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ABSTRACT

**Objective:** To determine the prevalence, clinical presentation, highlight management methods and outcome of treatment modalities in children who presented at the University of Calabar Teaching Hospital, Calabar with complications from previous ano-rectal operations.

**Design:** Prospective study of ano-rectal complications from previous ano-rectal surgery in children over a seven year period.

**Setting:** University of Calabar Teaching Hospital, Calabar, a referral and teaching hospital.

**Subjects:** All cases of complications from previous ano-rectal surgery in children that presented at the paediatric surgical clinic of the University of Calabar Teaching Hospital (UCTH), Calabar, between January 1994 and December 2000.

**Intervention:** Conservative measures were commenced in all cases and involved diet manipulation, enema and physiotherapeutic training.

**Results:** The age of maximum presentation was within the 6-10 year age bracket. The main presenting complaint was faecal soilage and poor bowel habit. The children notably presented late and was as a result of societal embarrassment at school. Before then the child was within the home environment hence parents may not bother. Complications from anal agenesis operation accounted for the majority of patients 45(54%) while aganglionic megacolon accounted for 39 patients (46%). Treatment in all cases started conservatively with diet manipulation, cleansing enema and physiotherapeutic training. However, with non improvement in faecal soilage, a simple repair involving a narrowing at the ano-rectal junction was carried out. In a follow-up period of between 6-12 months, 45 children had satisfactory clinical status while in 27 children their general conditions had improved.

**Conclusion:** Perseverance and tolerance from the surgeon, the parents and the patient-child is required in these conditions. The late presentation may have helped as the fibres of the external sphincter muscles perhaps have further developed. At this period the child is also psychologically aware of his problem.

INTRODUCTION

Functional disturbances of various degrees is a known complication in anorectal surgery(1). Operations on anal agenesis and aganglionic megacolon in early childhood, in an attempt to correct the congenital malformations, may leave the patient with yet another post operative problem(2). These are faecal incontinence, constipation and to a lesser extent structural deformation of the anal sphincter mechanism with stenosis. The prevalence of this condition in the South eastern axis of the country had not been documented. This study was therefore undertaken to evaluate the magnitude of the problem with a view to offering treatment to this group of patients.

MATERIALS AND METHODS

This was a prospective study of all children who presented post operatively with complaints suggestive of complications of ano-rectal surgery at the University of Calabar Teaching Hospital, Calabar (UCTH) between January 1994 and December 2000. The UCTH is the only tertiary health institution serving the south eastern region of the country with a population of about 7 million. To be eligible to be included in this study, the patients must have fulfilled the following three criterias:

- (i) Be aged 16 years and below.
- (ii) Must have been operated previously for ano-rectal abnormality.
- (iii) Must be having post-operatively, complications as a result of the previous ano-rectal operation.

Questions were asked in an attempt to determine the degree and type of post-operative complication(s). Physical examination focussed on the nutritional status of the patients and the tone of the anal sphincter by attempting the anal squeeze test. Relevant laboratory investigations included blood count and stool microscopy for parasites.

The patients were all grouped according to the complications and the operation records of the primary operation were reviewed. In the group with constipation, the treatment commenced with diet manipulation whereby "bulky" food substances were prescribed as stool softeners to encourage peristalsis. For the training in the act of defaecation and reactivation of the sphincter mechanism, training enema at the same time in the mornings were instituted and the child made to defaecate in portions and not just once.

In the group with faecal incontinence as demonstrated by soilage, the treatment started with conservative measures which included daily cleansing enemas in the mornings. Physiotherapy was then commenced which constituted of the child made to partake in the anal squeeze test. The test was done with the examining index finger in the rectum, the child is requested to squeeze maximally, in order to assist the training of the sphincter muscles and strengthen the pelvic floor, with diets low in fibres.

Failure of this conservative measure within six months to improve on continence necessitated an operative repair which consisted of a circumscribed incision around the anal margin, and the dissection carried forward until about 3-4cm of the anal serosa is exposed. Interrupted absorbable sutures were then applied in such a manner as to bring any remnant of the external sphincter muscle in apposition with the anal serosa all the way round. At the end of the exercise the same examining index finger used in the anal squeeze test is inserted into the anal canal and the grip is adjudged correct when the index finger slips firmly through. The overlying skin was thereafter closed using non-absorbable sutures to allow for sitzbathing, which was removed as the wound healed.

In the group of patients with stenosis, bouginage was instituted with a step-wise increase in the size of the bougie. The frequency of the bouginage varied, initially it was prescribed daily, then alternate days and thereafter about two times a week till satisfactory results were obtained.

The patients were all placed on high protein diets with lots of vitamins and active physical activity.

