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Research Letter

Management of pancreatic ectopic pregnancy

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Abdominal pregnancy is a rare and high-risk complication that ultimately requires laparotomy. Atrash et al estimated that there are 10.9 abdominal pregnancies per 100,000 births, and 9.2 abdominal pregnancies per 1000 ectopic pregnancies [1]. The most commonly reported sites of primary peritoneal implantation are the pouch of Douglas and the posterior uterine wall [2–4]. At present, we would like to report a case of pancreatic ectopic pregnancy in which laparoscopic resection of the pancreatic body and tail, and splenectomy were performed successfully without any complications.

A 30-year-old, gravida 1, para 0, Chinese woman visited our unit complaining of epigastric and left abdominal pain. Her last menses was 36 days before she presented to the hospital. No contraception was used. She had no history of Pelvic Inflammatory Disease (PID), no prior Intra Uterine Device (IUD), no use of fertility drugs, and no pelvic surgery. Transvaginal ultrasound on September 12, 2014 demonstrated massive pelvic effusion (deepest point, 38 mm), and no gestational sac was detected in the uterine cavity. Her serum β-human chorionic gonadotropin (HCG) level was 2500.09 mIU/mL, amylase was 336.8 U/L and lipase was 1671.4 U/L. Physical examination revealed stable vital signs: blood pressure of 110/70 mmHg and a pulse rate of 88 beats/min. There was no tenderness of the fornices upon vaginal examination. The patient had slight abdominal tenderness and rebound pain. A presumptive diagnosis of ectopic pregnancy complicated with acute pancreatitis was made. Later in our gynecology ward, conservative treatment was done with a single-dose methotrexate (MTX) injection (50 mg/m^2).

However, during the night, without a decrease in serum β-HCG level, a dramatic increase of serum amylase and abdominal tenderness were observed. The hemoglobin and hematocrit levels decreased from 14.3 g/dL and 39.9%, respectively, on admission, to 6.8 g/dL and 20.1%. Owing to acute abdominal pain, abdominal magnetic resonance imaging (MRI) was performed, which revealed a cystic lesion accompanied by ring-enhancement situated immediately beneath and below the body and tail of the pancreas. Surgical treatment was preferred by the patient and her family after discussing the pros and cons of medical and surgical treatment options. After informed consent was obtained, diagnostic laparoscopy was performed, which revealed a 10 cm × 6 cm × 5 cm retroperitoneal hematoma. It was located in the root of the transverse mesocolon, along the subpancreatic space, and adhered tightly to the pancreatic tail and splenic hilum. The hematoma regions were copiously supplied by nutrient vessels. Considering the complex condition, resection of the pancreatic body and tail, and splenectomy were performed by laparoscopy. Grossly, products of conception with placenta were noted, and histologically, an embryo with a gestational sac and chorionic villi were identified. The whole process took 4 hours and the blood loss was ~200 mL. Even so, a laparotomy should also be prepared in case of emergency. Afterwards postoperative pathological analysis confirmed an embryo with gestational sac and chorionic villi (Figure 1). Areas of mucinous cystadenoma were identified on a few sections of surgical specimens (Figure 2). Our patient was discharged home 5 days after surgery, in good condition. She was followed up until her β-HCG serum level was normal.

Abdominal pregnancies are rare. Cases of pancreatic ectopic pregnancy are even rarer. An abdominal pregnancy is a special type of ectopic pregnancy, accounting for ~1% of the total number of ectopic pregnancies. However, abdominal pregnancy in the pancreas is an exceedingly rare occurrence. Only two such cases have been reported previously. The difference was that these two cases followed *in vitro* fertilization/embryo transfer [5,6].

It is hard to diagnose primary pancreatic ectopic pregnancy. The diagnosis is rarely confirmed before surgery. The clinical presentation of pancreatic pregnancy is nonspecific. There are no unique clinical features to differentiate it from ectopic pregnancy complicated with acute pancreatitis. The diagnosis of pancreatic pregnancy is hard to make based on serum levels of β-HCG, progesterone level, concentration of amylase or lipase, and transvaginal ultrasound scan, particularly for nonsimultaneous pancreatic pregnancy. Currently, the most accepted method of diagnosing an abdominal pregnancy is MRI, while ultrasound is

