4*	1.2–10	2	1	2.0
Subtotal	23 (1.3)	3.8; *1.8–5.7*	0.1–13	13	10	1.3
Miscellaneous						
Orthopaedic	6 (0.3)	5.8; *3.2–8.4*	2–11	5	1	5.0
Thyroid	3 (0.2)	13.0; *13.0–13.0*	13–13	0	3	0.0
Other	9 (0.5)	5.2; *3.4–7.0*	1.4–10	4	5	0.8
Subtotal	18 (1.0)	6.7; *4.9–8.5*	1.42–13	9	9	1.0
Total	**1726 (100.0)**	**5.2; *5.0–5.4***	**0–15**	**1131**	**595**	**1.9**

[a] Figures in parentheses are percentages.

[b] Figures in italics are 95% confidence intervals.

grafted early and splinted. Extremity amputations for necrotic limbs, resulting from fracture mismanagement by traditional healers, were performed on 8 children. Unreduced fractures and dislocations were also commonly seen. Joint function was rarely restored when children presented late with dislocations.

The common problem of paediatric trauma has been described at other centres in Africa. In Dar-es-Salaam, the United Republic of Tanzania, for example, injuries were the leading cause of death and accounted for almost half of all paediatric surgical admissions (*4*). In Lilongwe, Malawi, 9.7% of all paediatric admissions were related to accidents: 27% of cases were burns and scalds, and 32% were fractures usually caused by falls (*5*). A household survey suggested that 21% of urban children and 15% of rural children would suffer an accidental injury each year and that half would visit health centres. In South Africa, trauma is the leading cause of death among children aged >5 years (*6*). These reports support our contention that injuries are a significant public health threat to African children.

Congenital anomalies (24.3%) were the second most common diagnostic category, with the most striking feature of this group of children being their delayed presentation. In our series, the average age of children admitted for treatment of a congenital anomaly was 3.9 years (95% CI = 3.5–4.2). Of the children admitted with congenital anomalies, 75% were aged >1 year. While it was our practice to delay surgery for some congenital anomalies to minimize risks associated with anaesthesia (e.g. cleft lip repair at 6 months of age), in most instances delayed presentation made repair more difficult. Like many countries in sub-Saharan Africa, the Gambia does not routinely screen newborns for congenital anomalies. The pattern of congenital anomalies in our series was similar to that reported from other regions of Africa (*7, 8*).

Surgical infections (14.5%) were the third most common diagnostic category. Within this category, chronic osteomyelitis was the dominant problem. Osteomyelitis accounted for 5.7% of total admissions, and 15.4% of total inpatient days. Osteomyelitis was second only to burns in terms of the total number of hospital days. Our data illustrate the serious problem osteomyelitis poses for children living in sub-Saharan Africa, and the large burden this condition places on health services.

We believe the relatively few admissions for appendicitis and the absence of pyloric stenosis in our series reflect true differences in the incidences of these conditions in the Gambia. Although it is possible that

Fig. 2. **Seasonal variation of burns and head injuries among paediatric surgical admissions, Royal Victoria Hospital, Banjul, the Gambia** (pooled data for June 1996 to May 1998)

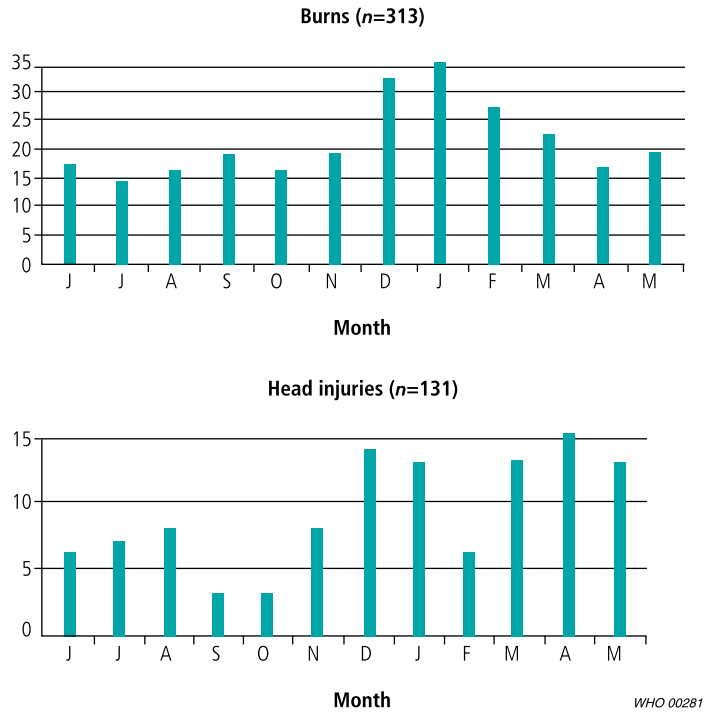


Table 2. **Paediatric surgical conditions responsible for the greatest number of inpatient days, Royal Victoria Hospital, January 1996 to May 1998**

