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Original Research Article

Acute Cholecystitis, a Rare Presentation of Epiploic Appendagitis: Case Report and literature Review

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Abstract: Epiploicappendagitis is a rare self-limiting condition that may mimic nearly any acute abdominal condition and results from either torsion or inflammation of an appendix epiploica of the colon. We report a case of epiploicappendagitis of transverse colon presented clinically as acute cholecystitis.
Keywords: Acute cholecystitis, Eepiploicappendagitis.

INTRODUCTION

Epiploicappendagitis is a rare clinical condition. An infarcted appendage of the right colon may mimic cholecystitis or appendicitis [2]. We present a case of transverse colon appendagitis mimicking acute cholecystitis. We also review the literature on diagnosis, radiographic features, and treatment of this often misdiagnosed condition.

CASE REPORT

A 45 year old male presented to the emergency department with right hypochondrial pain of two days duration. He described the pain as of sudden onset and severe in nature initially, but it gradually eased off after few hours and then remained constant. He had no vomiting or change of bowel habits and no urinary symptoms. He denied history of chronic dyspepsia, fat intolerance and jaundice. He was not known to have any medical disease or surgery before.

On examination he was obese (BMI 38.4%) not febrile with temperature of 37.4c. His blood pressure was (120/70 mmHg), pulse was 84/minute and respiratory rate was 22/min. His abdomen was slightly distended with marked tenderness rigidity and rebound tenderness over the right hypochondrium. Murphy's sign was positive. His WBCC was 6.8 $x10^9$ per L, Hemoglobin was (13 g/dl). Urea and electrolytes, liver function test and serum amylase were within normal limits. The abdominal ultrasound showed a distended normal looking gall bladder without evidence of gallstones (figure 1). It also showed a hyper echoic mass localized under the right costal margin just lateral to the right rectus muscle in direct contact with peritoneal aspect of the anterior abdominal wall (figure 2).

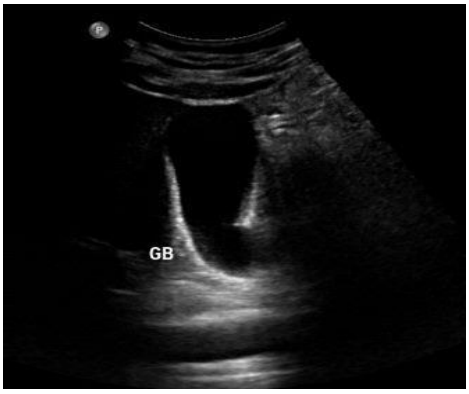

Fig-1:Showing a distended normal looking gall bladder without evidence of gallstones

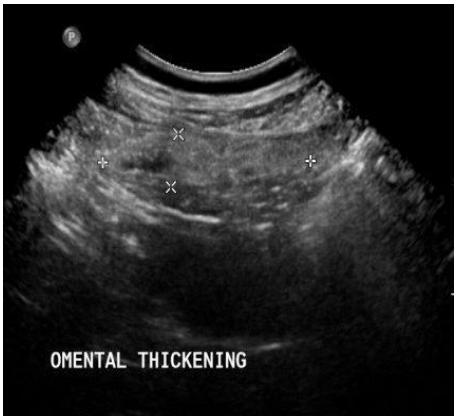

Fig-2: Showing a hyper echoic mass localized under the right costal margin just lateral to the right rectus muscle in direct contact with peritoneal aspect of the anterior abdominal wall

The CT scan showed about 5.5 x 5.2cm well defined fatty lesion related to the proximal transverse colon anteriorly and in contact with the posterior aspect of the anterior abdominal wall, with hypedense rim and central dot-sign, associated with stranding of the surrounding fat. These features are highly suggestive epiploicappendagitis(Figure 3)

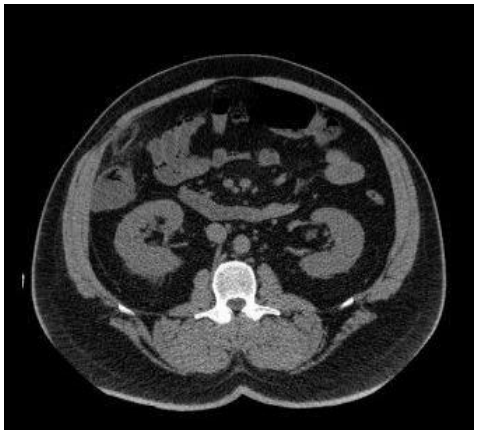

Fig-3: Showing an oval shape 5.5 x 5.2cm well defined fatty lesion related to the proximal transverse colon anteriorly with hyperdense rim and central dot-sign highly suggestive epiploic appendagitis.

