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Case Report

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Laparoscopic Management: Spontaneous Chyloperitoneum in Pregnancy

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Abstract

Chylous ascites, chyloperitoneum or chyloabdomen are all synonyms for the intra-abdominal collection of lymphatic fluid of different etiologies, with the characteristic finding of whitish, hazy, milk-like intraabdominal fluid. It is a rare event and, is frequently idiopathic, with diagnosis usually made at laparotomy, whenever signs of acute peritonitis are present. Peritoneal toilette and drainage are the only treatment required, and the prognosis is excellent. Chyloperitoneum in pregnancy is extremely rare, de-scribed in only a few reports in the literature [1-5]. Pregnancy used to be considered a relative contraindication for laparoscopic procedures; despite this, the use of laparoscopy for the treatment of acute disease in pregnant women has been progressively increased. We present a laparoscopic management and resolution of an acute peritonitis in a patient who was initially suspected of having a complicated acute appendicitis and was finally diagnosed with chyloperitoneum. The objective of this paper is to report a rare entity and insist on the possibility of laparoscopic management in these cases.

Keywords: Chylous Ascites; Chylous Peritonitis; Laparoscop-ic Surgery; Pregnancy

Case

A 37-year-old woman in the second trimester of pregnancy was referred to the accident and emergency department with generalised continuous abdominal pain with less than 24 hours' evolution with no associated symptoms. Her pregnancy at this time was clinically uncomplicated and she underwent normal routine follow-up. Her family history was unremarkable. Her past medical history includes the miscarriage of her first pregnancy, two years earlier. Significant abdominal tenderness and diffuse guarding suggested acute peritonitis.

Blood chemistry showed the following values: leukocyte count 25.83 x 10_3; haemoglobin 12 g/dl; platelets 258 x 10_3; neutrophils 88.8%; lymphocytes 5.1%; Na_+ 132 mmol/l; K_+ 3.9 mmol/l; urea 17.83 mg/dl; creatinine 0.38 mg/dl; bilirubin 0.60 mg/dl; amylase 76 U/l; aspartate aminotransferase 17 U/l; alanine aminotransferase 14 U/l. Gynaecological ultrasound examination did not show pathological findings. The increasing tenderness associated with a diffuse guarding (that pointed to a suspected acute perforation of a hollow viscus) called for an immediate laparos-copy instead of a preoperative CT scan. The patient was placed in a left lateral decubitus position to improve venous return. The height of the fundus of the uterus was determined prior to trocar inser-tion. A pneumoperitoneum was performed using a Veress needle located at left hypochondrium with an intraabdominal pressure of less than10 mmHg to minimise the potential effects of CO_2 on the pregnant patient and foetus. A total of three trocars (one optical and two operating trocars) were placed. At exploration there was neither evidence of stomach, duodenum or colon perforation nor of the other most common surgical causes of peritonitis (cholecys-titis, appendicitis, intestinal ischemia or diverticulitis), but there was a large accumulation of milky fluid that filled the peritoneal cavity associated with distension of the small bowel (Figure 1).

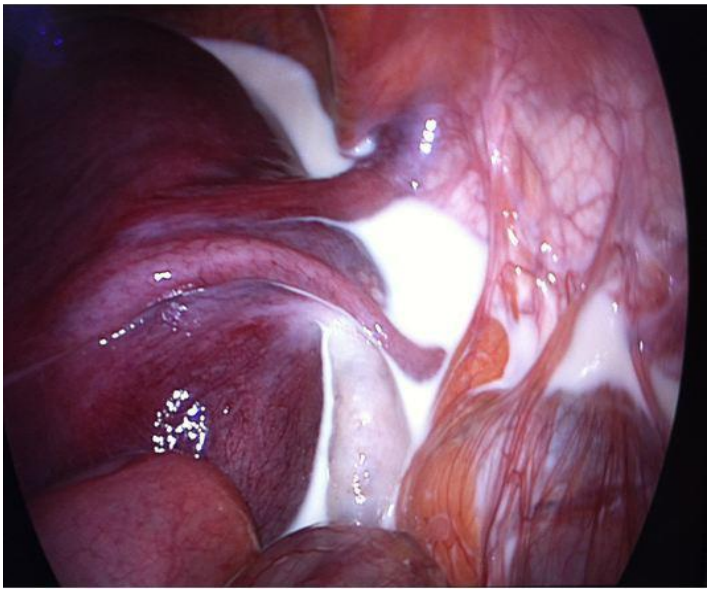

Figure 1: Laparoscopic view of chyloperitoneum in pelvis.

