

Management of an Abdominal Pregnancy by Laparoscopy: A Case Report and Review of the Literature

Saeed Alborzi¹, Nasrin Asadi^{2,*}, Armin Attar³, Mohsen Khosravi Maharlooei³, Soroush Alborzi⁴

¹Laparoscopy Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran

²Department of Obstetrics and Gynecology, Shiraz University of Medical Sciences, Shiraz, IR Iran

³Shiraz University of Medical Sciences, Shiraz, IR Iran

⁴Department of Cardiology, Shiraz University of Medical Sciences, Shiraz, IR Iran

*Corresponding author: Nasrin Asadi, Department of Obstetrics and Gynecology, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel: +98-9173137810, Fax: +98-7118210844, E-mail: nasadi2012@yahoo.ca.

Received: December 08, 2012; Accepted: May 28, 2013

Since abdominal pregnancies are mostly complicated, they are usually managed by laparotomy, but laparoscopy is an alternative method which some surgeons perform instead of laparotomy; especially in advanced pregnancy. We reported a 31 year old woman with last menstrual period of 18 weeks who had supra pubic pain and vaginal bleeding. After sonographic evaluations, abdominal pregnancy was diagnosed and the patient underwent laparoscopic surgery for termination of pregnancy. One year after this successful operation, the patient experienced a normal intrauterine pregnancy. Laparoscopy is a successful alternative method of surgery for abdominal pregnancies which can be done by experienced surgeons especially at gestational age of 18 weeks.

Keywords: Pregnancy, Abdominal; Laparoscopy; Pregnancy Trimester, Second

1. Introduction

Abdominal pregnancy is defined as existence of gestational sac in peritoneal cavity. Abdominal pregnancies constitute about 1% of ectopic pregnancies. The rate of abdominal pregnancy has been reported 1 in every 3,372 to 7,931 births (1). Abdominal pregnancy leads to 7.7 times higher maternal mortality rate than that associated with tubal ectopic pregnancy (2). The chance of fetal survival is very low and the fetal mortality rate increases from 40% to 95% (3). This situation results from re-implantation of a tubal abortion (4). History of ectopic common risk factors contributed to the abdominal pregnancies (1). Abdominal pregnancies are mostly diagnosed in higher gestational ages in comparison to other ectopic pregnancies. So there are more risks for intra-abdominal hemorrhage. Therefore in most cases, laparotomy is the preferred approach (5-7). Laparoscopic termination of abdominal pregnancies has been reported recently but just for early first trimester pregnancies (8). There is no report about laparoscopic management of a second trimester

abdominal pregnancy in literature. Here, we reported an 18 week abdominal pregnancy with laparoscopic approach termination.

2. Case Report

A 31 years old pregnant woman with gestational age of 18 weeks presented with vaginal bleeding and abdominal pain. On arrival, the patient was hemodynamically stable with a temperature of 37c, pulse rate of 80/min, blood pressure of 120/80 mmHg and respiratory rate of 20 breaths/min. There was no point of tenderness in the abdomen and pelvic exams. Uterus size was compatible with 12 weeks of gestation pregnancy and a non-tender mass could be palpated in its right side measuring approximately 8 cm. The hemoglobin level was 11.4 g/dl and hematocrit was 33.6%. The B-HCG titer was 138 IU/L. Vaginal ultrasonography showed an empty uterus with two intramural myomas and a 13-14cm fetus which was located posterior to the uterus. Also a 4-5cm mass was seen in the right side of the uterus in favor of placenta. Therefore the patient was prepared for laparoscopic

Implication for health policy/practice/research/medical education:

By technical improvement and advantage in laparoscopy, laparotomy is of great importance for the surgical treatment of most ectopic pregnancy. Although successful removal of early abdominal pregnancy is reported, there isn't any report about the termination of abdominal pregnancy by laparoscopy in this gestational age.

