Case study

PATENT VITELLO-INTESTINAL DUCT AND PATENT URACHUS : A CASE REPORT

ABSTRACT:

INTRODUCTION: A wide variety of anomalies may occur as a result of the vitellointestinal duct (VID) failing to obliterate completely. These anomalies occur in approximately 2% of the population and may remain silent throughout life or may present incidentally with an intra-abdominal complication. Complete patency of vitello-intestinal duct is the rarest of all the anomalies of VID.

CASE PRESENTATION:

8 day old male presented with septicemia,abdominal distension,not passing stool since 1day and stool leaking from abdominal stump.

CONCLUSION:

Patent VID should always be considered in the differential diagnosis of any case presenting with granulomatous umbilical lesion.

Key words: granuloma; intestinal duct; vitellointestinal duct**.**

INTRODUCTION:

Newborns and infants often present with a moist umbilicus which can be associated with various abnormalities from simple granulomas to persistent urachus. Discharge from umbilicus is a very common presentation and umbilical granuloma is the commonest differential diagnosis in such patients.Umbilical granuloma represents granulation tissue yet to epithelise. It is reddish in colour and bleed minimally when irritated by trauma. They are treated with cauterisation with 75% Silver Nitrate. If a granuloma fails to respond to such cauterisation, alternative diagnosis must be considered.Umbilical granuloma is commonly managed by chemical or electric cauterisation. Parents are often the first to notice this abnormality and see it as a pinkish mass around the umbilicus or a persistent serous discharge around the umbilicus soon after birth.When the lesion fails to respond to this treatment, patient should be further investigated for alternate diagnosis. Patent vitello-intestinal duct (VID) should be ruled out in such patients to avoid catastrophy.In 2% of cases, persistence of various portions of VID gives rise to a spectrum of congenital anomalies like sinus, cyst, fistula, band and diverticulum. Meckel's diverticulum, vitelline cyst, vitelline ligament and umbilical sinus represent incomplete obliteration of the VID and are the most common forms of presentation.Patent VID is a result of complete failure of obliteration of this duct. The duct may remain patent throughout its course, producing an enterocutaneous fistula between the distal small intestine and the umbilicus. When a persistent serous, feculent or bilious drainage are identified at the umbilicus, it is suggestive of a patent VID with fistulous communication with the umbilicus.Treatment of patent VIDs requires surgical excision of the duct, with or without a segment of the small bowel,to obliterate the connection.

Reconstruction of the umbilicus is then performed.

PATIENT PRESENTATION:

A single/8day old/full term/38week/male child/birth wt.2.15kg/clear liquor/NVD/no maternal morbidity.

Patient presented with septicemia,abdominal distension,not passing stool since 1day and stool leaking from abdominal stump.
Patient had history of lethargy on day 2 of life.

Patient had passed stool on 1st and 2nd day of life and not passed stool then after
On day 15 of life pt has protrusion of bowel through the umblical stump.

CLINICAL FINDINGS:

His vitals were
Heart rate:138/min,RR:68/min,Temperature:36.5c,Spo2:86% on RA and 93% on O2 by nasal prong
Local Examination: PA: soft ,distended pinkish umblical mass+ with greenish discharge from umblical stump.

