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Idiopathic chylous peritonitis mimicking acute appendicitis. A case report

We report an uncommon case of idiopathic acute chylous peritonitis mimicking an acute appendicitis in a 30-year-old female patient with a 2-day history of abdominal pain, nausea and vomiting. Chylous ascites is a rare form of ascites characterized by the presence of a milky fluid rich in triglycerides. It occurs as a result of a damage to the lymphatic system due to trauma or other benign and malignant pathologies. Although the most common clinical presentation is progressive painless abdominal distension, less frequently it can cause acute abdomen symptoms. The management is based on identifying and treating the underlying pathology. Aspiration of the fluid and drainage are the only therapy required if a clinically diagnosis cannot be made. Surgical laparoscopic exploration is necessary to make a diagnosis and to treat effectively acute abdomen cases.In the absence of a significant determining pathology, we talk about idiopathic chylous peritonitis.

KEY WORDS: Chylous ascites, peritonitis, laparoscopy

Introduction

Chylous ascites is a rare clinical condition characterized by the presence of ascitic fluid in the peritoneal cavity with a milky or creamy appearance due to a high concentration of triglycerides [1]. It occurs as a result of damage to the lymphatic system due to multiple causes, including traumatic events, abdominal malignancy, cirrhosis, peritoneal infections, inflammatory and congenital conditions, and other disorders [2,3]. Although the main symptom is a progressive painless abdominal distension, diagnosis remains difficult because of its clinical manifestations are non-specific [1,2]. The occurrence of acute abdomen signs is less frequent; in particular, the pain with signs of peritonism is due to the sudden and massive lymphatic extravasation, rarely described in the literature [1,2,4]. In this cases, acute chylous peritonitis is usually confused with other abdominal conditions such as acute appendicitis, organ perforation, ovarian torsion and pelvic inflammatory disease [5-9]. The management is based on identifying and treating the underlying cause; therefore, aspiration of the fluid and drainage are the only therapy required if a clinically diagnosis cannot be made [7,10,11]. Surgical laparoscopic exploration is necessary to make a diagnosis and to treat effectively acute abdomen cases [2,4]. In the absence of a significant determining pathology, we talk about idiopathic chylous peritonitis [10]. Only few cases have been described in recent years [10]. We report an uncommon case of idiopathic acute chylous peritonitis mimicking an acute appendicitis.

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Case Report

A 30-year-old female patient came to the Emergency Room with a 2-day history of abdominal pain, nausea and vomiting. Initially, the pain was generalized in the lower abdomen, but later increased in severity and it became localized the right iliac region. She had no fever, no alterations of the intestinal habits, and she had regular menses. There was no history of trauma event, and nothing relevant in her past medical history. Physical examination revealed only a distended abdomen and pain in the right lower quadrant with early peritonism signs. The gynecological examination was unremarkable. Blood analysis showed only leukocytosis (16.44x103/mmc) and increased inflammation indexes (PCR 7.9 mg/dl).

Abdominal ultrasound detected the presence of liquid effusion in the lower right quadrant and in the pelvic area with an appendix not viewable. Based on the above clinical and laboratory findings, an acute appendicitis was suspected, and the patient was admitted for an emergency laparoscopic appendectomy.

Introducing the laparoscope into peritoneum, a milky ascitic effusion was observed in the pelvic excavation, in the Douglas pouch, and in the right parietocolic shower (Fig. 1A). A sample of the liquid was taken for biochemical, microbiological and cytological tests. The peritoneal cavity was irrigated and aspirated in order to conduct an accurate exploration. There were no visible alterations of the splanchnic organs and peritoneum. The appendix was thickened and edematous without signs of abscess. The distal ileal loop was painted of milky ascitic fluid (Fig. 1B). A diagnosis of chylous ascites was made and a prophylactic appendectomy was performed. Peritoneal washing was repeated without detecting sources of chylous leakage or signs of lymphatic injury. A laminar drainage was placed before closing the laparoscopic accesses.

