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VERY RARE COMBINATION OF PATENT VITELLOINTESTINAL DUCT WITH PATENT URACHUS

General Surgery

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ABSTRACT

Introduction- The vitelline duct is the embryological narrow channel connecting the yolk sac with the intestine. During the foetal life, vitelline duct tends to obliterates itself till to disappear. The partial failure of this obliteration can lead to the development of a duct, a ligament, or a diverticulum known as a Meckel's diverticulum. A Patent omphalomesenteric duct occurs because of the complete lack of vitelline duct.[3] The urachus is an embryological remnant of the allantois. Between the fourth and fifth month of gestation, the foetal bladder tends to descend gradually and its apical portion creates the urachus. The urachus obliterates itself, becoming the median umbilical ligament. Its persistence after intrauterine life can manifest as urachal remnants. A patent urachus is because of complete lack of obliteration of urachus [1,3]. The incidence of these anomalies PU was 1-2 per 10000 while PVD is 1 in 5000 to 8000 deliveries [1,3,5]. The association of both anomalies is very rare [7]. **Case discussion-** A 12-years-old male presented with complaints of pain in abdomen, multiple episodes of vomiting. Patient was tachycardiac with tenderness in right iliac fossa with palpable lump with ultrasonography suggestive of perforated appendix with lump formation and was managed conservatively and asked for interval appendicectomy with CECT abdomen. CECT was suggestive of normal and compressible appendix with infected urachal cyst. But after 4weeks patient had similar complaints hence posted for emergency operation with McBurney's incision not by midline incision to avoid injury to urachal cyst. Intra operative findings-1) patent Vitello intestinal duct 2) patent urachus 3)15cc pus discharge near umbilical end of urachus 4) normal appendix and small bowel. Resection of Vitello intestinal duct and urachus with ileoileal anastomosis done and specimen sent for histopathology which was suggestive of patent vitello intestinal duct with changes of gangrene. **Conclusion-** The Patent Vitello intestinal duct with patent urachus is very rarely seen in combination and its diagnosis may be missed preoperatively and should be kept as a possibility in patients with patent urachus with or without infection.

KEYWORDS

Vitelline duct, patent Vitello, patent urachus, surgery

INTRODUCTION

The vitelline duct is the embryological narrow channel connecting the yolk sac with the intestine. During the foetal life, vitelline duct tends to obliterates itself till to disappear. The partial failure of this obliteration can lead to the development of a duct, a ligament, or a diverticulum known as a Meckel's diverticulum. A Patent omphalomesenteric duct occurs because of the complete lack of vitelline duct.

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Case Report

A 12-years-old male presented with complaints of pain in abdomen, multiple episodes of vomiting. Patient was tachycardiac with tenderness in right iliac fossa with palpable lump.first ultrasonography was suggestive of perforated appendix with lump formation and was managed conservatively and asked for follow up after 6weeks for interval appendicectomy with CECT abdomen.

CECT was suggestive of relatively well defined peripherally enhancing thick-walled collection with few air foci within in noted in umbilical region along the course of urachus measuring 1.5x3.4x2.1cm with significant surrounding fat stranding-infected urachal cyst, appears adherent to umbilicus. Appendix measures 4mm noted in RIF-normal

But after 4 weeks patient presented with surgery casualty with similar complaints and repeat USG by senior was suggestive of infected urachal cyst with serosa involvement of ileal bowel loops.