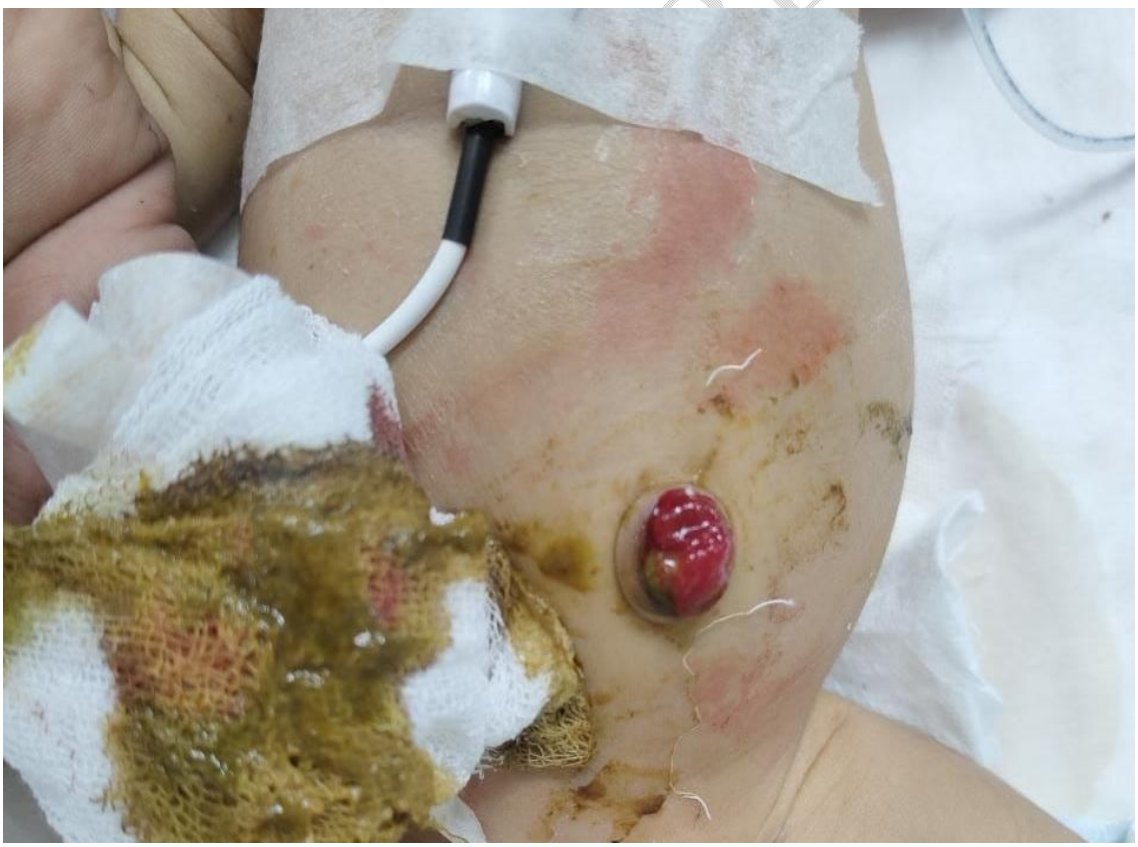


Fig. 1. soft ,distended pinkish umblical mass with greenish discharge from umblical stump.

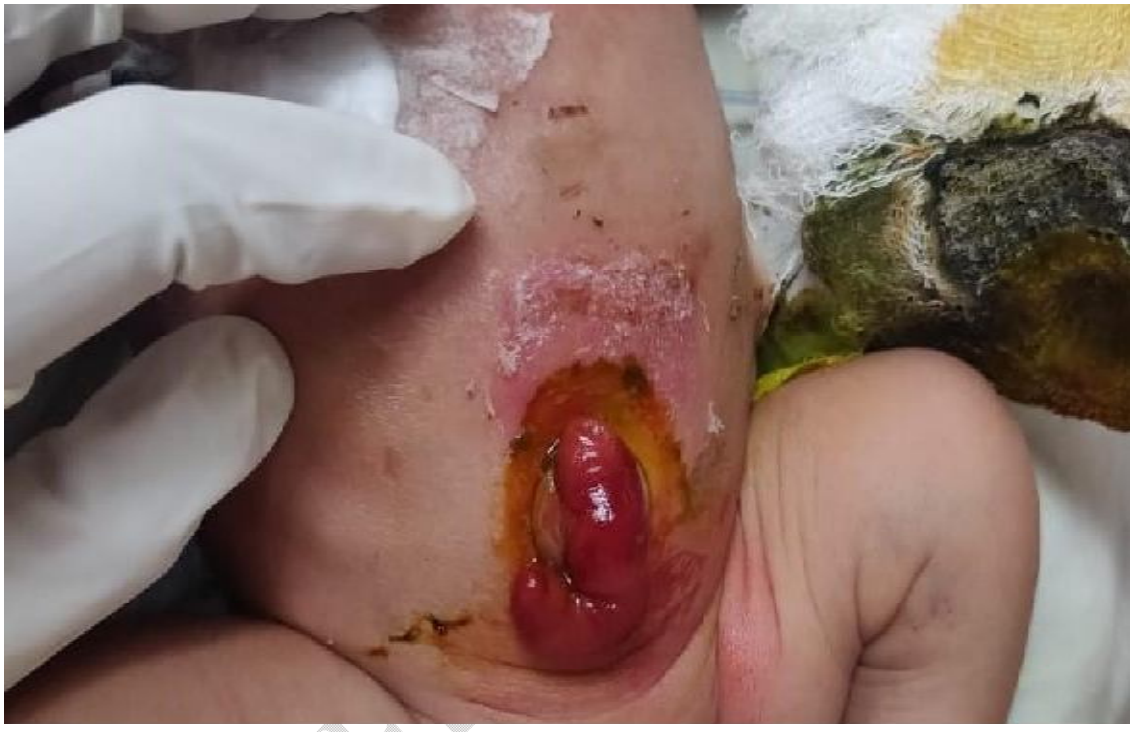


Fig.2 .

