VOLUME-7, ISSUE-2, FEBRUARY-2018 • PRINT ISSN No 2277 - 8160

Original Research Paper

General Surgery

# CLINICAL SERIES OF UNUSUAL PRESENTION OF VITELLOINTESTINAL DUCT.

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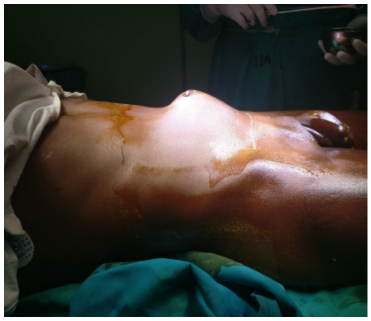
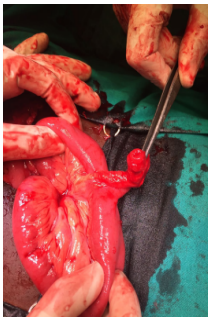
**ABSTRACT** Meckel's diverticulum is the result of incomplete obliteration of the vitelline or omphalomesenteric duct and is the commonest congenital anomaly of the gastrointestinal system [3]. It is located in the antimesenteric border of the distal ileum and is considered to be a true diverticulum [4].we are discussing two different cases presented as intestinal obstruction & fever.

**KEYWORDS** : VITELLOINTESTINAL DUCT, URACHAL CYST, INTESTINAL OBSTRUCTION

**INTRODUCTION**:
Discussion of unusual presentation of vitelline intestinal duct , two male of 15yr & 50yr old presented with different sign & symptom

**CASE 1:**
**CASE PRESENTATION:**
A 15 year old male patient presented with complains of swelling in the infraumbilical region and pain in abdomen since 2 days associated with fever episodes. On physical examination, there was diffuse swelling in the lower abdomen which was warm and tender. Laboratory data revealed a white cell count of 16,700/$mm^3$. Ultrasound examination showed a large well defined mixed echogenicity lesion in the midline in infraumbilical region of size 11.2x6.4x4.2cm abutting the anterior abdominal wall and the superior surface of urinary bladder inferiorly. CECT of abdomen revealed a well-defined cystic collection measuring 11.6x7.9x6cm in the midline just beneath the anterior abdominal wall between the umbilicus and urinary bladder indenting on its anterosuperior wall. Posteriorly the mass is displacing bowel loops. Ascending cysto-urethrogram and micturating cysto-urethrogram showed normal study. Ultrasound guided aspiration of the lesion was done and 10cc of purulent aspirate was obtained which was sent for culture sensitivity and gene expert. Culture showed a rich growth of Klebsiella pneumoniae while gene expert for mycobacteria was negative. Appropriate antibiotics were started. Thereafter, deroofing and drainage of cyst abscess was done under spinal anesthesia. Histopathology revealed a persistent vitellointestinal duct abnormality. Subsequently, an exploratory laparotomy was done which showed unusual prenatation of vitello intestinal dust. Excison of the vitellointestinal duct remnant and ileo-ileal anastomosis was done. Postoperative period was uneventful and the patient was discharged.

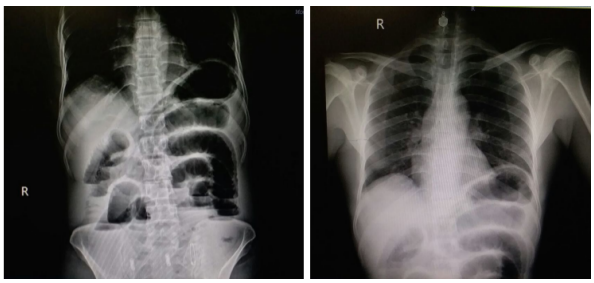




**CASE 2:**
**CASE PRESENTATION:**
A 50-year-old previously healthy male patient presented with a history of vomiting for five days' duration. The vomitus contained clear fluid initially, which later became brownish in colour. He had developed absolute constipation for three days. He had noticed gradual abdominal distension during this period. He had not undergone any abdominal surgeries in the past.

On examination, his abdomen was distended and there was mild tenderness in the lower abdomen. The examination of the respiratory system did not reveal any abnormalities. Biochemical investigations were unremarkable. With the clinical diagnosis of intestinal obstruction, he was referred for imaging studies.

**X-RAY FINDINGS:**




Plain X-ray abdomen was performed and it revealed grossly distended small bowel loops with absent rectal gas (Figure 1). There was no pneumoperitoneum.

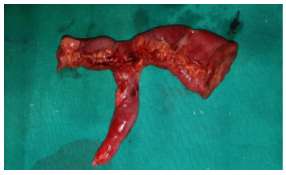
Ultrasound scan of the abdomen revealed fluid filled sluggish peristaltic bowel loops.Dilated bowel 3.7cm & fluid filled. Suggestive of subacute intestinal obstruction Central abdomen was distended and presence of bowel gas hindered evaluating the deeper structures. Pancreas appeared normal. There was no free fluid in the abdomen. Liver, spleen, and both kidneys were normal on ultrasound. The superior mesenteric artery appeared normal at the origin and showed normal colour and spectral flow pattern. The portal vein was normal.