The MRI showed (figure 4a , 4b and 4c)show an oval shape fatty lesion with hypointense rim and central dot of decrease signal seen anterior to proximal transverse colon.on fat saturation images , the lesion becomes suppressed, while the peripheral rim becomes hyper intense (figure 4c).

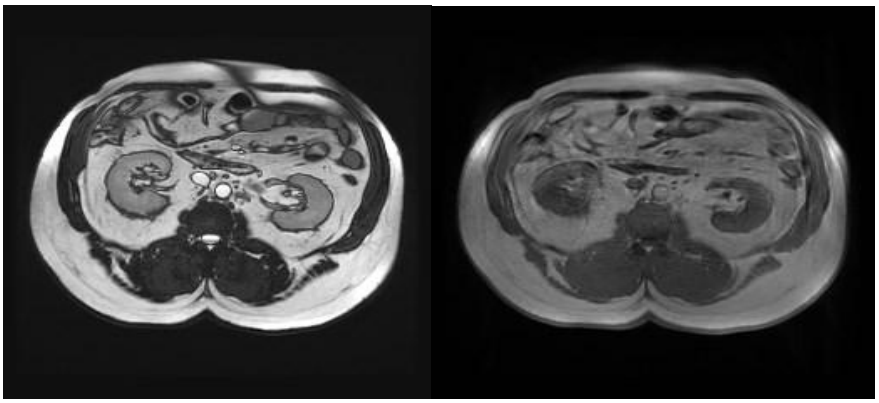

Fig-4 a & 4b: T2 and T1 Weighted images of abdomen showing an oval shape fatty lesion with hypointense rim and central dot of decrease signal seen anterior to proximal transverse colon.

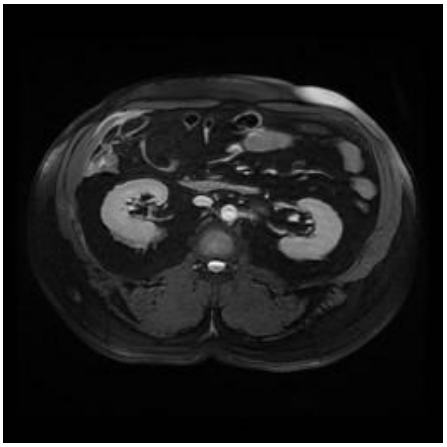

Fig-4 c: T2 Fat Saturation image, the lesion becomes suppressed, while the peripheral rim becomes hyper intense.

DISCUSSION

Epiploic appendages are fat pouches that arise from the serosal surface of the colon from the cecum to the rectosimoid junction to which they are attached by a vascular stalk. Composed of adipose tissue and blood vessels, the appendages typically have a length of 0.5-5 cm.[3-5].

Each epiploic appendix is supplied by one or two small end arteries branching from the long rectal vessels of the colon and is drained by a tortuous vein passing through its narrow pedicle. Their limited blood supply, together with their peduncle shape and excessive mobility, make them prone to spontaneous torsion and ischemic or hemorrhagic infarction[6].

The function of these appendages is not exactly known. A multitude of theories have been proposed, such as potential bacteriostatic properties, a role in colonic absorption, or a flexible cushion to protect the blood supply when the colon is collapsed [7, 8]. They occur in the rectosigmoid junction (57%), ileocecal region (26%), ascending colon (9%), transverse colon (6%), and descending colon (2%) [9-10]. Epiploic appendages are enlarged in obese patients, which increase their risk for Torsion [11].

The term epiploic appendagitis was introduced in 1956 by Lynn et al. [12] and the CT features of this condition were initially described in 1986 by Danielson et al. [13]. Primary acute epiploicappendagitis is usually a result of torsion, with ischemic changes in the epiploic appendix, but it also can be caused by thrombosis, without any evidence of torsion [3].

The condition most commonly manifests in the 4th to 5th decades of life, predominantly in men [14, 15].

As Shvetzov stated referring to the torsion of epiploic appendicitis, "It occurs under the mask of other emergencies [16]." Epiploic appendagitis may mimic nearly any acute abdominal condition [1].

Due to similarities in presentation, this entity is often confused with diverticulitis and appendicitis [17]. In addition, the differential diagnosis might include ovarian torsion, ovarian cyst rupture, ectopic pregnancy, Crohn's disease, acute cholecystitis, intra-abdominal abscess and enteric infections [18].