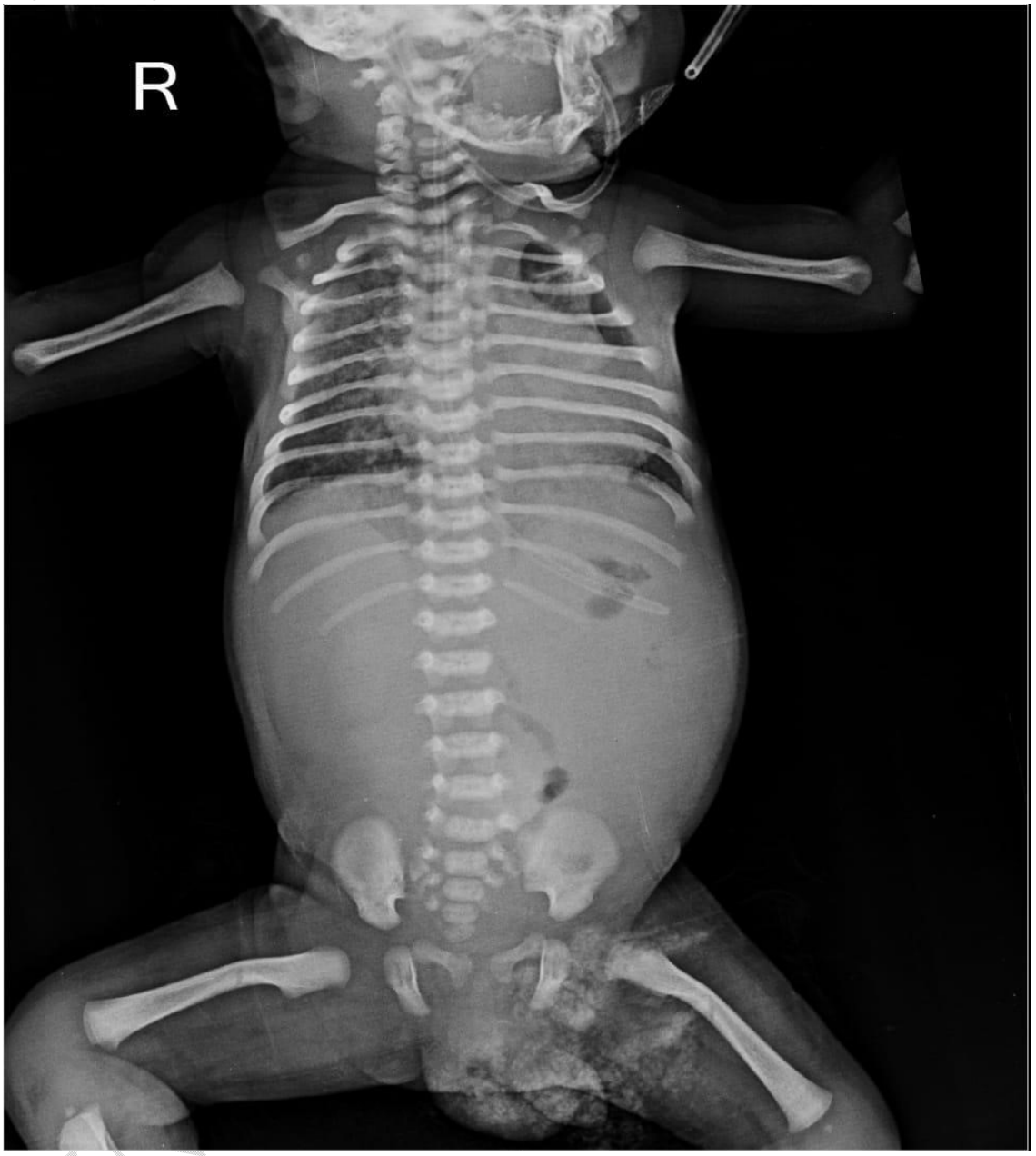
Operative condition

INVESTIGATIONS:

Basic routine blood investigations including the total WBC count, Hemoglobin, serum creatinine and bilirubin were done

Hb:15.2	Na+:133
TC:14800	K+: 4.5
PLC:21000	Urea:79
PT:13	Creat:1.04
INR:1.03	CRP:140

Fig. 3. X-Ray Chest AP view



USG Abdo Pelvis:
Absent Left kidney and mild free fluid in interbowel space.

