Original Article

Anorectal Anomalies in Ghana: A Review of 54 Cases

Les anomalies anorectales au Ghana Etude de 54 Cas

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Abstract

Background: Anorectal anomalies are common paediatric problems, but represent surgical challenges. Our experience in the management of anorectal anomalies in children seen at the Paediatric Surgery Unit of the Korle-Bu Teaching Hospital, Ghana, is presented.

Patients and Methods: This was a retrospective review of children with anorectal malformation seen at the Paediatric Surgery Unit of the Korle-Bu Teaching Hospital from February 1998 to December 2005. The parameters reviewed were age and sex profiles, the type of anomaly, the presence or otherwise of a fistula, associated anomalies, the number of surgeries done and an assessment of progress, complications and eventual outcome in terms of continence made at the last follow-up visit

Results: There were 54 patients, 36 were males and 18 were females (M:F=2:1). Presentation in the neonatal period was the most common. Age at presentation ranged from one day to 51/2 years, (median 3 months). Twenty eight (51.9%) were low or intermediate anomalies, 14 (50%) of which occurred in males and 14 (50%) in females. Twenty six (48.1%) children had high anomalies, 22 (84.6%) were males and 4 (15.4%) were females. Associated anomalies included umbilical hernia, Down's syndrome, cardiac anomalies, unilateral hydro-nephrosis. Twenty one (75%) children with low anomalies had three staged surgical treatment; 14 (50%) of these patients are completely continent. Of the 26(48.1%) children with high anomalies, 12 (46.2%) had three staged procedures to complete treatment; 11 (91.7%) of these are fully continent.

Conclusion: Anorectal anomaly is not uncommon in Ghana. The results of treatment are generally satisfactory.

Keys words: Anorectal anomalies, constipation

Resume

Arrière-plan: Les anomalies anorectales sont des problèmes pédiatriques communs, mais représentent des défis chirurgicaux. Nous présentons notre expérience de la gestion d'anomalies anorectales chez des enfants traités à l'unité de chirurgie pédiatrique du Centre hospitalo-universitaire de Korle-Bu au Ghana. ***Patients et méthodes:*** Il s'agit d'une étude rétrospective des enfants atteints de malformation anorectale soignés, entre février 1998 et décembre 2005, à l'unité de chirurgie du Centre hospitalo-universitaire de Korle-Bu. Les paramètres revus étaient les critères suivants: le sexe et l'âge, le type d'anomalie, la présence ou non d'une fistule, les anomalies associées, le nombre d'interventions chirurgicales subies et une évaluation du progrès, les complications et l'aboutissement éventuel au regard de la continence faite à la dernière visite posthospitalière. ***Résultats:*** Il y avait 54 patients, 36 étaient mâles et 18 étaient femelles (M: F=2:1). La présentation la plus fréquente était pendant la période néonatale. L'âge au moment de la présentation variait entre un jour et 51/2 années, (la midiane: 3 mois). Vingt-huit anomalies (51,9%) étaient faibles ou moyennes. Sur celles-ci, 14 (50%) figuraient chez des mâles et 14 (50%) chez des femelles. Vingt-six (48,1%) enfants avaient des anomalies aiguës, dont 22 (84,6%) étaient chez des mâles et 4 (15,4%) chez des femelles. Les anomalies associées comprenaient l'hernie ombilicale, la trisomie, des anomalies cardiaques et l'hydronéphrose unilatérale. Vingt-et-un (75%) enfants atteints d'anomalies faibles ont reçu un traitement chirurgical à trois étapes; 14 (50%) de ces patients sont complètement continents. Sur les 26 (48,1%) enfants atteints d'anomalies aiguës, 12 (46,2%) ont subi un traitement complet à trois étapes; 11 (91.7%) de ces patients sont tout à fait continents. ***Conclusion:*** L'anomalie anorectale n'est pas rare au Ghana. Les résultats du traitement sont généralement satisfaisants. ***Mots-clés:*** anomalies anorectales, constipation.

Introduction

Anorectal malformations are common causes of childhood intestinal obstruction in Ghana as is the experience elsewhere[1], with varied age at presentation. Experience shows that presentation in the neonatal period is the most commonly seen in Ghana. The spectrum of anomalies described in the literature[2] seems not to differ from those seen in Ghana. This study reports our experience in the management of anorectal malformations and their outcomes in a tertiary health institution in Ghana.

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Materials and Methods

This was a retrospective review of all cases of anorectal malformations seen in the Paediatric Surgery Unit of the Korle-Bu Teaching Hospital between February 1998 and December 2005. The parameters reviewed included age and sex, type of anomaly, associated anomalies, surgical treatment, complications and outcome of management.

