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Torsion Of The Greater Omentum Secondary To Inguinal Hernia: A Case Report And Review Of The Literature.

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Summary: Torsion of the greater omentum is a rare cause of acute abdominal pain and is often challenging to diagnose preoperatively. Secondary torsion due to a right inguinal hernia is the most commonly described form. While laparoscopic surgery is the preferred treatment, some authors have reported success with non-operative management. We present a 36 years old patient with omental torsion treated operatively following an unsuccessful attempt at conservative management. Through laparoscopic route, an extensive necrosis of the greater omentum was observed, with associated sero-hematic peritoneal effusion, bowel adhesions, and localized inflammatory response. the omentum-trapped within the right inguinal hernia-was carefully mobilized and found to be completely ischemic with necrotic patches. A complete omentectomy was performed at the level of the transverse colon. The specimen was extracted through an extended 3 cm subumbilical incision. The deep inguinal ring was closed with a continuous suture. The postoperative course was uneventful apart from transient bowel dysfunction, which resolved spontaneously. Hernia repair was delayed for six weeks.

Keywords: Omentum, Torsion, Hernia

1. Introduction

Torsion of the greater omentum is a rare cause of acute abdominal pain and is often challenging to diagnose preoperatively [1]. Secondary torsion due to a right inguinal hernia is the most commonly described form, attributed to the anatomical features of the greater omentum [2]. While laparoscopic surgery is the preferred treatment, some authors have reported success with non-operative management [3]. We present a case of omental torsion treated operatively following an unsuccessful attempt at conservative management.

2. Case Presentation

A 36-year-old man presented to the emergency department 72 hours after the onset of acute right iliac fossa (RIF) pain, accompanied by fever and constipation. He reported no nausea or vomiting. On clinical examination, his vital signs were normal (apyrexia), but localized guarding in the RIF was noted. The right inguinal hernia was reducible.

Laboratory findings revealed leukocytosis (16,000/uL) and an elevated C-reactive protein (CRP) level of 54 mg/L, indicating an inflammatory response. An abdomino-pelvic computed tomography (CT) scan confirmed torsion of the greater omentum without gastrointestinal volvulus and identified a right inguinal hernia. The tip of the twisted omentum was located within the hernia sac. Initial management was conservative, consisting of pain control and close observation.

Three days later, the patient returned with worsening abdominal pain. Though vital signs remained stable, examination revealed contracture of the entire right hemi-abdomen. Laboratory results

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showed a rise in inflammatory markers: CRP increased to 250 mg/L, and leukocytosis worsened to 18,000/uL. A repeat CT scan confirmed persistent omental torsion (Figure 1,2), now associated with right-sided peritoneal effusion and a reactive hydrocele. These findings prompted emergency exploratory laparoscopy.

Intraoperatively, extensive necrosis of the greater omentum was observed (Figure 3), with associated sero-hematic peritoneal effusion, bowel adhesions, and localized inflammatory response. Using fenestrated laparoscopic forceps, the omentum-trapped within the right inguinal hernia-was carefully mobilized and found to be completely ischemic with necrotic patches. A complete omentectomy was performed at the level of the transverse colon. The specimen was extracted through an extended 3 cm subumbilical incision. The deep inguinal ring was closed with a continuous STRATAFIX 3/0 suture. The postoperative course was uneventful apart from transient bowel dysfunction, which resolved spontaneously. Hernia repair was delayed for six weeks.

Figure 1: Right-sided omental torsion with inguinal hernia.

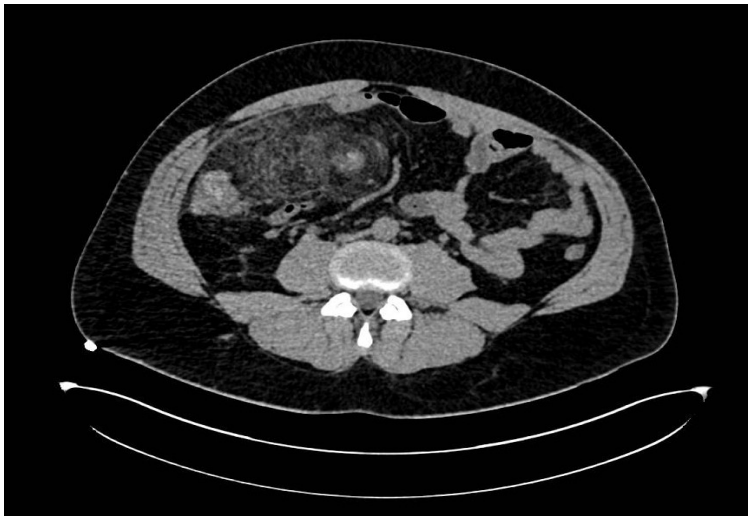

Figure 2: Pre-operative Abdomen CT scan (Whirl sign).