The postoperative course has been regular, with progressive clarification of the drained liquid. The patient was discharged on the third postoperative day after removal of the drainage.

Five months after laparoscopic treatment, abdominal ultrasound was unremarkable, excepts for a 2.5 cm left adnexal cyst, with no signs of malignancy. Currently, the patient is asymptomatic.

The pathological examination of the appendix showed no relevant alterations. At gross examination, we observed brown serosa, soft and thickened wall.

Histologically, the appendix was edematous and hyperemic (Fig. 1C), the wall showed aspects of fat involution and fibrotic deposits, with a subserous space filled of inflammatory cells in an amorphous background (Fig. 1D). The ascitic fluid was bacteriologically sterile, and the biochemical examination detected only an increase in triglycerides. Cytological examination revealed a population of lymphocytes and neutrophils, histiocytes and activated mesothelial cells (Fig. 1E), similar to that observed in the subserous space of the appendix.

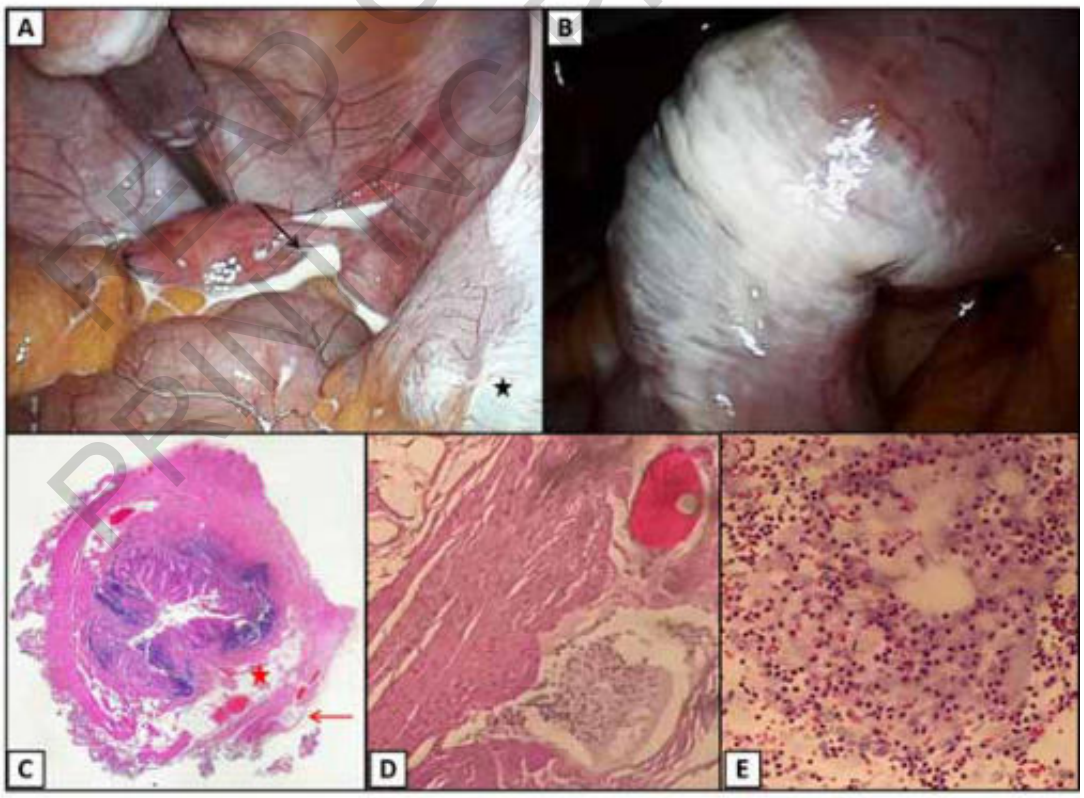

Fig. 1

Discussion

Chylous ascites is rare and it is characterized by the accumulation of milky fluid rich in triglycerides into the peritoneal cavity [1-2]. The causes are related to an injury to the lymphatic system and can be roughly classified in traumatic and non-traumatic ones. Surgical complications prevail among the traumatic causes; mostly, those following surgery for abdominal aortic aneurysm or retroperitoneal lymph node dissection [1-2], and most rarely, after laparoscopic living donor nephrectomy as reported by Gagliano et al. [12]. In the review by Steinemann et al., the most frequent non-traumatic causes in adults were tumors (25%), cirrhosis (16%) and mycobacterium infection (15%). Therefore, in the case of chylous ascites findings in the absence of trauma, the existence of underlying causes must be excluded [1]. In pediatric age, instead, primary intestinal lymphangiectasia, a congenital condition characterized by the presence of dilated lymphatic vessels in the submucosa of the intestine, is responsible for most cases of chylous ascites [13].

Chronic chylous ascites is generally asymptomatic. The occurrence of abdominal pain is due to the sudden chylous effusion into peritoneum [1-2]. Patients with atraumatic chylous ascites present with abdominal pain in 14% of cases [1]. Since the chylous fluid is not irritating to the peritoneum, the pain would result from distension of the mesenteric serous and retroperitoneum [1-2]. Pain-associated symptoms such as anorexia, nausea and vomiting are reported in cases of acute chylous ascites [2,4,14]. Symptoms are often localized in the right iliac fossa and probably this is due to the prevalent collection of chylous fluid in the right paracolic shower, simulating an acute appendicitis [5-7]. In all cases the appendix was normal and exploration of the abdominal cavity did not find the cause of the chylous effusion [6-7].