Copyright © 2013, Minimally Invasive Surgery Research Center and Mediterranean. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

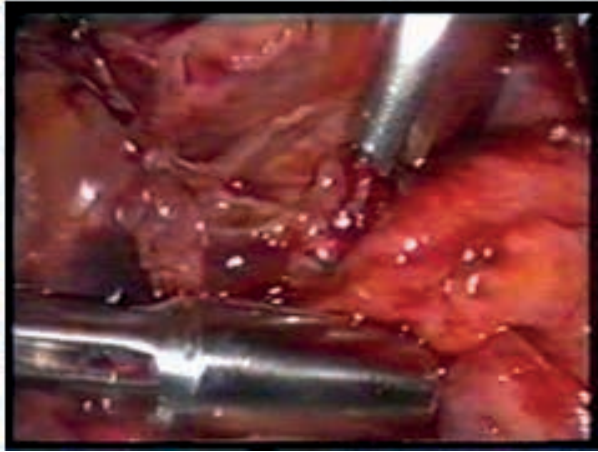


Figure 1. Adhesions in Abdominal Cavity



Figure 2. An 18 Week Old Fetus in Abdominal Cavity Seen Through Laparoscopy



Figure 3. The placenta and other viscera can be seen after removal of the fetus

evaluation. Under general anesthesia by four puncture, laparoscopy was done. Abdominal pregnancy had severe adhesions to the small bowel, right ovary and appendix (Figure 1). Primarily, these adhesions were released carefully with dissection of the right ureter and fetus (Figure 2) and then the placenta (Figure 3) were taken out. Finally, the abdominal cavity was irrigated with normal saline and cystoscopy was done to find any possible injury which was also normal. Pathologic evaluation of the tissue showed the existence of placental villi and fetal parts. Twenty four hours after surgery, β -HCG titer became 50 IU/L. The patient was ambulant the next day and discharged two days after the operation. She had a normal intrauterine pregnancy one year later in the follow-up.

3. Discussion

Abdominal pregnancy is usually complicated and leads to high maternal and perinatal mortality. Misdiagnosis is the main cause of these complications. About 50% of diagnoses are missed on ultrasound. MRI and CT are better diagnostic tools (9). Posterior cul-de-sac is the most common site of implantation followed by mesosalpinx and omentum respectively. However, pregnancy implantation in the abdomen, spleen, lung, liver and appendix is also reported (5, 10-13). During surgery, massive intra-abdominal bleeding due to placental separation is unpredictable, therefore regardless of gestational age of pregnancy, surgery should be performed as the diagnosis is confirmed, some surgeons prefer the expectant management of abdominal pregnancy while getting close to the due date of delivery. During surgery, partial removal of placenta can lead to massive bleeding, due to implantation of the placenta over the tissues which cannot be contracted (14). In this patient, site of bleeding was stopped successfully by electro coagulation. By technical improvement and advantage in laparoscopy, it has been replaced for the surgical treatment of most ectopic pregnancy. Although successful removal of early abdominal pregnancy is reported (15-20), according to our knowledge, there isn't any report about the termination of abdominal pregnancy by laparoscopy in this gestational age. Early diagnosis depends on the clinician's suspicion. Massive hemorrhage from placental separation may cause maternal death. Minimally invasive surgeries have been used for termination of abdominal pregnancies up to the second trimester of pregnancy (21). This is the first report about the laparoscopic management of the abdominal pregnancy in 18 weeks of gestation. One of the best criteria for effectiveness of treatment of ectopic pregnancy is the fertility rate after the ectopic pregnancy (22). Laparoscopic approach for removal of this abdominal pregnancy was successful to keep the fertility capacity of our patient.

Acknowledgements

There is nothing to acknowledge.

Financial Disclosure

There is no financial disclosure.

Funding Support

This work has been carried in Shiraz University of Medical Sciences.