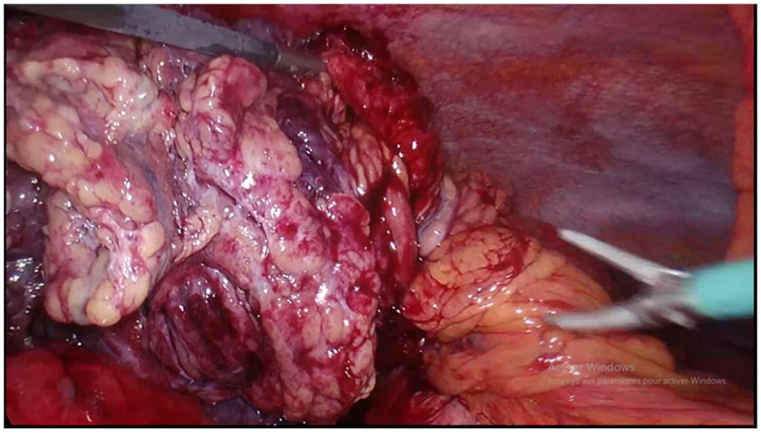

Figure 3: Omental torsion operative view.

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3. Discussion

Torsion of the greater omentum, first described by Eitel in 1899 [4], remains an uncommon cause of acute abdominal pain. Our case involved a healthy, middle-aged male, consistent with existing literature [5-7]. Ha et al. reported a male-to-female ratio of 8:1 [8], and the condition most frequently occurs between ages 30 and 50 [5]. Coincidentally, a similar case was reported by Sapra in a patient of the same age this year [9]. Obesity is a known risk factor, and our patient had a BMI of 31.3 [10-12].

Preoperative diagnosis is notoriously difficult due to the nonspecific clinical presentation, which often mimics appendicitis [8]. however, gastrointestinal symptoms like nausea, vomiting, and anorexia are usually absent in typical omental torsion clinical presentation [9], as was the case with our patient. The progression to generalized right-sided abdominal contracture, despite stable vital signs we observed, further complicated the clinical picture.

Laboratory markers such as elevated white cell count and CRP are common but not universal findings [13-15]. In our patient, both parameters progressively worsened, reinforcing the diagnosis of an ongoing inflammatory process.

Imaging plays a critical role. While ultrasonography is often inconclusive [8,9], CT scanning provides greater diagnostic accuracy. The characteristic findings-fat stranding, increased attenuation of omental fat, and the "whirl sign"-were all evident in our case, aligning with literature that supports CT as the preferred modality for diagnosis [6,16].

Laparoscopy is both diagnostic and therapeutic and is now considered the gold standard for management [4]. Although laparotomy or conversion may occasionally be required [9,13], laparoscopic resection of the necrotic omentum is usually feasible and effective [17,18].

Regarding management, conservative treatment has been described [3,6]. Carrillo et al. reported successful outcomes in 6 of 9 conservatively managed patients [6]. However, in our case, conservative treatment failed, necessitating surgical intervention.

As for the hernia, repair can be performed concurrently or delayed. We opted for laparoscopic closure of the deep inguinal ring during the same operation, with definitive hernia repair postponed by six weeks-a strategy also adopted by Ha et al. [8].

4. Conclusion

Torsion of the greater omentum is an uncommon but important differential diagnosis in patients presenting with acute right lower quadrant pain, especially in the absence of gastrointestinal symptoms. CT scan is pivotal in achieving a preoperative diagnosis. Exploratory laparoscopy remains the cornerstone for both diagnosis and definitive management. Conservative treatment may be considered in selected cases but carries a risk of failure. In cases associated with inguinal hernia, repair may be performed either immediately or delayed, depending on intraoperative findings and the patient's clinical condition.

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