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Case report

Expectant management for abdominal pregnancy

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ABSTRACT

This is the first English language report describing the expectant management for abdominal pregnancy. The patient was a 31-year-old multiparous woman who was transferred to our hospital on suspicion of ectopic pregnancy. Her serum human chorionic gonadotropin was positive, and a poorly-vascularized mass measuring about 4 cm was visualized in the Douglas pouch by transvaginal ultrasonography, as well as by pelvic magnetic resonance imaging. Because the bilateral adnexa were apparently intact, she was diagnosed with abdominal pregnancy, and expectant management was commenced. Unexpectedly, the mass remained *in situ* for nearly 3 years after her serum human chorionic gonadotropin tested negative. Laparoscopic removal of the mass was finally required because of persistent defecation pain. This case illustrates that some abdominal pregnancies can be managed expectantly, as is the case with tubal pregnancies. During the expectant management, however, it should be considered that the abdominal pregnancy mass may persist for a longer period and cause moderate symptoms necessitating surgical removal.

Introduction

Abdominal pregnancy has been defined as an embryonic implantation in the peritoneal cavity, exclusive of tubal, ovarian, or intraligamentary implantations. It is a relatively rare condition, with an incidence estimated to be 1/10,000 births and 1.4% of ectopic pregnancies.[1] The sites of implantation include the omentum, pelvic side wall, the Douglas pouch, spleen, bowel, liver, large pelvic vessels, diaphragm, and uterine serosa.[2–7] Most abdominal pregnancies result from reimplantation of a tubal abortion, and the implantation site is often located in close vicinity to the adnexa. Accordingly, an early abdominal pregnancy may often be difficult to distinguish from a tubal pregnancy.

The spaciousness of the peritoneal cavity sometimes allows an abdominal pregnancy to progress into or beyond the second trimester. Because severe intra-abdominal hemorrhage due to placental separation or rupture of maternal blood vessels could ensue in advanced abdominal pregnancies,[7] early surgical intervention is generally recommended once the diagnosis of abdominal pregnancy is confirmed.[8] There has been no English language case report that describes the course of expectant management for abdominal pregnancy.

Herein, we report the first case of expectantly managed abdominal pregnancy that was diagnosed early in the first trimester. Remarkably, the abdominal mass remained *in situ* for nearly 3 years after the serum human chorionic gonadotropin (hCG) became undetectable.

Case Report

A 31-year-old multiparous woman without any remarkable medical history presented to a primary care doctor because of moderate lower abdominal pain. She reported the normal onset of menstruation 28 days before the presentation, and she tested urinary hCG positive. Ectopic pregnancy was suspected because of a palpable pelvic mass, and she was transferred to our hospital.

On physical examination, her vital signs were normal, and her abdomen was tender without muscular guarding or rebound tenderness. Pelvic examination revealed small blood clots in the vaginal vault and a mass larger than a walnut in size, with moderate

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tenderness, palpable in the Douglas pouch. Transvaginal ultrasonography revealed an empty uterus with a 39 mm × 30-mm-sized heterogeneous solid mass in the Douglas pouch. On laboratory tests, hemoglobin was 12.7 g/dL and serum hCG level was 944.3 IU/L. Magnetic resonance imaging (MRI) revealed a 37-mm-sized mass in the Douglas pouch without any ascites in the pelvic cavity. Bilateral adnexa were apparently intact. The mass in the Douglas pouch exhibited high signal intensity on T1-weighted and low signal intensity on T2-weighted MRI without contrast enhancement (Figure 1).

On the basis of these findings, a diagnosis of abdominal pregnancy was confirmed. In addition to her mild symptoms, no viable fetus was detected in the ectopic pregnancy mass, and her serum hCG level was relatively low; nonetheless, expectant management without any medical treatment was offered and selected. Three months later, the abdominal pain completely resolved, and her serum hCG level decreased below the cutoff level. As the size of the mass in the Douglas pouch remained mostly unchanged, periodic follow-up with measurement of serum hCG levels and ultrasonographic examination was continued.

After 2 years and 10 months, she began to complain of defecation pain. Her menstrual cycles were normal, and her serum hCG level remained negative. Digital examination did not reveal any masses and strictures. With transvaginal ultrasonography, there were no findings suggestive of pelvic endometriosis. On MRI, the mass had shrunk to 14 mm, and was in close contact with the rectum. We considered that defecation pain could be attributable to possible inflammation surrounding the mass and proceeded with exploratory laparoscopy.