THERAPEUTIC INTERVENTION:
Initially the patient was treated for septicemia with Injectable Antibiotics.

Operative intervention was postponed due to low platelet count and altered coagulation profile.
After multiple Platelets,FFP,PCV transfusions the pt's platelet count and coagulation profile has normalised and the patient was taken for surgery.
An Emergency Exploratory Laparotomy with resection of Vitello-Intestinal Duct with ileo ileal anastomosis was done.
A patent urachus was also found and repaired.

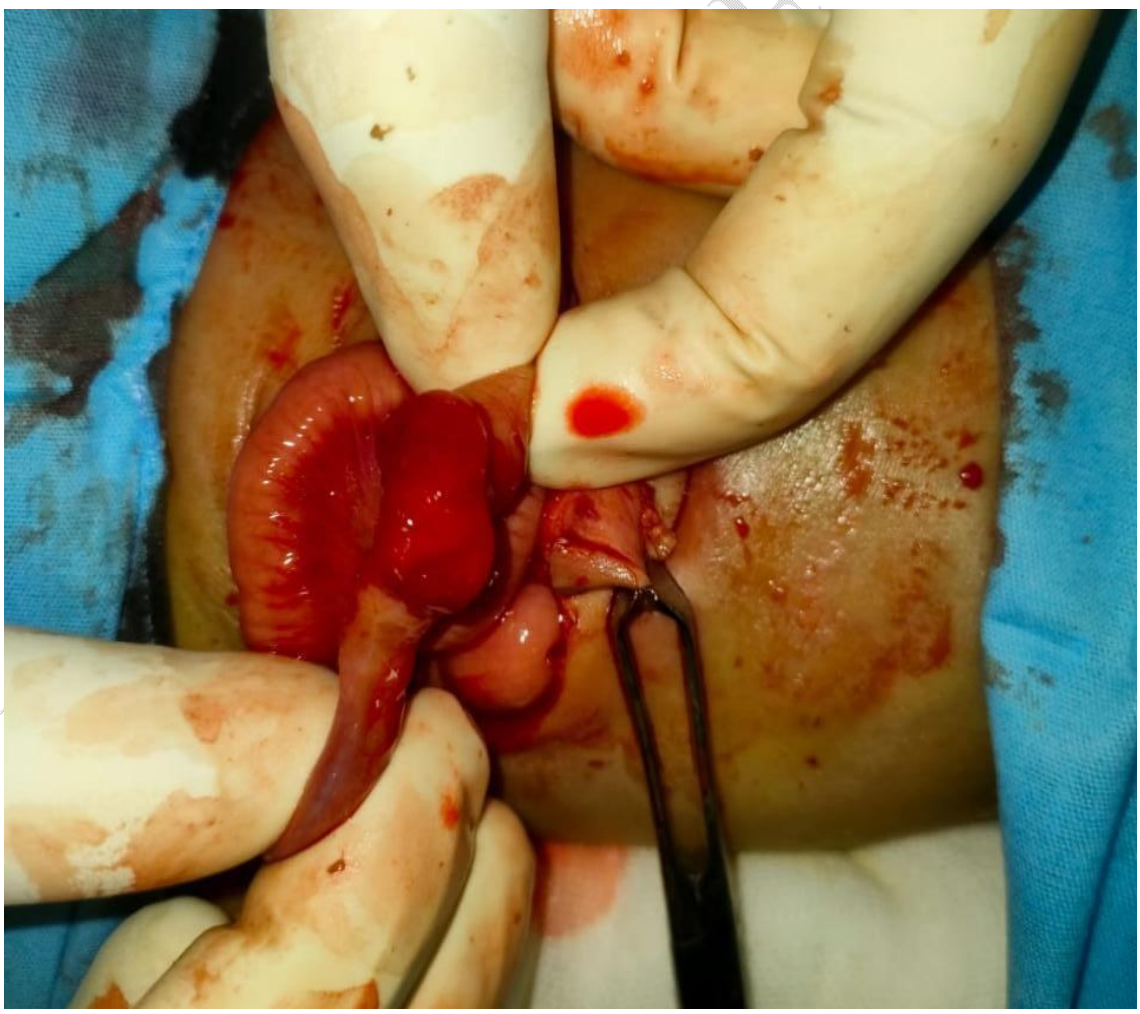


Fig. 4. Laparotomy with resection of Vitello-Intestinal Duct with ileo ileal anastomosis