Laboratory tests and X-ray have relevant limitations in the diagnosis of chylous ascites, differently from CT scan of the abdomen that can identify pathological lymph nodes, inflammatory or neoplastic masses, and locate concomitant fluid accumulation [2]. An accurate analysis of ascitic fluid, including the level of triglycerides (to confirm chylous ascites), the microbiological and cytological examination are primarily required in absence of trauma history [1]; blood samples could be useful on the suspicious of liver damage or systemic inflammatory status [1-2].

Whenever possible, the cause of chylous loss should be treated. Surgical laparoscopic exploration is necessary in patients with acute abdomen to make a diagnosis and to treat effectively the cause [2-4]. When a specific cause is not evident, further dissections are not convenient at the time of surgery, since spontaneous closure of the loss and complete healing are the norm [7].

Conclusions

We have described an uncommon case of acute chylous peritonitis simulating an acute appendicitis, with no identifiable causes. Laparoscopy with drainage of the ascitic fluid led to complete recovery of the patient. This case shows the effectiveness of laparoscopic surgery in the diagnosis and treatment of acute abdominal pathologies of unknown origin.

Riassunto

Descriviamo un caso insolito di peritonite chilosa acuta idiopatica che simula un'appendicite acuta in una paziente di 30 anni con una storia di dolore addominale, nausea e vomitoda 2 giorni. L'ascite chilosa è una rara forma di ascite ed è caratterizzata dalla presenza di un fluido lattiginoso ricco di trigliceridi. Si verifica a seguito di un danno al sistema linfatico a causa di traumi o altre patologie benigne e maligne. Sebbene la presentazione clinica più comune sia la distensione addominale progressiva senza dolore, meno frequentemente può causare sintomi da addome acuto. La gestione si basa sull'identificazione e il trattamento della patologia sottostante. L'aspirazione del fluido e il drenaggio sono l'unica terapia necessaria, se non è possibile effettuare una diagnosi clinica. L'esplorazione laparoscopica chirurgica è necessaria per fare una diagnosi e trattare efficacemente i casi di addome acuto. In assenza di una significativa patologia determinante il versamento chiloso, parliamo di peritonite chilosa idiopatica. Nel caso descritto, il trattamento laparoscopico con drenaggio del liquido ascitico ha portato al completo recupero della paziente, a dimostrazione dell'efficacia della chirurgia laparoscopica nella diagnosi e nel trattamento di patologie addominali acute di origine sconosciuta.

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