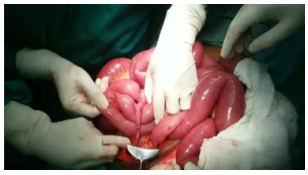
**CT FINDINGS:**
CT abdomen showed grossly dilated jejunal and ileal loops. The appendix was identified separately. There were no fat strandings or fluid collections around the appendix. Distal ileal loops appeared

collapsed. There is an abrupt transition in right iliac fossa with focal short segment 1.5-2cm narrowing in the terminal ileal loop approximately 10-12cm from the ileocecal junction.

**SURGICAL FINDINGS:**

Patient underwent exploratory laparotomy. There was a Meckel's diverticulum with fibrous band extending to the anterior abdominal wall (Figure 5). The size of the diverticulum was approximately 3 cm. The band was identified as the obliterated vitelline duct. The diverticulum was seen about 20 cm proximal to the ileocecal valve, arising from the antimesenteric border of the distal ileum. The small bowel loops were twisting around the band forming a volvulus, causing the small bowel obstruction. The band was resected and the obstruction was relieved & resection and anastamosis of ileum done.





**Discussion:**

The umbilical cord is formed following the fusion of the yolk stalk, containing the vitellointestinal duct, the body stalk, which contains the two umbilical arteries and the umbilical vein and the allantois. Umbilical abnormalities can arise from any retained umbilical cord elements which include the vitellointestinal duct and allantois. They may present clinically with inflammation, discharge, a palpable mass or a hernia, either singly or in combination.

The vitellointestinal duct is the embryonic structure connecting the primary yolk sac to the embryonic midgut, which normally closes completely by week 8 or 9 of gestation[2]. Failure of such closure may result in various lesions: Meckel's diverticulum, umbilicoileal fistula, umbilical sinus, umbilical cyst, umbilical mucosal polyp, or a fibrous cord connecting the ileum to the umbilicus[3]. Meckel's diverticulum is the most common vitellointestinal duct anomaly.

Meckel's diverticulum is the result of incomplete obliteration of the vitelline or omphalomesenteric duct and is the commonest congenital anomaly of the gastrointestinal systems [3]. It is located in the antimesenteric border of the distal ileum and is considered to be a true diverticulum [4]. As stated in the literature, intestinal obstruction secondary to Meckel's diverticulum is difficult to identify preoperatively [1] and this was seen in our patient as well.

Most of the instances, this anomaly is asymptomatic and the lifetime risk of developing complications is between 4% and 6% [5]. Furthermore, the presence of complications in elderly patients is even rare. Thus, developing small bowel obstruction from Meckel's diverticulum in an elderly person, as seen in our patient, is relatively rare. Haemorrhage, obstruction, and inflammation are considered to be the most frequent complications of Meckel's diverticulum and obstruction can be due to trapping of a bowel loop by a mesodiverticular band, a volvulus of the diverticulum around a mesodiverticular band, and intussusception [3, 4]. In our patient, the cause of obstruction was the vitelline band. Although a soft tissue density linear band was seen extending from the distal ileum, its insertion at the anterior abdominal wall was not identified. This could have been the reason for not diagnosing the vitelline band in the CT images.

Small intestine obstruction due to persistent vitelline-intestinal duct is extremely rare, especially in adult patients, and very few cases were reported in the literature [6]. Thus, age of the patient precluded preoperative diagnosis of Meckel's diverticulum and vitelline band. As these were not evident on CT images, definitive diagnosis for the cause of the obstruction was determined during the surgery. Although the cause for the obstruction is not clearly depicted in the CT images, early surgical intervention is vital in the management of these patients, as the cause for the obstruction is mechanical and delay in surgery would result in bowel ischaemia and gangrene.

In our case, a 15 year old male presented with a lower abdominal midline mass which on radiological investigation seemed to be a urachal cyst. A two stage procedure for the management of infected urachal cyst was planned. The first stage comprises of incision and drainage of the cyst and antibiotic cover to reduce the inflammation while the second stage comprises of exploratory laparotomy with dissection of the cyst to its origin and excision with normal cuff of tissue from organ of origin. Histopathology revealed vitellointestinal duct anomaly which was surprisingly contrary to our initial diagnosis. Subsequently, an exploratory laparotomy was performed and the cyst was meticulously dissected. The cyst was confirmed to be originating from the small intestine and had no connection with the bladder. Finally, excision of the cyst and ileo-ileal anastomosis was done.

**CONCLUSION :**

Vitellointestinal duct anomaly is an uncommon entity in adolescence and this anomaly presenting as an large infraumbilical mass is unusual and a large vitellointestinal duct causing intestinal obstruction in adult is a rare presentation. Thus, it was difficult to diagnose clinically. [5]. Ultrasonography and CT scan aid in the diagnosis but, may not be always confirmatory and sometimes misleading as in the present cases. So, a high index of suspicion must be kept for alternative anomalies of the umbilical cord. During surgery meticulous dissection is required and anomalies must be traced to their origin for confirmation. Early surgical intervention is vital in the management of these patients, as the cause for the obstruction is mechanical and delay in surgery would result in bowel ischaemia and gangrene.

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