Diagnosis	Total hospital days	% of total
Burn	6498	18.8
Osteomyelitis	5322	15.4
Fracture	4390	12.7
Soft tissue injury	1365	3.9
Head injury	1175	3.4
Burn contracture	1058	3.1
Inguinal hernia	1015	2.9
Abscess	813	2.3
Wound problem	681	2.0
Hydrocephalus	611	1.8
Hirschsprung's disease	550	1.6
Anorectal anomaly	543	1.6
Cleft lip/palate	512	1.5
Cancrum oris	437	1.3
Snake bite	433	1.3
Meningomyelocele	409	1.2
Bladder extrophy	384	1.1
Laceration	381	1.1
Tumour	379	1.1
Pyomyositis	364	1.1
Other	7305	21.1
Total	**34 625**	**100.0**

some children with these conditions die before arriving at the hospital, the large clinical base during the study makes this unlikely. The presence of Western-trained paediatricians and surgeons at RVH who are familiar with the diagnosis of these conditions makes misdiagnosis also unlikely. Moreover, in our series appendicitis was the 23rd most common diagnosis on admission. It seems unlikely that children would seek treatment for all other surgical conditions, yet not seek care for appendicitis. Using admissions data from the RVH, we have estimated the annual incidence of childhood appendicitis in the Gambia to be 0.6 per 10 000 children aged <14 years — 1/30th the incidence among Caucasian children in industrialized countries (*9*). Recently, we suggested that geographical variation in common paediatric surgical conditions may provide clues to the etiology of a number of noncommunicable diseases (*10*).

The results of the present study should be helpful in setting priorities for improving paediatric surgical care in sub-Saharan Africa. Our data show clearly that injuries are the most serious surgical problem affecting African children, accounting for the largest number of admissions, the greatest number of hospital days, as well as being the leading cause of surgical deaths. Based on these findings, prevention of childhood injuries and better trauma management should be the priorities for improving paediatric surgical care in Africa.

Injury prevention would seem to be the most cost-effective method of addressing the problem of paediatric trauma. Injury prevention has been very successful in industrialized countries — reducing the incidence of some childhood injuries by as much as 50% (*11*). Strategies for preventing childhood injuries in developing countries have been reviewed by Mohan (*12*). We agree with Forjuoh et al. (*13*) that African governments must assume the central role in this respect.

Because trauma prevention programmes will not completely eliminate childhood injuries, improving the care of injured children must also be a priority. Our data suggest a clear need to improve injury management at the primary and secondary health care levels. Basic trauma care at these levels is essential if the morbidity and mortality associated with late presentation is to be avoided. This strategy would also ease the burden on referral hospitals in sub-Saharan Africa, which are currently overwhelmed with relatively minor surgical conditions.

Finally, our study suggests that paediatric surgical conditions are common in sub-Saharan Africa. In our series, children with such conditions accounted for 11.3% of paediatric admissions and almost 20% of paediatric outpatient visits. Our experiences have also shown us that there is significant mortality and morbidity associated with poor surgical care. Paediatric surgical care should be considered an essential component of child health programmes in developing populations. ■

Acknowledgements

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Résumé

Epidémiologie des admissions en chirurgie pédiatrique dans un hôpital public de recours en Gambie

Pour les enfants vivant en Afrique subsaharienne, nous manquons de données dans les domaines suivants : spectre des affections chirurgicales, mortalité et morbidité associées à l'absence de services de chirurgie, charge des affections chirurgicales pédiatriques sur les systèmes de santé. Il est de ce fait difficile de définir un rôle approprié pour la chirurgie pédiatrique en Afrique et d'évaluer l'impact des affections chirurgicales sur la santé de l'enfant.