Results

There were 54 patients, 36 (66.7%) were males and 18(33.3%) were females (M:F: 2:1). Their age ranged from one day to 51/2 years old (median age: 3 months). Sixteen (51.9%) patients (14 boys and 2

Table 1: Analysis of Low/Intermediate Anomalies

S/No.	Type of Anomaly	Sex	Fistula Location	Associated Anomalies	No of Stages of Surgery	Long Term Outcome
1.	Intermediate	F	Recto-vaginal	None	3	Continent
2.	Low	M	Recto-perineal	None	3	Recurrent constipation
3.	Low	M	Recto-perineal Anterior ectopic	None	1	Lost to follow-up
4.	Low	F	Anus	None	3	Good, continent inspite of multiple revision
5.	Intermediate	F	Recto-vestibular	None	3	Continent
6.	Low	M	None- visualised Anterior ectopic Para umbilical	None	1	Lost to follow up
7.	Low	F	Anus	Hernia	1	Continent with occasional constipation
8.	Low	M	None visualized	None	3	Continent
9.	Intermediate	F	Recto-vaginal	None	3	Continent anal stenosis but continent with ano-vestibular
10.	Intermediate	F	Recto-vaginal	None	1	Fistula
11.	Intermediate	F	Recto-vestibular	None	3	Continent
12.	Intermediate	F	Recto-vestibular	None	1	Continent
13.	Low	M	Ano-cutaneous	None	1	Continent with anal stenosis
14.	Intermediate	F	Recto-vestibular	None	1	Continent with anal stenosis
15.	Low	M	No fistular seen Down's syndrome	None	3	Continent
16.	Low	M	No fistula seen	None	3	Continent
17.	Low	M	Ano-cutaneous Anterior ectopic	None	1	Intermittent constipation
18.	Low	F	Anus Anterior ectopic anus	None	1	Anal stenosis with constipation
19.	Low	F	Cardiac with VSD	None	1	Continent
20.	Intermediate	F	Recto-vestibular	None	1	Breakdown anterior wall. requires redo
21.	Low	M	Ano-cutaneous	None	1	Continent
22.	Intermediate	F	Recto-vestibular	None	3	Continent
23.	Low	M	Ano-cutaneous	Right Hydro-nephrosis	3	Continent
24.	Low	M	None Visualised	None	1	Incomplete
25.	Intermediate	M	None Visualised	HIV infection	1	Incomplete
26.	Intermediate	M	None visualised	None	1	Incomplete
27.	Intermediate	M	None visualised	Cardiac not yet determined	1	Incomplete
28.	Low	F	None visualised	None	1	Incomplete

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Table 2: Analysis of High Anomalies

S/No.	Sex	Fistula Location	Associated Anomalies	No of Stages of Surgery	Long Term Outcome
1.	M	Recto-urethral	Extradigit right foot	3	Continent
2.	M	Recto-urethral	None	3	Continent
3.	F	Recto atresia	None	3	Continent
4.	M	Recto-urethral	None	3	Initially incontinent, now continent
5.	M	Recto-bulbar	Malformed right thumb	1	Lost to follow-up
6.	M	Recto-urethral	None	3	Continent
7.	M	Recto-bulbar	None	3	Continent with anal stenosis
8.	M	Recto-vesical	None	3	Initially incontinent, now continent
9.	M	None-visualised	Left hydronephrosis	1	Lost to follow-up
10.	M	Recto-urethral	None	3	Continent with anal stenosis
11.	M	Recto-urethral	None	3	Anal stenosis required dilatation
12.	M	Not yet determined	Cardiac VSD	1	Incomplete
13.	M	Not yet determined	None	1	Incomplete
14.	M	Recto-urethral	None	2	Incomplete
15.	F	Recto-vaginal	None	3	Continent
16.	M	Recto-urethral	None	3	Continent with constipation
17.	M	Recto-urethral	Cardiac VSD	3	Continent
18.	M	Recto-urethral	None	2	Incomplete
19.	M	No fistula	Down's syndrome	1	Incomplete
20.	M	Not yet determined	None	1	Incomplete
21.	M	Not yet determined	None	1	Incomplete
22.	M	Recto-urethral	None	1	Incomplete
23.	M	Recto-urethral	None	1	Incomplete
24.	F	Recto-vaginal	Cardiac VSD	1	Incomplete
25.	M	Recto-urethral	None	1	Incomplete
26.	F	None visualised	None	1	Incomplete

girls) had low anomalies while 12 (22.2%) patients (9 females and 3 males) had intermediate anomalies (Table I).