## RESULTS

During the period of this study, 84 children were treated in the UCTH with functional disturbances. These were made up of 43 boys and 41 girls with the age of greatest presentation being within the 6-10 year age bracket. No child under one year presented (Table 1). Complications from anal agenesis operation accounted for the majority of the patients 45 (54%), while complications from aganglionic megacolon operations were seen in 39 patients.

The symptomatology varied with the complications but faecal incontinence with soilage was the dominant cause, accounting for 48 patients (57%), constipation was seen in 23 patients and presented with inability

of the child to defaecate freely despite having "good size" anal canal, while anal stenosis in 13 patients presented with anal verge scarring resulting in "pin-hole" size anal canal (Table 2). Traditionally majority of these patients had been administered herbal enemas before presentation in the hospital.

**Table 1**

*Age and sex distribution in 84 patients who presented at the UCTH with complications of ano-rectal operations*

Sex	Under 1	Age (years)			Total	(%)
		1-5	6-10	11-15		
Male	-	9	21	13	43	( 51.2)
Female	-	11	18	12	41	(48.8)
Total	-	20	39	25	84	(100)

**Table 2**

*Complications of ano-rectal operations as seen in the 84 patients who presented at the UCTH*

	Faecal incontinence	Constipation	Stenosis	Total	(%)
Anal agenesis	25	12	8	45	(54)
Aganglionic megacolon	13	11	5	39	(46)
Total	48	23	13	84	(100)

**Table 3**

*Results of treatment in 84 children who presented at the UCTH with complications of ano-rectal surgery*

Conditions that the patients presented with	Cured	Improved	No improvement	Total	(%)
Faecal Incontinence	27	15	6	48	(57.1)
Constipation	11	7	5	23	(27.3)
Stenosis	7	5	1	13	(15.5)

The results of treatment showed that 45 children were cured of their conditions while in 27 children their general condition had improved. However in 12 children the general condition never improved, necessitating continuous, repeated and often costly hospital admissions.

Overall, in a follow up period of 6-12 months, proctitis was seen in 11 children and perineal skin irritation in six children. Diet manipulation, daily enema and psychotherapy was continuously applied to these 12 children whose treatment outcome was poor as a way to improve the sanitary conditions of the patients. No mortality was recorded in this survey.

## DISCUSSION

Complications of ano-rectal surgery namely faecal incontinence, constipation and anal stenosis is well documented in the literature(3). However the treatment modalities for this group of conditions differ widely suggesting that no common consensus on the treatment exist and the frustration of surgeons with no satisfactory outcome. Vaizey *et al*(4) however are still in search of procedures to ameliorate these conditions. Some of these procedures are expensive(5) and barely affordable even in societies with social benefits. However, expensive as they may be no procedure have satisfied all the criteria needed in the treatment of these complications(5). Majority of these patients however have conditions that are correctable by less invasive procedures(6).

The increased public awareness of the last decade within the region of the societal normalcy of babies with ano-rectal anomalies resulted in increased presentation of these patients in hospitals, culminating in referrals to our centre for definitive operation. These patients are those that presented later with complications of earlier childhood operations.

Children in this survey reported late for medical assistance unlike in other series(6) and during the school age period. This is when the child is away from the home environment and because of societal embarrassment like soilage or inability to defaecate freely the parents were forced to seek medical assistance.

The simplified approach to the treatment of these complications was undertaken with our environment in mind and the results obtained were however satisfying. The procedure of narrowing at the ano-rectal junction leaves a considerable length for control. The implication of this is that, the patients were able to "identify" when the rectum was distended and therefore should be emptied, hence the urge to defaecate. It was however more helpful than the Thiersch's(7) stitch which narrows only at the anal verge leaving the rectum to be loaded with faeces with resultant over-flow(7).

Constipation in this survey was relieved using diet manipulation while stenosis was with bouginage at

regular intervals, but considerable length of time. It may then be argued that persistence and tolerance of both the physician and patient in undertaking this therapy is the yardstick for satisfactory outcome. It may also be that the age of presentation at six years and above develops the child psychologically. The fibres of the external sphincters at this age are better developed, hence the satisfactory results as obtained in this series. The dietary habit of the people in the region with lots of vegetables, fruits and fibres made for the reflective use of diet manipulation, which complimented other procedures adopted in the series and helped to improve the outcome.

In conclusion therefore it can be assumed that the increased medical awareness of the populace within the last decade accounted for the increased presentation of ano-rectal anomalies in our center. The complications arising from this anorectal operation of early childhood may best be treated at the age of six years and above when the fibres of the external sphincters have further developed and the child is psychologically aware of his environment.

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