Afin de mieux définir l'épidémiologie des affections chirurgicales pédiatriques en Afrique subsaharienne, nous avons réalisé une étude prospective sur tous les enfants de moins de 15 ans admis dans un hôpital public de recours en Gambie entre janvier 1996 et mai 1998. Au total, 1726 enfants ont été hospitalisés pour des problèmes nécessitant une intervention chirurgicale, ce qui représente 11,3 % des admissions pédiatriques et 34 625 jours d'hospitalisation.

Les enfants africains sont touchés par de nombreuses affections chirurgicales, mais la plupart des cas appartiennent à trois grandes catégories – les traumatismes, les anomalies congénitales et les infections. Dans la série étudiée, ces trois catégories diagnostiques représentaient près de 90 % des hospitalisations en chirurgie pédiatrique.

Les traumatismes étaient à l'origine du plus grand nombre d'admissions (46,9 %) et de jours d'hospitalisation (49,1 %), et ils étaient la cause majeure des décès chirurgicaux (48 %). Les brûlures constituaient le diagnostic le plus fréquent (18,1 %) ; elles étaient suivies par les fractures (9,8 %) et les traumatismes crâniens (7,6 %). Les brûlures en tant que cause unique de traumatisme étaient à l'origine du plus grand nombre de jours d'hospitalisation (18,8 %) et de décès chirurgicaux (36 %). Elles étaient surtout fréquentes pendant la saison fraîche, alors que les traumatismes crâniens survenaient plus fréquemment à la saison des mangues, lorsque les enfants grimpent aux arbres pour cueillir les fruits.

Les anomalies congénitales (24,3 %) représentaient par leur fréquence la deuxième catégorie diagnostique. La caractéristique la plus frappante dans ce groupe d'enfants était la consultation tardive. L'âge moyen des enfants hospitalisés pour une anomalie congénitale était de 3,9 ans (intervalle de confiance à 95 % : 3,5–4,2), et 70 % d'entre eux avaient plus d'un an à l'admission. Comme la plupart des pays d'Afrique subsaharienne, la Gambie ne procède pas au dépistage systématique des anomalies congénitales chez les nouveau-nés.

La troisième catégorie de diagnostic par sa fréquence était constituée par les infections chirurgicales (14,5 %), avec au premier plan les ostéomyélites chroniques. L'ostéomyélite était à l'origine de 5,7 % de l'ensemble des admissions et 15,4 % des jours d'hospitalisation, et venait juste après les brûlures pour le nombre total de jours d'hospitalisation. Nos données illustrent la gravité du problème de l'ostéomyélite chez les enfants africains et le lourd fardeau que cette affection fait peser sur les services de santé.

Les enfants gambiens étaient rarement hospitalisés pour une appendicite et jamais pour une sténose hypertrophique du pylore, deux des affections chirurgicales pédiatriques les plus courantes dans les pays industrialisés. L'appendicite venait au 24^{e} rang des diagnostics à l'admission chez les enfants étudiés. Nous pensons que le nombre relativement faible d'hospitalisations pour appendicite et l'absence de sténose pylorique dans notre série reflètent des différences réelles d'incidence de ces maladies dans la population gambienne.

D'après nos données, l'amélioration des soins de chirurgie pédiatrique en Afrique subsaharienne devrait passer en priorité par la prévention des traumatismes chez l'enfant et par leur meilleure prise en charge. La prévention des traumatismes a été une réussite incontestable dans les pays industrialisés, et serait probablement la stratégie ayant le meilleur rapport coût-efficacité en Afrique subsaharienne également.

Comme les programmes de prévention n'élimineront pas entièrement les traumatismes chez l'enfant, il faudra également accorder la priorité à l'amélioration des soins aux enfants qui en sont victimes. Nos données montrent qu'il serait nécessaire d'améliorer la prise en charge des traumatismes aux niveaux primaire et secondaire des soins de santé. Il est indispensable d'assurer le traitement de base des traumatismes à ces niveaux si l'on veut éviter la morbidité et la mortalité associées à une consultation tardive. Cette stratégie éviterait aussi d'accroître la charge des hôpitaux de recours, déjà débordés par le traitement d'affections chirurgicales relativement mineures.

Resumen

Epidemiología de los ingresos de cirugía pediátrica en un hospital de derivación público en Gambia

Los datos de que disponemos sobre la población infantil del África subsahariana son insuficientes en lo que respecta al espectro de afecciones quirúrgicas, la mortalidad y la morbilidad asociadas a la falta de servicios quirúrgicos, y la carga que suponen las enfermedades pediátricas de carácter quirúrgico para los sistemas de salud. Esa insuficiente información ha dificultado la tarea de definir un papel apropiado para la cirugía pediátrica en África, así como la evaluación de la repercusión en la salud infantil de las enfermedades que requieren cirugía.