Intraoperative findings revealed that a finger-sized, smooth, white mass in the Douglas pouch was firmly adhered to the rectum (Figure 2). We did not see any endometriotic lesions. The uterus and bilateral adnexa were macroscopically normal and the mass was not connected to the fallopian tube. Accordingly, we carefully freed the adhesions and removed the mass without damaging the rectum. Histopathological examination of the resected mass revealed hematoma coated with connective tissue without any detectable chorionic villi. Her postoperative course was uneventful, and the defecation pain completely resolved.

Discussion

Accurate hCG level measurement and the widespread use of transvaginal ultrasonography have enabled a more precise

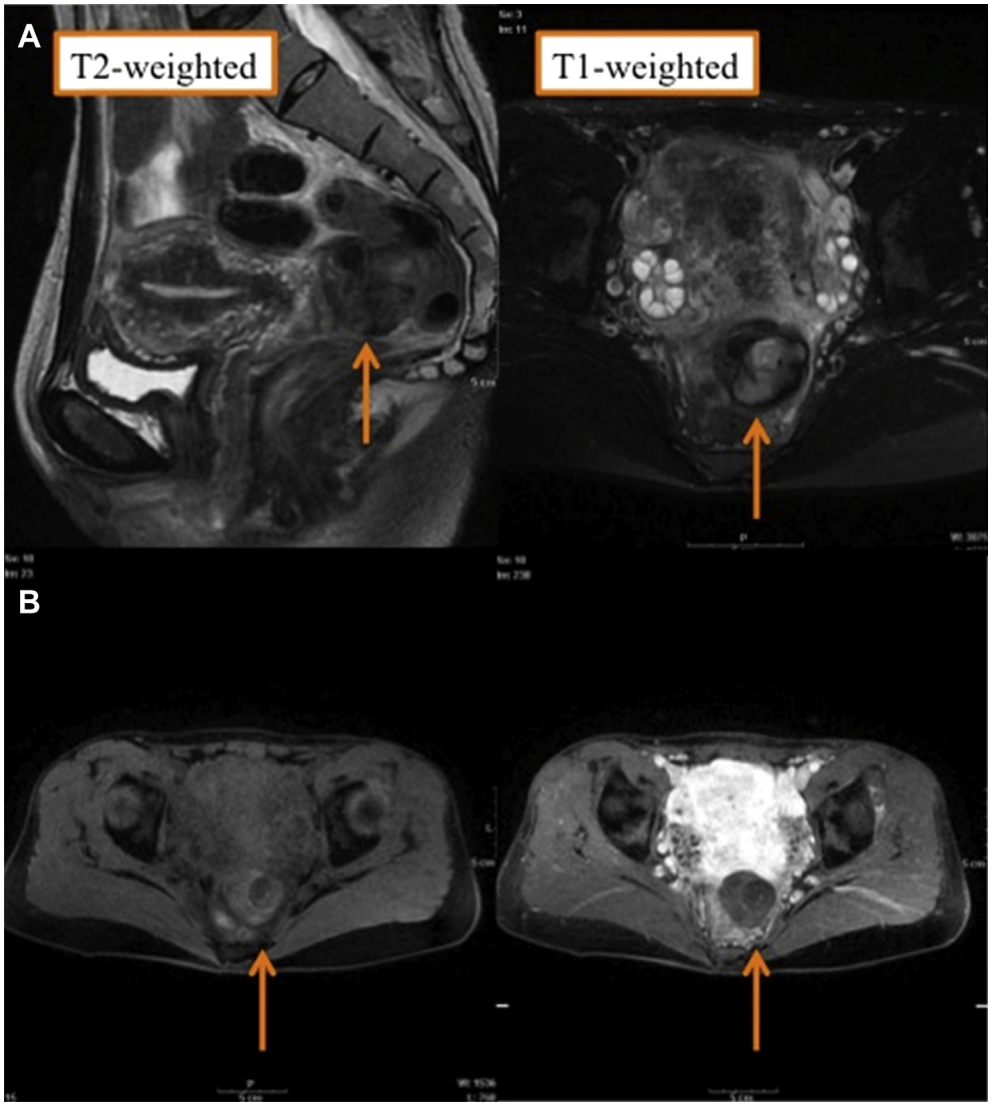

Figure 1. Magnetic resonance imaging (MRI) at her initial visit. (A) A 37-mm-sized mass (arrows) is delineated in the Douglas pouch. (B) Note that the mass lacks contrast enhancement.

