



SONOGRAPHIC AND MAGNETIC RESONANCE IMAGES EVALUATION OF VITELLOINTESTINAL DUCT (VID)

Paediatric

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KEYWORDS

History:

20 -days old male baby presented with vomiting and poor weight gain with partial intestinal obstruction. There was a flower like pink, prolapsing lesion at his umbilicus with umbilical discharge. There was no history of fever.

Ultrasonography (USG) examination was carried out followed by magnetic resonance imaging (MRI) abdomen to confirm the diagnosis. The child had been contemplated for transumbilical exploration, resection and anastomosis.

USG and MRI images are given below:

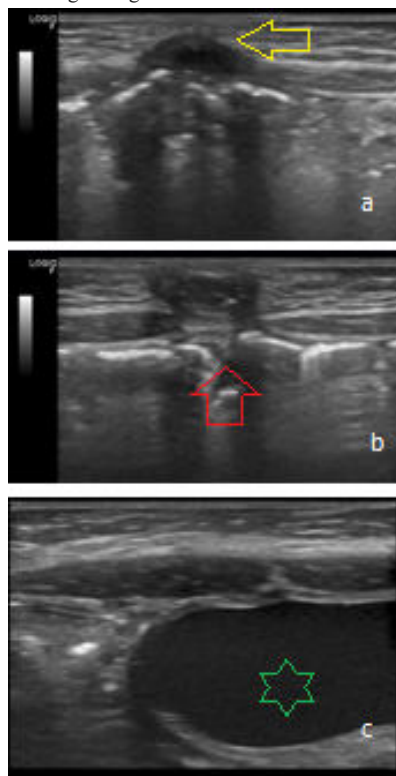


Figure 1. Ultrasonography images (USG) in transverse plain with 7.5 MHz linear probe. a) hypo- to anechoic midline bulge seen in the umbilical region at the site of abdominal wall defect (yellow arrow). b) clear abnormality is visualised in slightly deeper plane (red arrow). c) dilated loop is seen still in deeper plane in the abdomen (green star).

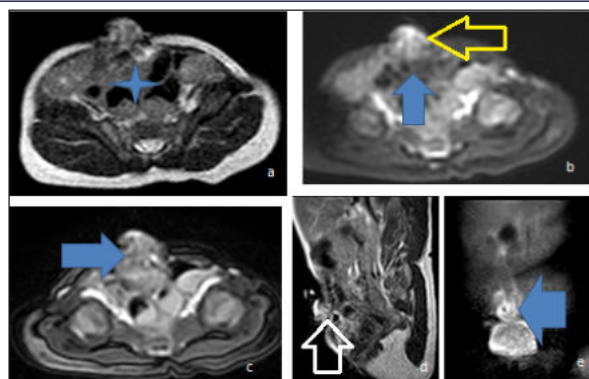


Figure 2. MRI abdomen of the neonate. a) axial T2WI shows prolapsing gut contents (blue star). b) T2WI with fat suppressed sequence shows hyperintense protruding VIT (yellow arrow) and gut loops within abdomen (blue arrow). c) Fast Field Echo (FFE) axial section shows structures in line with the outer flower like mass (horizontal blue arrow). d) T2WI sagittal section shows the wall defect and out pouching contents (upwards white arrow). e) T2WI coronal section shows hyperintense rounded lesion depicting PVIT (horizontal blue arrow).

DESCRIPTION

Vitellointestinal duct (VID) is also called as omphalomesenteric duct which is long narrow tube which joins the yolk sac to the fetal midgut. This disappears during fifth fertilisation week corresponding to ninth gestational week. There can be many anomalies in different forms in the process of obliteration. It is called as prolapsed VIT (PVIT) if seen after birth at the umbilical site [1]. The overall incidence is 2% in neonates but in comparison 0.0063-0.067% in infants [2]. There is arrangements of various layers in such a way that mucosa is exposed outside as shown in diagrammatic presentation (Figure 3)

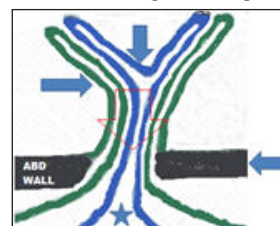


Figure 3. Diagrammatic presentation of PVIT. There is defect (inverted red arrow) in abdominal wall (left horizontal blue arrow) through which serosal layer (right horizontal blue arrow) and internal mucosal layer (inverted blue arrow) are emerging.

The diagnosis is very important as the management differs both in patent VIT and discharging sinus. Ultrasonography is the most suitable diagnostic modality for the earliest diagnosis because of its inherent advantages for the pediatric population which is without any radiation hazards. Though this is not superior to laparoscopy but with the help of MRI the diagnosis can be made near to the completion.[3,4]. This can lead to intestinal obstruction in later life [5]. The imaging modalities like USG and MRI play a pivot role in diagnosis, management and further follow up of the cases of PVIT.

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