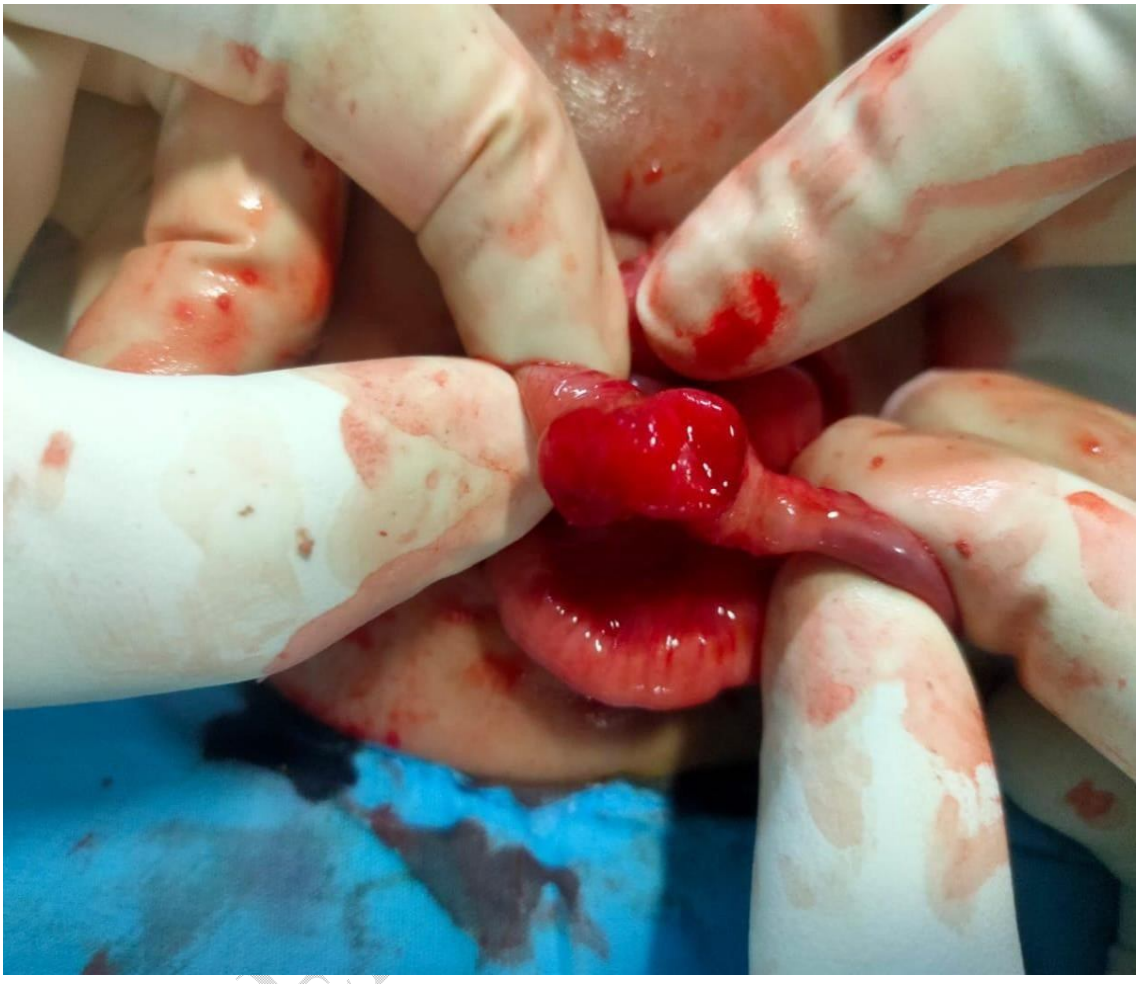


Fig. 5 A patent urachus

FOLLOWUP AND OUTCOME:

No wound discharge/dehiscence/seroma formation or any other immediate post-operative complications were noted and patient was discharged on post operative day 5.