In low anomaly group, six patients had recto-vestibular fistulae, three had recto-vaginal, two had recto-perineal fistulae, four had ano-cutaneous fistulae, while four had anterior ectopic anus. In eight males and one female, no fistulae were seen.

There were 26(48.1%) patients with high anomalies, 22 (84.6%) were males and 4 (15.4%) were females. Fifteen male patients in the high anomaly group had recto-urethral fistulae, 2 of which were recto-bulbar. One other patient each with a high anomaly had recto-vesical fistula and one rectal atresia, respectively; while two others had recto-vaginal fistulae. Two patients in this high anomaly group had no fistulae even after distal loopogram and five who had no obvious external fistulae are yet to have a distal loopogram (Table II).

Associated anomalies in the low anomalies group included umbilical hernia in a female, Down's syndrome in a male, cardiac anomalies confirmed by echocardiography in a boy and a girl. Two boys had associated unilateral hydronephrosis confirmed on ultrasonography. In the high anomaly group, three patients had associated cardiac anomalies and abnormalities of the bone were associated in two other patients.

In 21 (38.9%) patients (12 with intermediate and 9 with low anomalies), surgical treatment comprised an initial colostomy, posterior sagittal ano-rectoplasty or anoplasty and subsequent closure of colostomy. Two patients had an initial colostomy but were subsequently lost to follow-up and are presumed dead.

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In four males surgical treatment was incomplete because their colostomy had not yet been closed after the definitive surgery at the time of this review.

Twelve patients with high anomalies had 3 staged procedures to complete treatment. In another 12 only the initial colostomy had been performed with two of these being lost to follow-up. In two other patients, the colostomies were yet to be closed after the corrective surgery.

Of the 21 patients with low or intermediate anomalies 14 had definitive surgery and colostomy closure and are completely continent of faeces with no further problems; 3 others, though continent, have anal stenosis that required dilatation, while 3 others still were continent but have intermittent constipation. One patient is incontinent with a recurrent ano-vestibular fistula. One other female with ano-vestibular fistula required 2 revisions of PSARP for anal stenosis and retraction of the anus. Another female developed localized skin breakdown around the neo-anus, with stenosis and subsequent ano-vestibular fistula, which closed with periodic dilatation. Four patients with low anomalies developed constipation. A male with an ano-cutaneous fistula had initial poor perineal sensation and constipation and required manual evacuation, post PSARP. This patient has subsequently been having recurrent constipation for which he requires oral aperients intermittently. Incontinence occurred in 2 patients.

Eleven (91.7%) out of the 12 patients with high lesions who completed treatment remained continent. Two patients had initial incontinence before they regained continence. Two other patients, though continent, had anal stenosis which required dilatation. There was one patient who developed postoperative constipation. Two patients, one with recto-vesical fistula and another with recto-urethral fistula, though improving, are incontinent. One patient developed anaemia, post colostomy and another diarrhea with malnutrition.

Discussion

The findings in this report agree with previous reports.[3] We had a large number of patients with low lesions being treated in 3 stages. This was mainly in the early stages of our management using the posterior sagittal ano-rectoplasty when we tended to err on the side of caution because of inexperience. Our practice has since changed and colostomies are no longer performed for low anomalies any more as is the general practice worldwide.[4] Albanese et al[5] reported one stage management of high anorectal anomalies in neonates with good success, but this practice is not popular in the developing countries like ours with paucity of health facilities such as dedicated neonatal intensive care for post-operative care.

Beals et al[6] reviewed 218 cases and noted that in 61% of patients there were associated abnormalities affecting seven systems. Such anomalies were rather rare in our series, especially vertebral defects. One reason could be that most severely handicapped children were not reaching our centre. In Ghana, deaths not occurring within health institutions or facilities are not recorded, so our figures may not represent the totality of cases that occur in the country.

One patient with a low anomaly developed anal stenosis and had an anteriorly placed anus but is continent. This is similar to the experience reported by Chen in Taiwan[4]. Lin Jn[7] observed that in spite of all surgeons' efforts, 10 to 30% of patients still suffered from total fecal incontinence, intractable to all kinds of medications and enemas and required specific management. Two (3.7%) of our patients showed temporary total incontinence, which improved with time. Pena et al in several reviews noted that constipation was the most common sequelae, and that constipation occurred in 43.1% of cases[8,9]. In our series, constipation was evident in only 9.3% of cases. The smaller size of the studied population in this study could account for our lower figures when compared to that of Pena et al.

Generally the morbidity rate in the present study was within acceptable limits; both the surgeons and the patients' parents were quite satisfied with the overall results.

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