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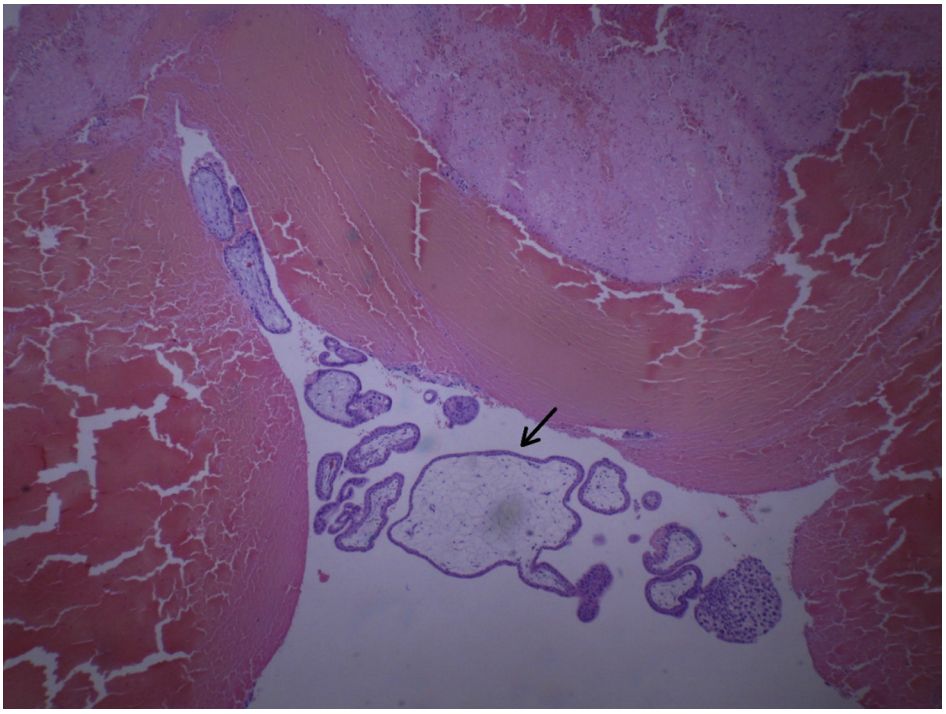

Figure 1. Histological examination revealed blood clots and chorionic villi, as indicated by the arrow.

suitable for screening. Lockhat et al [7] reported that MRI can identify the placenta within the abdomen and the presence of placental adherence. Kitade et al [8] also reported that a splenic pregnancy can be diagnosed relatively easily using imaging techniques such as computed tomography, MRI, and ultrasonography. In the present case, MRI was performed preoperatively, and site of implantation at the pancreatic body and tail was visualized as a cystic lesion accompanied by ring enhancement on MRI. However, inspection of the abdominal organs and tissues in the operating room is the most effective method of diagnosing abdominal pregnancy. Laparoscopy is the gold standard for diagnosis of ectopic pregnancy, including pancreatic pregnancy. Histopathological examination is essential to confirm the diagnosis, with the identification, at least, of chorionic villi in surgical specimens.

With regard to treatment for pancreatic pregnancy, no guidelines are presently available on this topic. Laparoscopy is a diagnostic management and also a therapeutic process.

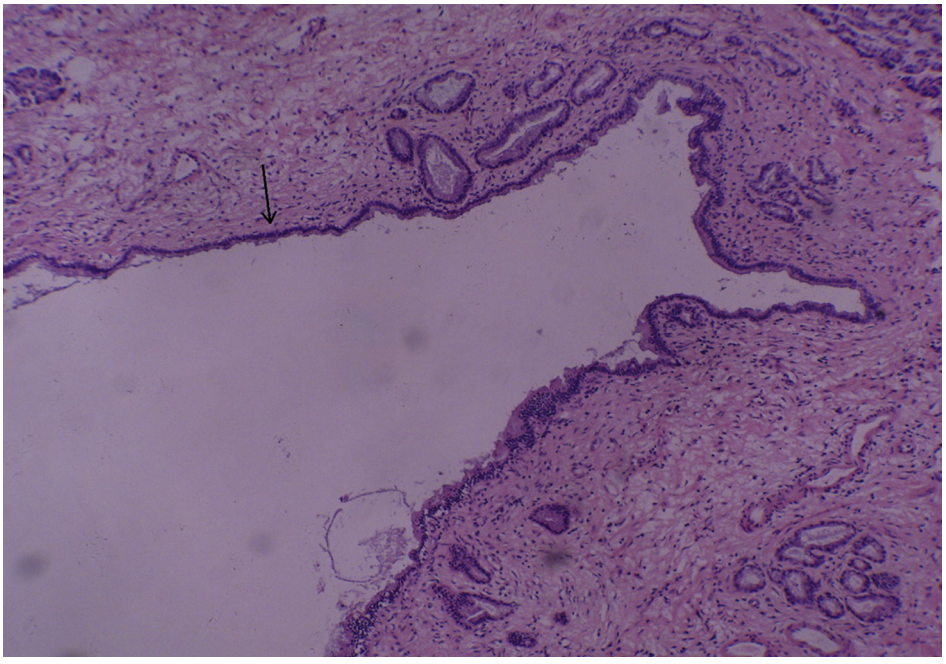

Figure 2. Histological analysis for the mucinous cystadenoma, was lined by the simple columnar epithelium, as indicated by the black arrow.

Otherwise, careful examination of celiac viscera during surgery and close follow-up of the serum β-HCG level are necessary after surgery.

Conflicts of interest

The authors have no conflicts of interest relevant to this article.

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