DISCUSSION:

At around third week of embryonic life, a communication exists between the embryonic gut and the yolk-sac which narrows into a tube called the VID, also called the omphalomesenteric duct (OMD). It usually gets obliterated by the end of the seventh week.Patent VID is a result of complete failure of obliteration of this duct. The duct may remain patent throughout its course, producing an enterocutaneous fistula between the distal small intestine and the umbilicus.
It is the rarest form among VID anomalies seen either in neonates or in infants with the incidence of 0.0063–0.067%.
Exact etiology of incomplete obliteration is unknown. A patent VID can present as continued discharging umbilical sinus, umbilical nodule or polyp.If the discharge is persistently more and if it is bilious or yellowish in colour, then there may be associated cellulitis, which may progress to necrotising fascitis or sepsis.Patent VID is similar in presentation like umbilical granulomas which are benign lesions.Rarely granulomas need surgical removal.Ultrasound can be used to diagnose a suspected VID by identifying their relationship to and their continuity with the umbilicus and the urinary bladder. It also helps to prevent unnecessary surgical exploration and may guide for further management.The clinical diagnosis of this anomaly is sometimes simple and straight forward when fecal discharge is seen. Sometimes, fistulogram via the VID helps in confirming the diagnosis.It is recommended that early surgical resection is the management. Its complications include omphalitis, bleeding from the protruded intestinal mucosa, prolapse and strangulation of the intestine and the tendency of malignancy. Surgery involves laparotomy to resect the connection to the intestine through a transverse infraumbilical incision, a transverse supraumbilical incision, a wide elliptic incision, or a laterally or vertically extended incision.

CONCLUSION:

Patent VID should always be considered in the differential diagnosis of any case presenting with granulomatous umbilical lesion. Umbilical granuloma is common which responds well to silver nitrate but one should always consider other anomaly when it fails to respond. Therefore, careful examination of umbilicus is always necessary before treatment. Trans-umbilical resection and umbilicoplasty gives an excellent cosmetic result to patent VID.

CONSENT:

Consent has been taken from the patient's parents.

CONFLICT OF INTREST:

There are no conflict of interests to be declared.

REFERENCES:

1. Agrawal S, Menon A. Patent vitellointestinal duct. BMJ Case Rep. 2010. DOI:10.1136/bcr.12.2009.2594
2. Zafer Y, Yigit S, Turken A. Patent omphalomesenteric duct. Turk J Med Sci. 2000; 30:83–85.
3. Rao PL, Mitra SK, Pathak IC. Patent vitello intestinal duct. Indian J Pediatr. 1979;46:215. DOI:10.1007/ BF02898231.
4. 4. Frolov P, Alali J, Klein MD. Clinical risk factors for gastroschisis and omphalocele in humans: a review of the literature. Pediatr Surg Int. 2010;26:1135-48. DOI: 10.1007/s00383-010-2701-7
5. Piparsaliya S, Joshi M, Rajput N. Patent vitellointestinal duct: A close differential diagnosis of umbilical granuloma: A case re- port and review of literature. Surgical Science. 2011;2:134-6. DOI: 10.4236/ss.2011.23027
6. Khati NJ, Enquist EG, Javitt MC. Imaging of the umbilicus and periumbilical region. Radiographics. 1998; 18:413-31.
DOI: 10.1148/radiographics.18.2.9536487
7. Maxwell D, Hariri N, Coleman KC. A case report of a patent omphalomesenteric duct presenting with meconium discharge from the umbilicus. Ann Clin Case Rep. 2016;1:2016;1022.
8. Zea MI, Chana RS, Anees A. Inverted ileal prolapse through patent vitellointestinal duct: a case report. Internet J PediatrNeonatol. 2009;10:2. DOI: https://doi.org/10.5580/28dc
9. Hasegawa T, Sakurai T, Monta O, Tazuke Y, Ueda S, Iwasaki Y, et al. Transumbilical resection and umbilical plasty for patent omphalomesenteric duct. Pediatr Surg Int. 1998;13:180-1. DOI: https://doi.org/10.1007/s003830050282
10. Lassen PM, Harris MJ, Kearse WS, Argueso LR. Laparoscopic management of incidentally noted omphalomesenteric mesenteric duct remnant. J Endourol. 8:49-51. DOI: 10.1089/end.1994.8.49.