References

- Martin JN, Jr, Sessums JK, Martin RW, Pryor JA, Morrison JC. Abdominal pregnancy: current concepts of management. *Obstet Gynecol.* 1988;**71**(4):549-57.
- Ginath S, Malinger G, Golan A, Shahmurov M, Glezerman M. Successful laparoscopic treatment of a ruptured primary abdominal pregnancy. *Fertil Steril.* 2000;**74**(3):601-2.
- Bajo JM, Garcia-Frutos A, Huertas MA. Sonographic follow-up of a placenta left in situ after delivery of the fetus in an abdominal pregnancy. *Ultrasound Obstet Gynecol.* 1996;**7**(4):285-8.
- Seol HJ, Tong SY, Ki KD. Secondary missed abdominal pregnancy due to iatrogenic uterine perforation: a case report. *Clin Exp Obstet Gynecol.* 2012;**39**(3):376-8.
- Nama V, Gyampoh B, Karoshi M, McRae R, Opemuyi I. Secondary abdominal appendicular ectopic pregnancy. *J Minim Invasive Gynecol.* 2007;**14**(4):516-7.
- Siow A, Chern B, Soong Y. Successful laparoscopic treatment of an abdominal pregnancy in the broad ligament. *Singapore Med J.* 2004;**45**(2):88-9.
- Zhang J, Li F, Sheng Q. Full-term abdominal pregnancy: a case report and review of the literature. *Gynecol Obstet Invest.* 2008;**65**(2):139-41.
- Gerli S, Rossetti D, Baiocchi G, Clerici G, Unfer V, Di Renzo GC. Early ultrasonographic diagnosis and laparoscopic treatment of abdominal pregnancy. *Eur J Obstet Gynecol Reprod Biol.* 2004;**113**(1):103-5.
- Shafi SM, Malla MA, Salaam PA, Kirmani OS. Abdominal pregnancy as a cause of hemoperitoneum. *J Emerg Trauma Shock.* 2009;**2**(3):196-8.
- Chui AK, Lo KW, Choi PC, Sung MC, Lau JW. Primary hepatic pregnancy. *ANZ J Surg.* 2001;**71**(4):260-1.
- Fishman DA, Padilla LA, Joob A, Lurain JR. Ectopic pregnancy causing hemothorax managed by thoracoscopy and actinomycin D. *Obstet Gynecol.* 1998;**91**(5 Pt 2):837-8.
- Thompson RJ, Hawe MJ. A rare pathological trinity: an appendiceal ectopic pregnancy, acute appendicitis and a carcinoid tumour. *Ir J Med Sci.* 2011;**180**(2):579-80.
- Yagil Y, Beck-Razi N, Amit A, Kerner H, Gaitini D. Splenic pregnancy: the role of abdominal imaging. *J Ultrasound Med.* 2007;**26**(11):1629-32.
- Fylstra DL. Ectopic pregnancy not within the (distal) fallopian tube: etiology, diagnosis, and treatment. *Am J Obstet Gynecol.* 2012;**206**(4):289-99.
- Ehrenberg-Buchner S, Sandadi S, Moawad NS, Pinkerton JS, Hurd WW. Ectopic pregnancy: role of laparoscopic treatment. *Clin Obstet Gynecol.* 2009;**52**(3):372-9.
- Esin S, Yildirim H, Tanzer F. Laparoscopic management of a primary omental pregnancy after clomiphene induction. *Fertil Steril.* 2009;**92**(1):392 e1-3.
- Hong JH, Shin JH, Song KJ, Lee HJ, Kim IS, Lee JK, et al. Laparoscopic management of primary omental pregnancy. *J Minim Invasive Gynecol.* 2008;**15**(5):640-1.
- Hornemann A, Holl-Ulrich K, Finas D, Altgassen C, Diedrich K, Hornung D. Laparoscopic management of early primary omental pregnancy. *Fertil Steril.* 2008;**89**(4):991 e9-11.
- Khalil A, Aslam N, Haider H, Creighton SM. Laparoscopic management of a case of unexpected omental pregnancy. *J Obstet Gynaecol.* 2006;**26**(5):475-6.
- Seol HJ, Kim T, Lee SK. Successful laparoscopic management of primary omental pregnancy. *Arch Gynecol Obstet.* 2010;**281**(1):163-5.
- Gupta P, Sehgal A, Huria A, Mehra R. Secondary abdominal pregnancy and its associated diagnostic and operative dilemma: three case reports. *J Med Case Rep.* 2009;**3**:7382.
- Desroque D, Capmas P, Legendre G, Bouyer J, Fernandez H. [Fertility after ectopic pregnancy]. *J Gynecol Obstet Biol Reprod (Paris).* 2010;**39**(5):395-400.