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Omental Torsion: A Rare Cause of Acute Abdomen

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Abstract: Omental torsion is an extremely rare differential diagnosis of acute abdomen. It usually requires surgical intervention. More often it is diagnosed Intraoperative and treatment by resection is current management of choice, But with increasing use of pre-operative imaging this may need to be reconsidered. Preoperative diagnosis by clinical examination alone is almost never possible but increasing use of CT is making it possible to diagnose this preoperatively. We present here an adult male case of primary omental torsion, which was diagnosed preoperatively with classical whirlpool (Swirl Sign) with relevant review of literature.
Keywords: Omentum, Torsion, CT

INTRODUCTION

Omentum is four layered fatty sheet of peritoneum which extends from the greater gastric curvature to surrounding organs with attachments to the diaphragm.

Omental Torsion is a condition in which a pedicle of the omental apron twists on its longer axis to such an extent that its vascularity is compromised [1]. It was first described by Eitel in 1899 as a rare cause of the acute surgical abdomen [2].

Fewer than 250 cases have been described in the literature so far. Omental torsion is seldom a preoperative diagnosis and thus may lead to spontaneous clinical deterioration of the patient [3]. Current choice for diagnosis and management of omental torsion is via Laparoscopy Surgery [4].

CASE REPORT

A 42 yrs. young male was presented with acute right lower quadrant pain in emergency. His vitals were stable. On clinical examination, tenderness was present in Right lower quadrant abdomen, hernia orfices were normal.

Bowel movements were normal. On lab investigation, mildleukocytosis in CBC and RBCs in urine were detected. A presumptive diagnosis of ureteric stone was made and subjected for ultrasound examination.

USG revealed a large calculus in right kidney in renal pelvis with no hydronephrosis and an ill-defined heterogeneous echogenic mass in right iliac fossa likely to be appendicular phlegmon.

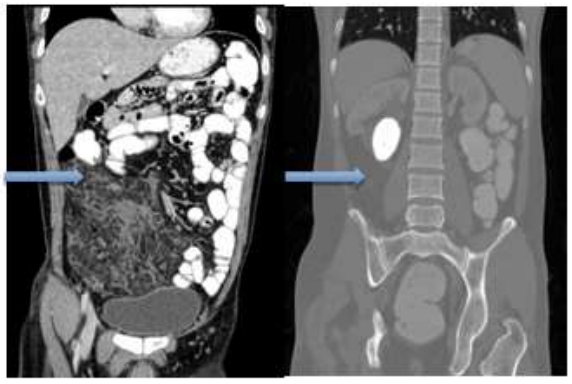

Fig. 1a & 1b: CECT Abdomen Coronal Sections showing (a) large ill-defined fatty mass in right side of abdomen and pelvis displacing the adjacent bowel loops. (Extensive fat stranding in large area of Omentum) (b) Large oval shaped 5 cm calculus in right kidney within its extra renal pelvis with no hydronephrosis

Fig. 2: CECT Abdomen Axial Sections showing concentric linear hyperdensity at apex of fatty mass around a central vessel (whirlpool/swirl sign)

CECT abdomen reveals large ill-defined fatty mass in right side of abdomen and pelvis displacing the adjacent bowel loops (Fig 1a). Concentric linear hperdensity noted at apex of this fatty mass around a central vessel (whirlpool/swirl sign) (Fig 2). Appendix was normal and no ascites noted. A large oval shaped 5 cm calculus was seen in right kidney within its extra renal pelvis with no hydronephrosis (Fig 1b). No other abnormality noted.

The CT imaging appearance of mesenteric twist (swirl sign) was very obvious for omental torsion and was culprit for acute abdomen. The large non obstructive renal calculus was incidental finding.

Patient was successfully managed conservatively with antibiotic and planned for removal of renal calculus.

DISCUSSION

Omental torsion is a rare cause of abdominal pain which presents mainly in the 3rd to 5th decade of life with a marginal male predominance (3:2) [4,5]. The omentum twists around its long axis, clockwise at a pivotal point to such an extent that vascularity is compromised, resulting in omental necrosis.

Omental torsion may be primary or secondary. One third of cases are a result of primary torsion, which presents with no underlying pathology [6]. Factors such as anatomical variations in the omentum and actions that displace the omentum such as trauma, exercise or hyperpersitalsis predispose to torsion. Obesity has also been implemented as a risk factor [7].

Secondary torsion is more common and a result of underlying abdominal pathology (e.g. cysts, adhesions, hernial sacs) [8]. In some cases the omentum may infarct without torsion, which is known as primary idiopathic segmental infarction [5].

Patient with omental torsion presents with constant, non-radiating pain of increasing severity, nausea and vomiting. Clinically patients may have a low grade fever and associated leukocytosis [4] however these findings are nonspecific, making pre-operative diagnosis of omental torsion a challenge.

Imaging investigations such as Ultrasonography and Computed Tomography (CT) are useful and often complementary [9]. On Sonography usually reveals a complex mass consisting of hypoechoic and solid zones but is immensely operator dependent with limited sensitivity due to overlying bowel gas.

On CT, omental torsion is characterized by diffuse streaking in a whirling (Swirl Sign) pattern of fibrous and fatty folds [9]. With increased use of CT, pre-operative diagnosis of omental torsion has increased in frequency leading to conservative management in patients without complications [9].

The current management of choice is laparoscopy to identify and subsequently removing the infarcted section of omentum. Free serosanguineous fluid as a result of hemorrhagic extravasion is a characteristic finding in the peritoneal cavity. Histology findings of hemorrhagic infarction and fat necrosis confirm the diagnosis. Presence of fibrosis is indicative of a longer disease process [3].

Primary omental torsion has a very good prognosis with uneventful post-operative recovery along with minimal morbidity. If left untreated, It results in fibrosis, necrosis and occasional auto amputation and clinical improvement [10]. Prognosis in secondary torsion depends on the underlying pathology.

Common differential diagnosis of omental torsion includes appendicitis, cholecystitis or twisted ovarian cyst [8]. Normal appendix, gallbladder and pelvic cavity make the diagnosis of omental torsion likely.

CONCLUSION

Omental torsion is a rare cause of acute abdomen, that can be accurately diagnosed preoperatively by CT and if uncomplicated can be managed conservatively, thus obviating the need of diagnostic laparoscopy for its diagnosis.

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