Samples of the chylous liquid were taken for biochemical, bacteriological and cytological examination. On gross examination, no abnormalities could be detected in any of the solid or hol-low abdominal viscera, and an appendectomy was performed in the same surgical act. There were no dilated lymphatics, and no source of leakage was found. A thorough peritoneal lavage with a warm saline was performed, and drain was positioned.

The peritoneal fluid was bacteriologically sterile, and the biochemical analysis revealed elevated values of triglycerides (1800 mg/dl). The histological examination of the appendix did not provide evidence of any inflammation. A thoracic and abdominal MRI was performed during the postoperative period and no abdominal or thoracic abnormalities were diagnosed. The postoperative pe-riod was uneventful: the drain was removed on the 6th postopera-tive day (with the presence of clear peritoneal fluid) and the patient was discharged on the 7th postoperative day with a high-protein, low fat diet supplemented with medium-chain triglycerides for 3 weeks. No problems arose during the rest of the pregnancy and there was no evidence of malignancy or any recurrence of chylous ascites. The patient is doing well two years after the pregnancy.

Discussion

Chylous ascites is characterised by lymphatic fluid leaking into the abdominal cavity and has a prevalence of about 1/187,000 admissions to hospital care [5,7]; when the output of chyle oc-curs rapidly, an acute peritoneal reaction called acute chylous peritonitis can be observed. The gut lymphatics carry converted long-chain triglycerides from the intestine to the vascular system via the thoracic collecting duct. The inflow through this duct may vary from 50 to 200 ml/h; the flow markedly increases with inges-tion of fatty meals. The causes of chylous ascites can be roughly categorised into traumatic and atraumatic (congenital, neoplasic, inflammatory vasculitic, autoimmune lesions and idiopathic). In daily clinical practice, surgeons are most often faced with chy-lous ascites secondary to a surgical procedure or abdominal trauma [8]. Less frequently, they come into contact with patients suffering from chylous ascites unrelated to surgery or trauma. Some authors suspect that chyle extravasation can occur after heavy fatty meals with consequent overload of the lymphatic channels. In the present case there was no evidence of malignancies no trauma was report-ed, and the patient negated fatty meals. To date, only a few cases of chyloperitoneum during pregnancy have been reported, and all of them showed underlying disorders. The first involved complica-tions during pregnancy, one with intestinal volvulus and others as a consequence of pancreatitis [1-3]. Other cases were discovered during caesarean sections [4,5]. In our case, the patient had not suffered abdominal trauma and no other cause was found during surgery, so it could be considered idiopathic. Free chyle is relative-ly non-irritating to the serosal surface, but pain may result from the stretching of the retroperitoneum and the mesenteric serosa [8].

In the present case, free chyle in the peritoneal cavity plus tenderness and rebound indicates that chyle irritated the perito-neum to account for the symptoms of an acute abdomen, thus mimicking a complicated acute appendicitis, noticeable from the onset of symptoms. In patients with symptoms of an acute ab-dominal process, immediate exploration is mandatory. This case indicates the role of laparoscopy for surgical problems during pregnancy. Diagnostic laparoscopy provides direct visualisation of intra-abdominal organs. While there is insufficient data avail-able to recommend this as a primary diagnostic approach in preg-nant patients, it is a reasonable alternative to radiologic imaging. The benefits of operative exploration are the avoidance of ionising radiation, diagnostic accuracy and the ability to treat a surgical problem at the time of diagnosis. Furthermore, it has been shown that a laparoscopy can be performed safely during any trimester of pregnancy with minimal morbidity for the foetus and mother. There are many advantages of laparoscopy in the pregnant patient including: decreased foetal respiratory depression due to dimin-ished postoperative narcotic requirements, lower risk of wound complications, diminished postoperative maternal hypoventila-tion, shorter hospital stays and decreased risk of thromboembolic events. The improved visualisation in laparoscopy may reduce the risk of uterine irritability by decreasing the need for uterine ma-nipulation. Decreased uterine irritability results in lower rates of miscarriage and preterm delivery. In conclusion, there are many reports in literature describing the role of laparoscopy for surgical problems during pregnancy; but (to the best of our Knowledge) there have been no cases of spontaneous chylous-ascites-related peritonitis in pregnant women managed completely laparoscopi-cally. In our experience, this approach is a viable alternative for the diagnosis and treatment of these patients.

