

# Anorectal Malformations in Mulago Hospital, Kampala-Uganda.

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**Background:** Anorectal malformations (ARM) are common congenital abnormalities in most parts of the world. Their incidence is similar to various geographical locations. This study was aimed at determining the pattern and the outcome of treatment of ARM seen at Mulago Hospital.

**Methods:** The following review is based on clinical experience of 96 patients who presented with ARM between 1999 and 2001 at Mulago Hospital.

**Results:** There were 389 cases of congenital abnormalities seen in three years of which 96 (24.7%) had anorectal malformations. There were 30 (31.3%) cases of low ARM. There were 66(68.7%) high ARM. The commonest operation done was Posterior Anal Transfer (PAT) with or without initial colostomy. The outcome was graded as good in most cases. The commonest complication was stenosis of the neo-anus, which was attributed to delayed closure of colostomy.

**Conclusion:** Anorectal malformations are common in Mulago Hospital. The high variety is commoner than the low variety of ARM. Posterior Anal Transfer gives good results.

## Introduction

It is estimated that the incidence of Anorectal Malformations (ARM) in UK, USA and South Africa is 1:3000, 1:5000 and 1:2500 respectively. ARM has been conveniently divided into high and low varieties. In the former the anus is absent but the patient may present with a fistula, which communicates with one of the nearby organs, which commonly include vagina in the females and prostate or bladder in the males. The low type is characterized by presence of an abnormal anus, which may be anteriorly placed and may be defined as:

1. Anostenosis.
2. Concealed Anus.
3. Covered Anus.
4. Cutaneous Fistula and
5. a) Anterior anus  
b) Vestibular anus.

The Vestibular Anus, although low, is technically managed as a high abnormality. A few patients have the primitive opening which is the cloaca. This study was aimed at establishing the incidence and pattern of anorectal malformations at Mulago Hospital.

## Patients and methods

Medical records of all patients admitted at Mulago Hospital with congenital malformations between 1999 and 2001 were studied. Data obtained was

analysed for age, sex, pattern and management procedure and outcome of treatment.

## Results

There were 389 cases of congenital malformations admitted at Mulago during the period the 3-year-period. Of these, 96 (24.7%) had anorectal malformations (Table 1).

**Table 1.** Yearly distribution of ARM.

Year	ARM Cases	All congenital anomalies
1999	32	156
2000	22	145
2001	42	88
Total	96	389

The male to female sex ratio was 1:2 (Table 2).

**Table 2.** Sex distribution of ARM.

Variety	Males	Females	Total
Low	10	20	30
High	23	43	66
<b>Total</b>	<b>33</b>	<b>63</b>	<b>96</b>

The age on admission ranged between one day and 12 years. Only four patients were aged above 10 years. The majority of patients were less than a year old. Table 3 shows the distribution of the various types of the low anorectal malformations.

The 5 patients with anal stenosis had initial dilatation with Hager's dilators and later serial digital dilatation, which was continued at home.

**Table 3.** Low ARM types.

Type	Number of cases
Anterior Anus	12
Vestibular Anus	8
Anal Stenosis	5
Covered Anus	3
Concealed	2
<b>Total</b>	<b>30</b>

These patients did not come back after initial discharge. The 3 patients with covered anus presented on the first day and were treated with cruciate incision. They were discharged with good functioning ani.

The patients who presented with colostomy and had anterior anus (AA) underwent posterior anal transfer (PAT) and later had their colostomies closed. Three patients with AA presented with severe excoriation of the vulva and had to have colostomies to divert the stool and PAT after 4 weeks. The colostomies were later closed and patients discharged with good functioning neo-ani. The rest of the patients with AA had PAT done and were discharged within 5 days after surgery and were to continue digital dilatation at home.

Of the 8 patients with vestibular ani, 4 presented with malnutrition and abdominal distension. These initially had a colostomy followed by nutrition rehabilitation. Two died but the other 2 survived and were allowed to go home for convalescence. They later were done

PAT and colostomy closure followed by digital dilatation of the neo-anus.

The two patients who had concealed anus presented at 8 months and 11/2 years respectively. The former had a good anus concealed by pedunculated 3x3cm hamatoma. It was excised with good results. The second patient had a big naevus with a tuft of hair at the centre. He had a small tight anus. The naevus was excised and anoplasty done. The patient was discharged to continue with digital anal dilatation at home. All the patients who had high abnormalities presented at birth.

There were 30 males and 66 females. All had colostomies done. Three of them died soon after surgery. The rest were discharged home and later had abdomino-perineal Pull down or a limited PSARP for cases presenting with RVF. Two patients died perioperatively. The others did well and had their colostomies closed. There were two deaths after colostomy closure.

## Discussion

Anorectal malformations are one of the commonest paediatric surgical conditions seen in Uganda. In this study ARM accounted for 24.7% of the cases with congenital abnormalities admitted during the period under review. The male to female ratio of 1:2 seen in our series is comparable with what has been reported in South Africa and USA<sup>5</sup>.

The high ARM mainly presented with rectovaginal fistulae in females and rectovesicle fistulae in males. All these patients were initially treated with a colostomy to divert and create an outlet for the stool. The males, because they did not pass stool at all, presented at birth and subsequently had generally good results. The females tended to present later, usually at or after three months, with complaints of leaking or passing stool in the "wrong place" with or without excoriation of the perineum.

In keeping with what is done elsewhere, babies with covered and stenotic anus had immediate treatment and achieved good results<sup>7</sup>. Dilatation was the standard way of managing the stenotic anus.

The two patients with concealed anus respectively presented with a hamatoma and a hairy tag. Other swellings, which conceal a normal anus, include lipomas, haemangiomas and vestiges in form of tags<sup>1</sup>. In this study population, none of the cases presented with a cloaca or a recto-cutaneous fistulae.

The biggest group of patients was that with AA. However, in other areas like Turkey, RVF is the commonest abnormality<sup>10</sup>. The pure AA had PAT with good results despite the fact that some of them presented late and even required a colostomy as initial management. Others came with colostomies done from referral hospitals. Both these circumstances affected the final outcome.

The patients with the high abnormalities subsequently had an Abdomino-Perineal Pull down procedure done with good results in all the cases. There were a few stenotic anuses due to inadequate dilatation. None of our cases developed incontinence although it is a common complication when PSARP is used<sup>6,8,10</sup>. A minimal PSARP was done for all the RVF. These had good results with the occasional complication of stenosis.

The colostomy is in many cases established in an up-country hospital as a life-saving procedure. Unfortunately, inexperienced personnel who may put it in the wrong place and is kept for long periods sometimes do it is followed by complications.

The closure of such colostomies is associated with complications such as chronic water and electrolyte imbalance and skin excoriation that sometimes are fatal. The colostomy should preferably be put on the sigmoid colon and in the left iliac fossa. Intestinal obstruction after the Pull Down operation due to adhesions was a problem in three patients and was very severe in two patients who had to have re-laparotomy.

The biggest problem is delay in presentation that may be as late as one year and may affect the patient's general condition.

## Conclusion

ARM is a common abnormality in Mulago Hospital It and occurs in females more than in males. The outcome of surgery is good when the patients present at birth. Therefore there is need for increased awareness among all Health workers who handle neonates to effect early presentation and therefore prompt management.

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