

## CASE REPORT

### PATENT URACHUS WITH INVERTED ILEAL PROLAPSE THROUGH THE PATENT VITELLOINTESTINAL DUCT - A CASE REPORT

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#### Abstract

A variety of vitellointestinal duct anomalies are known with variable frequencies and its association with patent urachus is also known occasionally but prolapse of inverted ileum through the patent vitellointestinal duct is extremely rare presentation. Here we are reporting one rare case of patent urachus with patent vitellointestinal duct with prolapse of inverted ileum through it presenting in a neonate. Complications like ischemia of prolapsed ileal loop had already commenced in the form of blackening and absence of peristalsis but with prompt operative management, the patient's life could be saved and morbidities were curbed.

**Key words:** PVID - Patent Vitellointestinal Duct; EOT - Emergency Operation Theatre; ICJ - Ileo Caecal Junction; patent urachus, prolapsed bowel loops, bowel gangrene.

#### Introduction

Patent vitellointestinal duct (PVID) is one of the complications of incomplete obliteration of the vitelline duct (i.e., omphalomesenteric duct) with incidence varying from 1 in 5000 to 8000 live births. It usually presents as feculent or serous discharge through the umbilicus. A patent urachus (PU) is a communication from the umbilicus to the bladder and is a rare disorder with an estimated incidence of 1 - 2 per 1,00,000 deliveries. Affected Infants present with continuous or intermittent drainage from the umbilicus. Crying, straining, voiding, or the prone position may accentuate intermittent drainage. Combined presence of both the anomalies along with the ischemia of the prolapsed ileum is rarely documented in the English medical literature (1).

#### Case Report

A 21 days old female child was brought to the pediatric emergency ward with long loops of intestine prolapsing through the umbilicus. Past history revealed that she was a full term and normal vaginal delivery, conducted at home and weighed 2.9 kilograms. Antenatal period was uneventful though unmonitored sonographically. Baby cried immediately after birth. Within the first week itself, parents noticed that there was feculent discharge from wide umbilical opening. Occasionally there was also discharge of clear fluids when baby cried excessively. Baby was shown to local doctors but umbilical discharge did not stop. Meanwhile baby took feeds and passed urine and stools normally. By the end of third week, after an episode of intense crying, there were sudden prolapse 2 bowel loops from the umbilicus of about 5 - 6 centimeters (cms) each. Panicked parents immediately rushed to hospital. On general physical examination, patient was dehydrated and had tachycardia with feeble pulse and depressed fontanel. Two loops of small intestine could be seen prolapsing through the umbilicus with gangrenous changes in tip of one loop and pregangrenous changes in second loop (Fig 1). Provisional diagnosis of PVID

with prolapsed inverted ileum was made and patient was promptly taken for exploration after adequate resuscitation.

Laparotomy was done through transverse subumbilical incision. On exploration, urachus was found connecting the apex of the bladder to the umbilicus. Nasogastric tube of 5 french diameter could be negotiated through an eccentrically placed and compressed opening at lower margin of umbilicus. It also drained little urine and could be palpated within the bladder making confirmed diagnosis of patent urachus. PU was dissected off the umbilicus and ligated. The prolapsing ileal loops were identified thereafter. Proximally, the ileal loops had prolapsed for about 6 cms. Distally, the prolapsed ileal loops measured about 7 cms and only 10 - 12 cms of ileum proximal to the ileocecal junction was left intact. Whole of the distal prolapsed ileum was frankly gangrenous while the proximal segment had ischemic changes of variable degrees. The patent vitellointestinal duct, connecting both the loops was short and broad and measured only 1 cms in length. The ileal loops, consisting of proximal and distal prolapsed part with ischemic changes along with the PVID, measuring about 16 - 17 cms was resected and primary end to end anastomosis was done. Patient had smooth and uneventful recovery and left against medical advice on 8th post operative day.

#### Discussion

Remnants of Vitellointestinal duct account for a wide variety of umbilical abnormalities that may require surgical correction. These remnants include fistulas, sinus tracts, cysts, mucosal remainants & congenital bands. Patient may present the anomaly itself or due to complications secondary to the anomalies like intestinal obstruction due to volvulus, intussusceptions or adhesions (2-3).

Totally Patent VID is an infrequent but well known anomaly with limited number of cases reported in the literature. But there have been only 4 cases, reported in the English medical literature regarding prolapse of ileal loops through PVID (4-7). Associated patent urachus along with PVID is much rarer and we could find only one case in the literature in support (1). But the combined presence of ileal prolapse through PVID with patent urachus has not been reported yet. In our case the PVID was wide mouthed with short length with 2 ileal loops prolapsing through it with patent urachus which was not present in combination in any of previously reported cases of PVID. As the distance between Vitellointestinal duct & ileocaecal valve is lesser in infants leading to high intraluminal pressure it can be easily hypothesized that wide mouthed PVID with short duct may facilitate prolapse of ileal loop through it. Early detection of the PVID with prompt surgical management could be one of causes of rare presentation of complications like prolapse and ischemia.

Though rare in presentation, the anomaly can easily be diagnosed. It is preferable that such cases should be referred to higher centers where pediatric surgical facilities are available. Irreducible and prolapsed loops with ischemic changes must be managed on priority basis to control the extent of bowel involvement. Surgical management in the form of reduction of prolapsed loops followed by excision of PVID and end to end anastomosis of ileum is the rule.

### Conclusion

Prolapsed ileal loop through PVID is rare condition and its association with patent urachus is rarer of presentations. From our experience, we can conclude that a prompt diagnosis of PVID is needed followed by appropriate surgical management. Parents of the affected child should be counseled well about the condition and possible complications for proper management.

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