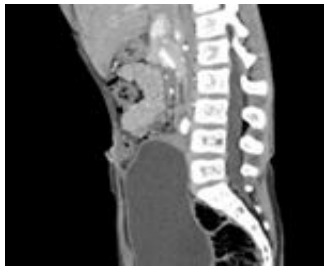

Figure No.1 Sagittal view CT abdomen

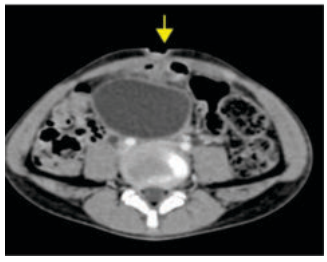

Figure No. 2 Axial view CT abdomen

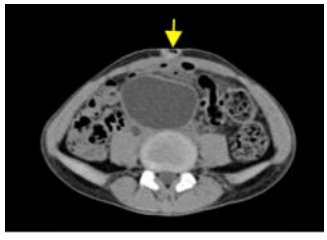

Figure No.3 Axial view CT abdomen

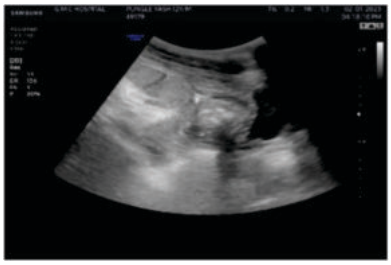

Figure No.4 USG Image

Due to severe symptoms patient posted for emergency operation with McBurney's incision not by midline incision to avoid injury to urachal cyst. Intra operative findings-

1) patent Vitello intestinal duct
2) patent urachus
3) 15cc pus discharge near umbilical end of urachus
4) normal appendix and small bowel.

Resection of ileal segment with Vitello intestinal duct and urachus with ileoileal anastomosis done and specimen sent for histopathology.

Figure No.7 Patent vitelloinstinal duct

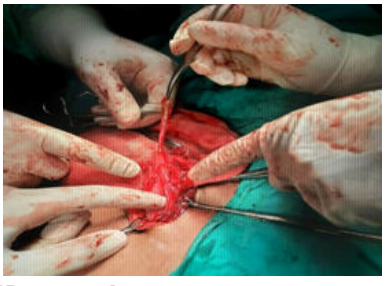

Figure No.5 Patent urachus

The Histopathological report of section showing patent Vitello intestinal duct with changes of gangrene.

Figure No.6 Intra op image

Patient was postoperatively stable, passed stools on pod 6 without any complications and he was discharged on postoperative day 12 after removal of all sutures and with reports.

DISCUSSION

Partial or total failure of the obliteration of urachus gives rise to various anomalies, which can be diagnosed both in childhood than in adulthood. The incidence of these anomalies was one to two in 10000 deliveries[3,5].URs can manifest as PU, urachal cysts, urachal sinus, and bladder diverticulum. Omphalo–mesenteric duct remnants are the most common anomalies of the gastrointestinal tract, often symptomatic. These anomalies may range from POMD to the most common Meckel's diverticulum. Omphalo–mesenteric duct malformations may become symptomatic at any age and common symptoms include abdominal pain, intestinal bleeding, intestinal obstruction, umbilical drainage, and umbilical hernia.

Nowadays, as a first attempt, the diagnosis of URs is made on the basis of US. Nevertheless, computed tomography is often the preferred method for a definitive diagnosis as reported by Widni et al,[8] affirming that the US in the diagnosis of URs lacks accuracy in distinguishing true negatives from false positives [3].In this case first US was suggestive of perforated appendix and second expert US and CT-infected urachal cyst with serosal involvement.

In the literature, there are many studies on the diagnosis and treatment of URs and omphalo–mesenteric duct remnants. The association of a PU and a POMD in children is rarely reported [7]**.** In our review of the paediatric literature, we found only eleven cases [3]. Nevertheless, in none of these patients was the possible association with PU and POMD suspected but was only evidenced during the surgical excision [3].Whenever a remnant of the urachus or omphalomesenteric duct is causing symptoms, the preferred treatment is total excision of one or both strúctures with closure of the dome of the bladder and/or the antimesenteric border of the ileum[4].

In retrospect this combination of anomalies was not detected on USG hence Our Patient underwent emergency operation with McBurney's incision not by midline incision to avoid injury to urachal cyst. The Resection of ileal segment with Vitello intestinal duct and urachus with ileoileal anastomosis was done. Specimen sent for HPE suggestive of patent vitello intestinal duct with changes of gangrene.

CONCLUSION

The Patent Vitello intestinal duct with patent urachus is very rarely seen in combination and its diagnosis may be missed preoperatively and should be kept as a possibility in patients with patent urachus with or without infection to avoid serious complications.

This case demonstrates,

a) The rarity of association of patent Vitello intestinal duct and patent urachus.
b) The pre-operative diagnosis is very difficult.
c) This combination of anomalies should be proceeded with excision of both remnants surgically.

Disclosure:

No portion of the manuscript, including images, contains patient-identifiable information.

Conflict of Interests:

The authors declare that there is no conflict of interests regarding the publication of this paper.

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