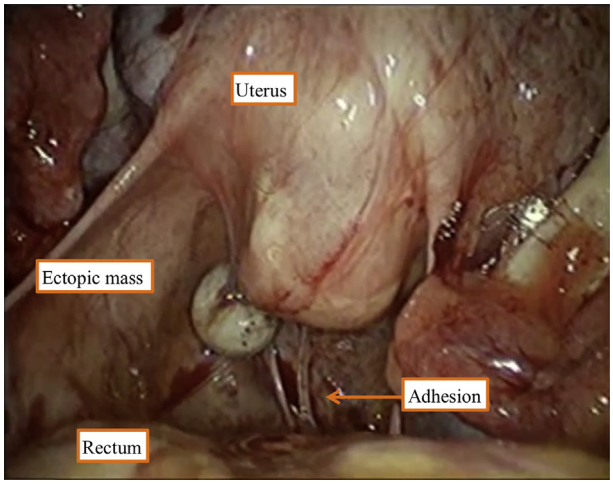

Figure 2. Intraoperative findings at laparoscopy. A finger-sized, smooth, white mass is observed in the Douglas pouch (arrow). The mass is firmly adhered to the rectum.

diagnosis of early ectopic pregnancy. Simultaneously, it has become increasingly recognized that some ectopic pregnancies can regress spontaneously without any medical or surgical intervention. According to a prospective study by Mavrelos et al,[9] the success rate of expectant management for tubal pregnancies among those that fulfilled their selection criteria reached as high as 71% (104/146 cases). These criteria included: (1) clinical stability with no or minimal abdominal pain; (2) no evidence of significant hemoperitoneum; (3) ectopic pregnancy mass with a mean diameter <30 mm without embryonic cardiac activity; and (4) serum β-hCG level <1500 IU/L.[9] The current case of abdominal pregnancy fulfilled all these criteria except for the size of the ectopic pregnancy mass, which measured about 4 cm in diameter. As the ectopic pregnancy mass was not confined in a narrow structure such as the fallopian tube, we considered that the risk of sudden bleeding due to rupture was relatively low and offered the option of expectant management to the patient.

Ectopic pregnancy mass usually regresses and disappears after serum hCG becomes negative. In our case, however, the mass in the Douglas pouch remained *in situ* for nearly 3 years. We suspect that our case was secondary to the tubal abortion, and thus the blood supply from the peritoneum to the ectopic pregnancy mass was relatively scarce. This was supported by the MRI findings, which showed no detectable contrast enhancement in the ectopic pregnancy mass. Accordingly, the mass remained unabsorbed for a long period, although the serum hCG promptly decreased because of necrosis of the chorionic villi. Because defecation pain completely resolved after the surgical removal, this symptom was undoubtedly attributable to the persistence of ectopic pregnancy mass. This suggests that inflammation and adhesion surrounding the ectopic pregnancy mass can occur despite a paucity of blood supply. In these respects, patients with abdominal pregnancy who are offered or choose expectant management should be informed of not only the risk of intra-abdominal hemorrhage, but also the risk of persistent ectopic pregnant mass that could cause mild to moderate symptoms.

Surgery for ectopic pregnancy has shifted from laparotomy to laparoscopy. In the case of abdominal pregnancy, removal of the ectopic pregnancy mass could cause intractable hemorrhage and/or organ injury because of deep trophoblastic invasion into the surrounding tissue.[10] In this respect, some clinicians would prefer laparotomy to laparoscopy for an abdominal pregnancy. In our case, vascularity of the Douglas mass was preoperatively evaluated using contrast-enhanced MRI. As no detectable contrast enhancement was observed in the mass, we confidently chose laparoscopic surgery. Indeed, we were able to laparoscopically remove the mass without encountering intractable hemorrhage or damaging the rectum.

In conclusion, we here describe our experience in the expectant management for abdominal pregnancy, which was likely to be secondary to tubal abortion. The abdominal pregnancy mass was poorly vascularized and remained *in situ* for nearly 3 years to elicit defecation pain. Our experience illustrates that some abdominal pregnancies can be managed expectantly, as is the case with tubal pregnancies. During expectant management, however, we should bear in mind that an abdominal pregnancy mass may persist for a longer period and cause moderate symptoms necessitating surgical removal.

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