

# Childhood Colostomy and Its Complications in Aba, Nigeria

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**Abstract:** Background: Colostomy in paediatric surgical practise is still important for decompression in colonic bowel obstruction, trauma to the colon and perineum in children. Objective: To determine the indications and complications arising from childhood colostomy in Aba, Nigeria. Methods: Proforma was opened for consecutive children that had colostomy at the Abia State University Teaching Hospital Aba from October 2016 to November 2017. Data collected include demography, indication for colostomy, Type of colostomy, complications arising from the procedure and outcome. SPSS version 17 was used to asses for proportions and percentages. Results: Thirty children had colostomy during the 14 months period. There were 20 males and 10 females (male to female 2:1). Their ages ranges from 2 days to 2 years [Mean 6.5months]. The main indications for colostomy were high anorectal malformation in 15patients (50%), Hirschsprung's disease 10 patients (33%) and perineal trauma in 5 patients (17%). Complication occurred in 10 patients (33%). The most common complications were skin excoriations in 7 patients, surgical site infection and stoma bleeding. Four patients died following severe co-morbidities. Conclusion: Colostomy is still needed for decompression in childhood colonic intestinal obstruction. However, morbidity is still high due to lack of stoma bags and stoma care nurses.

**Keywords:** Childhood, Colostomy, Complications, Outcome

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## 1. Introduction

Colostomy is the surgical exteriorization of part of the colon to the anterior abdominal wall. It is one of the most common life saving emergency procedures done worldwide [1].

Colostomy formation and subsequent closure are essential surgical steps in the management of high anorectal malformation, Hirschsprung's disease, left colonic atresia, necrotising enterocolitis, complex pelvic malformation and peri-anal trauma [1-2]. Anorectal malformation and Hirschsprung's disease are the most common indications for colostomy in children. Colostomy is a commonly constructed intestinal stoma in children and majority are temporary, so will be closed at a later date when they have finished serving their function [2].

The creation of various types colostomies which include sigmoid and transverse colostomy which may be loop, double barrel, divine or divided are done during neonatal

period with attendant high anaesthetic and surgical complications in developing countries. These procedures are associated with significant morbidity like skin excoriation, stoma prolapse, surgical site infection and mortality. Hence, some paediatric surgical centres for this reason advocate for definitive surgery for these conditions without preliminary stoma formation in highly selected cases. [2-3].

The provision of specialised colostomy care begins preoperatively, continues throughout postoperative and rehabilitative period. The colostomy appliance sizing, appliance modification, financial assistance, dietary consultation, the treatment of peristomal skin excoriation and emotional support are essential health management issues that require on- going management following creation of colostomy [3-4]. Pre and post operative education will facilitate adaptation, reduce complications and improve overall quality of life.

The aim of this study is to determine the indications and complications arising from childhood colostomy in Abia

State University Teaching Hospital Aba, Nigeria.

## 2. Patients and Methods

Proforma was opened for consecutive children that had colostomy at the Abia State University Teaching Hospital Aba, from October 2016 to November 2017. Data collected include demography, indication for colostomy, types of colostomy, complications, mortality arising from the procedure and outcome. SPSS version 17 was used to assess for proportions and percentages.

## 3. Results

Thirty children had colostomy during the 14 months period. There were 20 males and 10 females (male to female 2:1). Their ages ranged from 2 days to 2 years. Children less than 6 months of age accounted for 50% of the patients in this study.

**Table 1.** Age group of patients (n=30).

Age group	Frequency	Percentage
<1/2 year	15	50%
½-1 year	10	33%
1-2years	5	17%

The main indications for colostomy were high anorectal malformation in 15 patients (50%), Hirschsprung's disease 10 patients (33%) and perineal trauma in 5 patients (17%) as shown in Table 2.

**Table 2.** Indications for colostomy.

Indication	Frequency	Percentage
Anorectal malformaion	15	50%
Hirschsprungs disease	10	33%
Perianal trauma	5	17%

The various types of colostomies performed included sigmoid colostomies in 19 (63%) patients and transverse colostomies in 11 (37%) patients as shown in Table 3. The procedures were done as emergencies in 20 (66.6%), urgent 6 (20%) and elective 4 (13.3%).

