



## MANAGEMENT OF URETEROECTAL FISTULA: A RARE COMPLICATION POST POSTERIOR SAGITTAL ANORECTOPLASTY.

### Paediatric Surgery

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### ABSTRACT

Ureteroectal fistula is an infrequent complication following pediatric anorectal reconstruction surgeries. We present the case of an 11-month-old boy diagnosed case of Hirschsprung's disease who developed a ureteroectal fistula post-posterior sagittal anorectoplasty. The patient presented with per-rectal urinary leak and was managed surgically with a redo bowel pull-through and extravesical right ureteric reimplantation.

### KEYWORDS

#### INTRODUCTION

Iatrogenic injury during minimally invasive or open surgeries is one of the common causes of ureteric injuries, though rare in younger patients after pelvic surgeries (1). The incidence of ureteric injuries ranges from 0.5-10% in pelvic surgeries (2).

A mismanaged injury to the ureter may cause complications like abscess, strictures, urinoma, and grave harm to the ipsilateral kidney (1).

The pelvic ureter is the most commonly injured region due to iatrogenic reasons (1). However, literature regarding ureteroectal fistula following posterior sagittal anorectoplasty (PSARP) is scarce. This report presents a rare complication of ureteroectal fistula following posterior sagittal anorectoplasty in a diagnosed case of Hirschsprung's disease.

#### Case Presentation

##### Patient Information:

The Patient underwent loop transverse colostomy with multiple biopsies at 20 days of life and was diagnosed with Hirschsprung disease, for which transanal endorectal pull-through was done at 9 months of age. The child developed anorectal stricture post-surgery, and posterior sagittal exploration with stricture excision and redo pull-through was done. 15 days post-surgery patient was referred to us with complaints of dribbling of urine from the rectum for the last 3 days

##### Clinical Findings:

On examination, the patient was febrile with abdominal distension and ascites. Functional transverse stoma was in situ. The urinary leak was observed per rectum and from the posterior sagittal wound.

##### Diagnostic Assessment:

Blood investigations were done, which showed a raised serum creatinine level. Ultrasonography of the abdomen and pelvic area suggested right hydronephrosis. The right PCN was done.



##### MRI findings:

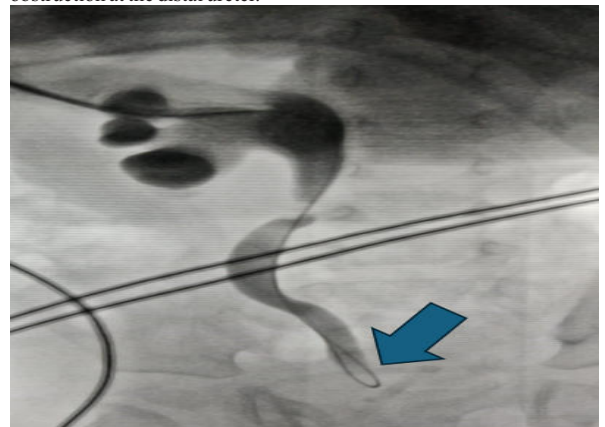
Right hydronephrosis with hydroureter and narrowing of the distal ureter near the ureterovesical junction. A suspicious tract measuring 2.5mm in diameter was noted between the distal right ureter and rectum, confirming a ureteroectal fistula.

##### Cystoscopic findings:

Normal urethra and bladder neck, both ureteric orifices were visualized. On advancing the guidewire, it could not be negotiated across the right ureteric orifice, suggesting total ureteric occlusion.

##### Percutaneous nephrostomy (PCN) findings:

No opacification of the distal ureter and bladder, confirming obstruction at the distal ureter.



##### Therapeutic Intervention:

The patient was stabilized, and an exploratory laparotomy was performed. Intraoperatively, findings of right recto-ureteral fistula were confirmed, and redo bowel pull-through and extravesical right ureteric reimplantation were performed.

##### Intraoperative Findings:

The presence of a right ureteroectal fistula with total ureteric occlusion was confirmed. The right ureter was reimplanted extravasically to restore urinary continuity.

##### Follow-up And Outcomes

Postoperative recovery was uneventful. The patient was started on anal dilatation and remained stable on follow-up. At the time of follow-up, the patient was on Kanji washes and continued to do well. Stoma closure was done after 6 months patient was on follow-up without

complaints.

## DISCUSSION

Rectal strictures are common complications following Soave's and Swenson's procedures, with an 8-24% incidence (0) and as low as 5% post-Duhamel procedure. The incidence of rectal strictures in trans anal pull through procedures is 4% (2), and are managed conservatively by dilatations of the rectum.

Fistulous complications are managed from the posterior sagittal approach (3).

Cases may have different types of recto-genito-urinary tract fistula complications post-PSARP. However, ureteric injury post-PSARP is rare, with minimal documentation in the literature.

Amongst the common causes of the ureteral injury are causes like iatrogenic trauma during laparoscopic, endoscopic, or even during open procedures. Ureteral damage can be seen in the form of ligation of the ureter with suture, avulsion, loss of vascularity, and damage due to heat. Most iatrogenic ureteral injuries involve the pelvic ureter (4).

The highest incidence of iatrogenic ureter injuries has been reported in adults in gynaecologic or colorectal procedures but limited to case reports in children (5).

### Classification of Ureteral injuries based on location: (4)

- Junction of Ureter and Pelvis (Ureteropelvic junction)
- At the level of the Abdominal ureter (up to iliac vessels)
- At the level of the Pelvic ureter (distal to iliac vessels)

Another classification given by The American Association for the Surgery of Trauma (AAST): (6)

- Grade I – Contusion or hematoma without loss of vascularity.
- Grade II – Injury leading to laceration; leading to < 50% transection.
- Grade III – laceration of the ureter; 50% or greater transection.
- Grade IV – Injury leading to laceration; A transection that is complete with less than 2 cm of devascularized tissue.
- Grade V – Injury leading to laceration; avulsion of the ureter with greater than 2 cm of devascularization.

Early identification and prompt surgical repair are crucial in minimizing morbidity.

Management strategies range from stenting for Grade 1-3 injuries to ureteroureterostomy or reimplantation for Grade 4-5 injuries. In this case, extravascular ureteric reimplantation was performed to restore function and prevent further complications.

## CONCLUSION

Iatrogenic ureteral injuries post-PSARP are rare but require early recognition and definitive surgical repair to optimize outcomes. Multidisciplinary management plays a key role in ensuring successful recovery.

### Patient Perspective

The patient's family was counselled throughout the treatment course. They expressed satisfaction with the outcome and are prepared for the next stage of surgical management.

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