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Case Report

Peritonitis secondary to infected urachal sinus with complicated umbilical hernia

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ABSTRACT

An umbilical hernia is a protrusion of an intra-abdominal organ fully or part of it from an umbilical opening. Umbilical hernia is a common problem encountered in surgical out-patient departments. The urachus is an embryonic tube that connects the upper portion of the bladder to the umbilicus. The urachal canal normally obliterates and forms the median umbilical ligament. When this process fails, four different embryological abnormalities can result: urachal sinus, patent urachus, urachal cyst, vesicourachal diverticulum. The association of urachal sinus and hernia is rare. We present one such case of a 49 year old patient with peritonitis secondary to infected urachal sinus with complicated umbilical hernia.

Keywords: Urachal sinus, Umbilical hernia, Peritonitis

INTRODUCTION

Persistence of an urachal sinus is a rare clinicopathological entity that is prevalent in 1 in 5,000 live births.[1] Its occurrence in adults is even rarer, with a prevalence rate of around 2% of the total reported cases or 2 per 1,00,000 hospitalizations and constitutes a diagnostic challenge. The common clinical manifestations are a purulent umbilical discharge, abdominal pain, and a periumbilical mass.

The association of urachal sinus and hernia is rare and can pose diagnostic dilemmas.

CASE REPORT

We are presenting a case of a 49 year old male patient who presented with complaints of pain abdomen since 5 days, which was constant, and dull aching type, with no aggravating and relieving factors.

Pain was associated with vomiting, non-bilious in nature, containing food particles, and non-blood tinged. There was no history of previous surgeries. Patient had no known comorbidities.

On examination his pulse rate was 110/min, BP was 110/60 mmHg, respiratory rate was 22 cpm and SpO_2 97% at room air

On per abdomen examination, abdomen uniformly distended, umbilicus everted with a swelling of 3×3 cm at the umbilicus with reduced expansile cough impulse. (Figure 1 and 2). Swelling was not reducible. There was diffuse guarding, with sluggish bowel sounds. Rest of the systemic examination was normal.

Blood parameters were within normal limits. USG A+P showed umbilical hernia, defect size 2.2 cm with omentum as herniating content, and with reduced expansile cough impulse.

Figure 1: 3×3 cm umbilical swelling.

Figure 2: 3×3 cm umbilical swelling.

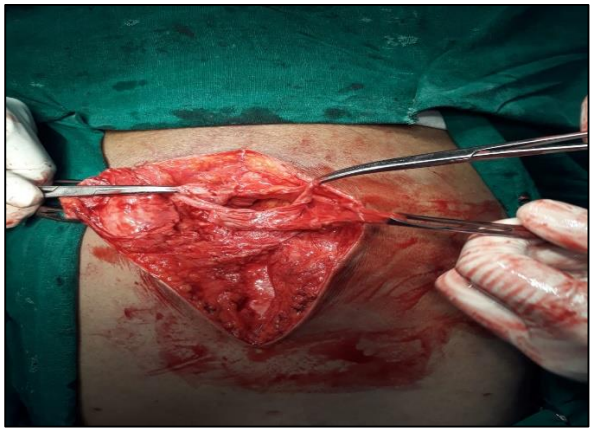

Figure 3: Opened hernia sac with omentum as content.

CT abdomen showed urachal sinus with incarcerated umbilical hernia with minimal ascites and chronic cystitis.

Treatment

Patient underwent emergency exploratory laparotomy. Intra operative findings were anterior abdominal wall abscess, pyoperitoneum, hernia sac with defect of 2×2 cm with omentum as herniating content (Figure 3). There was an infected urachal sinus extending from the umbilicus up to the dome of the urinary bladder (Figure 4). Patient underwent marsupialization of the urachal sinus tract, with herniorraphe, umbilectomy, and peritoneal lavage.

Figure 4: Urachal sinus tract from umbilicus tracking down towards the urinary bladder with anterior abdominal wall abscess.

DISCUSSION

An umbilical hernia is a protrusion of an intra-abdominal organ fully or part of it from an umbilical opening. Umbilical hernia is a common problem encountered in surgical out-patient departments. The content of the hernia in the majority of cases is omentum, preperitoneal fat tissue, omentum, and small intestine.[1]

The abdominal wall at the level of the umbilicus is connected to the bladder during embryonic period by the urachus which is derived from the embryonic allantois. The urachus is an embryonic tube that connects the upper portion of the bladder to the umbilicus.

As the bladder descends into the fetal pelvis, the urachal canal normally obliterates and forms the median umbilical ligament. When this process fails, four different embryological abnormalities can result: urachal sinus, patent urachus, prachal cyst, pesicourachal diverticulum.[2,3]

Most of these abnormalities present in early years of life. It can present in adults but it is rare. Urachus cyst is the most commonly reported abnormality among them.[4,5]

Persistence of an urachal sinus is a rare clinicopathological entity that is prevalent in 1 in 5,000 live births.[6] Its occurrence in adults is even rarer, with a prevalence rate of around 2% of the total reported cases or 2 per 100.000 hospitalizations and constitutes a diagnostic challenge.[7,8] The common clinical manifestations are a purulent umbilical discharge, abdominal pain, and a periumbilical mass.

The association of urachal sinus and hernia is rare and can pose diagnostic dilemmas.[9] Urachal sinuses often remain asymptomatic, being discovered incidentally in instances where they are complicated with a superimposed infection or abscess. Due to their rare occurrence in adults, urachal sinuses are rarely included in the list of differential diagnosis surrounding umbilical pain in adult patients.

Our patient presented with features peritonitis with incarcerated umbilical hernia without any complaints of umbilical discharge which made the diagnosis difficult until confirmed by imaging and surgical finding. This was due to opening of the urachal sinus into the hernia sac, and pus tracking via the sac into the peritoneal cavity.

The suggested management of urachal remnant in adults is requiring a surgical approach with complete resection of the urachal remnant up to the bladder dome.[10,11]

Incomplete resection of the remnant carries risk of recurrence and potential for malignant transformation.[11] For complete resolution of symptoms, en bloc resection of umbilicus was described as the best method for this purpose.[11-13] There is no clear agreement or evidence in regard to the routine resection of the urachal remnant en bloc with a cuff of the bladder.

CONCLUSION

Urachal anomalies in adults are rare and even less common when it is associated with umbilical hernia. So the diagnosis needs to be kept in mind. The diagnosis of this condition clinically is difficult until clearly confirmed by imaging and surgical finding. The suggested management of urachal remnant in adults is requiring a surgical approach with complete resection of the urachal remnant up to the bladder dome.

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