Epiploicappedagitis presenting with RUQ pain, mimicking acute cholecystitis, is rarely reported in the literature although epiploic appendages distribute throughout the colon [19].

Localized, nonmigratory pain in association with lack of vomiting, fever or toxicity is the sine qua none of appendagitis [20]. The presentation usually involves abrupt onset of focal abdominal pain which worsens with cough or stretching of the abdominal wall muscles [21, 22].

Although most patients with acute epiploic appendagitis do not report any change in their bowel habits, a minority experience constipation or diarrhea [10]. The clinical appearance of the patients with epiploicappendagitis is not consistent with appendicitis or diverticulitis of the same duration, as they generally look well [1].

Abdulzhavadov describes "two new characteristic symptoms of this disease": 1) pain appearing or intensifying when the abdomen is thrust forward and in mild tapping on the healthy side of the anterior abdominal wall with the fingertips, and 2) intensification of pain when the skin fold on the abdomen is pulled upward. This, of course, needs to be confirmed by others [23, 24].

The condition is self-limiting and rarely may it result in adhesion, bowel obstruction, intussusception, intraperitoneal loose body, peritonitis, and/or abscess formation [5].

Laboratory tests are also non-specific and may reveal only a mild increase in the white blood cell count and rarely a shift to the left [25, 26]. Diagnosis of the condition is rarely made preoperatively owing to lack of specific symptoms [27].

However, due to increased use of imaging tools in patients with acute abdominal symptoms, epiploicappendagitis is much more frequently diagnosed than before [28].

A correct diagnosis of epiploicappendagitis with imaging procedures enables conservative and successful outpatient management of the condition and avoids unnecessary surgical intervention and associated additional health-care costs [29].

Normal epiploic appendages are not visible on ultrasound-unless the colon is surrounded by extraluminal fluid or inflammation is present [5, 30, 31].

The ultrasound findings of acute appendangitis include a solid, hyperechoic, non-compressible, ovoid mass at the area of maximum tenderness [5, 11]. The mass is often surrounded by a thin hypoechoic rim believed to represent thickening of the serosa of the appendage and the adjacent parietal peritoneum [11].There may also be an absence of vascularity on color Doppler ultrasonography [32].The absence of a Doppler signal because of a lack of blood flow as a result of torsion in epiploicappendagitis is a useful finding to differentiate epiploicappendagitis from acute diverticulitis [33].

An abdominal computed tomography scan has a significant role in accurate diagnosis of epiploicappendagitis before surgery to avoid unnecessary surgical interventions [34]. Epiploicappendagitis appears on CT scan as ovoid mass surrounded by hyperdenserim (hyperattenuating ring sign) represents the inflamed visceral peritoneal covering of the epiploic appendage and is diagnostic of primary epiploicappendagitis. There is also a central, hyperattenuating, ill-defined round area ("central dot sign") or a longitudinal linear area corresponds to engorged or thrombosed central vessels or central areas of hemorrhage or fibrosis. Although the presence of a central dot or linear area is useful for diagnosis, their absence does not exclude the diagnosis of acute epiploicappendicitis [35-38].

Although the clinical symptoms are solved in two weeks for most patients, the CT findings could be perpetuated until six months [31].

Although MRI is not frequently performed for diagnosis ofepiploic appendicitis, MRI features are also characteristic [39].

Magnetic resonance findings include an ovoid fat intensity with a central dot on T1 and T2 weighted images, which possess an enhancing rim with gadolinium [40].

Surgeons should be aware of this self-limiting disease that mimics many other intra-abdominal acute conditions. The fact that the condition is self-limiting, preoperative diagnosis may safe patient from unnecessary surgical exploration. The increasing use of laparoscopy for appendicectomy and as a tool for initial exploration of abdominal sepsis has helped in diagnosing this type of rare condition, preventing the morbidity of a laparotomy for patients [26]. However, some authors advocate laparoscopic management of the condition even if the diagnosis was made preoperatively to avoid possible complications of the condition [23, 41].

When the diagnosis is made by open or laparoscopic exploration, the necrotic appendage should be removed by ligation of its vascular pedicle and its peritonization with seromuscular sutures [16].

Summary

Epiploicappendagitis is a rare self-limiting condition that may mimic nearly any acute abdominal condition. Diagnosis depends on high index of suspicious and early radiological examination of suspected cases. As the condition is self-limiting preoperative diagnosis is important to decrease chances of morbidity and mortality associated with invasive interventions and prolonged hospitalization.

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