Even if a vast majority of chylous effusions shall heal spontaneously, early and full treatment has to be initiated in order to reduce morbidity and mortality associated with this condition. Adapted oral diet is to be introduced to reduce lymph flow. Low lipid, high medium-chain triglycerides alimentation is the first measure to implement. Total parenteral nutrition is to be reserved to failures of oral diet. In addition, paracentesis is indicated to improve patient comfort, reduce intra-adbominal pressure and secondary renal dysfunction. Somatostatin analogues have been demonstrated to be effective in reducing lymphorragia and may be proposed prior to consider the surgical approach. Direct lymph vessels ligation can be indicated for large lymph vessels leakage demonstrated by radiologic techniques and when medical treatment has failed. Peritoneo-venous shunt becomes a less common technique in refractory chylous effusion because of its high morbidity

Chylous ascites is the accumulation of triglyceride-rich, free, milk-like peritoneal fluid due to the presence of intestinal lymph in the abdominal cavity. Primary chylous disorders are most frequent-ly caused by congenital lymphatic dysplasias. Secondary chylous disorders are usyally caused by neoplasia, trauma, inflammation, or abdominal surgery. In general, any source of lymph vessel obstruction or leakage can potentially cause chylous effusion in the peritoneal or retroperitoneal cavities. Secondary chylous disorders appear in about 7.4% of oncology patients who undergo complex abdominal surgey. Primary chylous ascities is quite uncommon. Its true incidence has never been well established, although it can be estimated at about one in 20,000 admissions to a large university-based hospital. Primary chylous ascites can be congenital or may appear later in life, depending on the patient's genetic complexity and environmental effects. A few studies of the laparoscopic treatment of chylous ascites have been reported, but they only include secondary pathologies resulting from surgical operations, such as urologic procedures (retroperitoneal lymphadenectomy), Nissen operation, and laparoscopic presacral neurectomy treatment.

References

1. Kondratev NP (1980) Small intestine volvulus complicated by acute chylous ascites in pregnant women. Khirurgiia (Mosk) 2: 90-91.
2. Liu CJ, Yen CL, Chang JJ, Lee TS, Fan KM (2001) Chylous ascites in acute pancreatitis during pregnancy. Chang Gung Med J 24: 324-328.
3. Chuang SC, Lee KT, Wang SN, Kuo KK, Chen JS (2006) Hypertriglyceridemia associated acute pancreatits with chylous ascites in preg-nancy. J Formos Med Assoc 105: 583-587.
4. Habek D, Habek JC, Vujic B (2005) Nontraumatic chyloperitoneum in pregnancy. Eur J Obstet Gynecol Reprod Biol 122: 245-247.
5. Babic I, Tulbah M, Ghourab S (2012) Spontaneous resolution of chylous ascitis following delivery: a case report. Journal of Medical Case Report 6: 187.
6. Almakdisi T, Massoud S, Makidisi G (2005) Lymphomas and chylous ascitis: Review of the literature. Oncologist 10: 632-635.
7. Cárdenas A and Chopra S (2002) Chylous Ascites. Am J Gastroenterol 97: 1896-1900.
8. Vettoretto N, Odeh M, Romessis M, Pettinatto G, Taglietti L, et al. (2008) Acute abdomen from chylous peritonitis: A Surgical Diagnosis. Case report and literature review. Eur Surg Res 41: 54-57.