A fin de caracterizar mejor la epidemiología de las enfermedades pediátricas que requieren cirugía en el África subsahariana, procedimos a estudiar retrospectivamente a todos los niños menores de 15 años que habían sido ingresados en un hospital de derivación

público en Gambia durante el periodo de enero de 1996 a mayo de 1998. En total habían sido ingresados 1726 niños con problemas quirúrgicos, lo que representaba el 11,3% de los ingresos de pediatría y un total de 34 625 días de hospitalización.

Los niños africanos se ven afectados por un amplio espectro de enfermedades que requieren atención quirúrgica. La mayoría de los pacientes, sin embargo, pueden clasificarse en tres categorías diagnósticas principales: traumatismos, anomalías congénitas, e infecciones quirúrgicas. En nuestra serie, estas tres categorías diagnósticas representaban casi el 90% de los ingresos de cirugía pediátrica.

Los traumatismos son la principal causa de ingreso (46,9%), ocasionan el mayor número de días de hospitalización (49,1%), y son asimismo la primera causa de defunción quirúrgica (48%). El diagnóstico más frecuente de traumatismo fueron las quemaduras (18,1%), seguidas de las fracturas (9,8%) y los traumatismos craneales (7,6%). Considerando los casos con un solo diagnóstico, las quemaduras fueron la causa del mayor número de días de hospitalización (18,8%) y la causa principal de defunción quirúrgica (36%). Las quemaduras eran más frecuentes durante la estación fría, y los traumatismos craneales se daban con mayor frecuencia durante la temporada de recolecta del mango, en la que participan muchos niños trepando a los árboles.

Las anomalías congénitas (24,3%) fueron la segunda categoría diagnóstica más frecuente. El dato más llamativo sobre este grupo de niños es la tardanza con que los llevaron al hospital. La edad promedio de los niños con tales anomalías fue de 3,9 años (intervalo de confianza del 95%: 3,5-4,2). En total un 70% de los niños ingresados con anomalías congénitas superaban el año de edad. Al igual que la mayoría de los países del África subsahariana, Gambia no somete sistemáticamente a sus recién nacidos a un cribado de las posibles anomalías congénitas.

Las infecciones quirúrgicas (14,5%) fueron la tercera categoría diagnóstica más frecuente, con predominio de la osteomielitis crónica. La osteomielitis representó el 5,7% de los ingresos totales, y el 15,4% de todos los días de hospitalización, situándose sólo por detrás de las quemaduras en lo tocante a esta última variable. Nuestros datos ilustran el grave problema que supone la osteomielitis para los niños que viven en el África subsahariana, y la enorme carga que esta afección impone a los servicios de salud.

Los niños gambianos rara vez eran ingresados por apendicitis, y nunca por estenosis pilórica hipertrófica, dos de las afecciones de cirugía pediátrica más frecuentes en los países industrializados. La apendicitis ocupaba el 24º lugar en la clasificación de diagnósticos más frecuentes en el momento del ingreso entre los niños estudiados. Creemos que el número relativamente bajo de ingresos por apendicitis y la ausencia de casos de estenosis pilórica que muestra nuestra serie refleja la existencia de diferencias reales en la incidencia de esas enfermedades en la población de Gambia.

Nuestros datos indican que la prevención de los traumatismos infantiles y la mejora del manejo de los traumatismos deberían ser intervenciones prioritarias para mejorar la cirugía pediátrica en el África subsahariana. La prevención de los traumatismos ha tenido resultados muy satisfactorios en los países industrializados, y constituye probablemente también la estrategia más eficaz con relación al costo en el África subsahariana.

Puesto que los programas de prevención no lograrán eliminar por completo los traumatismos en la infancia, la mejora de la atención dispensada a los niños que los sufren también debe ser una prioridad. Nuestros datos parecen subrayar la necesidad de mejorar el manejo de los traumatismos en los niveles asistenciales primario y secundario. La atención básica a los traumatizados a esos niveles es indispensable para evitar la morbilidad y la mortalidad asociadas a los ingresos tardíos. Esta estrategia aliviaría además la carga de los hospitales de derivación, desbordados actualmente por enfermedades que requieren intervenciones quirúrgicas relativamente menores.

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