**Table 3.** Types of colostomy.

Site	Frequency	Percentage
Sigmoid colostomy	19	63%
Transverse colostomy	11	37%

Surgical complications were encountered in 10 patients in form of skin excoriations (70%), stoma prolapse (10%), stoma bleeding (10%) as shown in Table 4.

**Table 4.** Complications of colostomies.

Complications	Frequency	Percentage
Skin excoriation	7	70%
Stoma prolapse	1	10%
Stoma bleeding	1	10%
Surgical site infection	1	10%

The cause of death in four patients includes sepsis and apnoea as shown in Table 5

**Table 5.** Cause of death.

Cause of death	Frequency	Percentage
Sepsis	2	50%
Apnoea	2	50%

## 4. Discussion

The creation of colostomy is a common procedure performed in children, especially in this sub-region [4-5]. Male preponderance with male/female ratio 2:1 recorded in this study tally with earlier reports [6-7]. Children less than six months of age accounted for 50% of patients in our series as shown in Table 1. Congenital anomaly was a major indication for colostomy in children compared with acquired pathology and this is in conformity with literatures [8-10]. Colostomy created in children for congenital indications had more associated morbidity and mortality.

The creation of colostomy remains a life-saving procedure in the management of congenital lower gastrointestinal obstruction in children [10-12]. The main indications for colostomy in children are invariably benign unlike in adults. High anorectal malformation was the leading indication for colostomy in this study followed by Hirschsprung's disease as shown in Table 2. This is a similar finding by several other investigators in which anorectal malformation was a more common indication than Hirschsprung's disease [12-14]. In contrast to our findings, Ekenze et al in his series in Enugu South East Nigeria, Uba et al in Jos North Central Nigeria and Nour S et al in Leeds England reported that Hirschsprung's disease was more common than anorectal malformation.

Divided sigmoid colostomy was used for cases of perianal trauma and anorectal malformation except in a case of cloacal malformation where divided transverse colostomy was done as shown in Table 3. Divided transverse colostomy was used in all cases of Hirschsprung's because we do not have facilities for levelling colostomy which was the gold standard. These findings were noted in previous report by others in our sub-region [4-12].

There were complications in 10 patients {33%} Table 4 and this is within the range of previous reports [6-12]. The most common complication observed in our patients was skin excoriations. Skin excoriations continued to pose a major challenge to colostomy creation and accounted for 7 (70%) children having this complication in this study. This has been attributed to the constant maceration of the skin, allergic reaction to gut contents, fungal infection of the macerated skin as well as enzymatic digestion of the macerated skin and exposed subcutaneous tissues. Stoma bags are not readily available and even when available their use in children was very difficult in most rural communities with poor hygiene. Although skin protective cream such as zinc oxide, petroleum jelly was enough to prevent deep excoriation in many patients however superficial excoriation still occurs in

some patients. The non availability of stoma bags and difficulty with its use in children, particularly among rural dwellers made skin excoriation an inevitable complication. The underprivileged mothers were taught to use napkins and clean the site regularly with water and this gave good results. [2].

Stoma prolapse which was the second most common complication in this study have been described in the literatures [12-14]. Controlling the prolapse was very difficult and no method adopted was satisfactory as was also reported by other workers [9-10]. Post operative haemorrhage from stoma site was controlled by pressure dressing and this was not severe enough to require blood transfusion as also reported previous studies [15-16].

There were 4{13.3%} mortalities in our survey as shown in Table 5. Apnoea and overwhelming sepsis were the main causes of mortality in this review and reports from previous studies [14-17].

## 5. Conclusion

Colostomy is the surgical exteriorization of part of the colon to the anterior abdominal wall. It is one of the most common life saving emergency procedures done worldwide. The main indication for colostomy in this series was high anorectal malformation and Hirschsprung's disease. Peristomal skin excoriation is still a persisting scourge following colostomy formation in low income countries like Nigeria. Further training of health personnel in stoma care will reduce the morbidity following colostomy formation.

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