THE JOURNAL OF OBSTETRICS AND GYNECOLOGY OF INDIA

The Journal of Obstetrics and Gynecology of India (July–August 2017) 67(4):291–294
DOI 10.1007/s13224-016-0947-2

CASE REPORT

Splenic Pregnancy: A Case Report

Anuja Thomas[1] · Nimisha Srivastava[1] · Iqbal Tintoiya[1] · Sushil Kumar[1]

Received: 4 August 2016 / Accepted: 10 November 2016 / Published online: 24 November 2016

About the Author

Dr. Anuja Thomas, DGO, DNB is an Assistant Professor in the Department of Obstetrics and Gynaecology, MGM Medical College, Navi Mumbai. She is a good clinician with keen interest in obstetric medicine.

Introduction

Ectopic pregnancy is defined as implantation of a fertilized ovum in tissue other than the endometrium. Its incidence is 19.7 per 1000 pregnancies [1–3]. The most common site of ectopic implantation is ampulla of the fallopian tube, accounting for more than 92% of all ectopics [1–5]. Abdominal pregnancies account for approximately 1.4% of all ectopic pregnancies and occur with direct implantation onto the peritoneal surface. Abdominal pregnancies have been described in extrapelvic organs like omentum, liver, spleen, small and large intestine [1–3, 6, 7]. The spleen is one of the rare sites for ectopic gestation, and to our knowledge, only ten cases of primary splenic pregnancy have been documented in literature till date.

This case report is of a 19-year-old patient who presented with abdominal pain, pregnancy test positive and

Dr. Anuja Thomas is an Assistant Professor in Department of Obstetrics and Gynaecology at MGM Medical College, Maharashtra; Dr. Nimisha Srivastava is a Postgraduate Resident in Department of Obstetrics and Gynaecology at Mahatma Gandhi Mission Hospital, Maharashtra; Dr. Iqbal Tintoiya is a Postgraduate Resident in Department of Obstetrics and Gynaecology at Mahatma Gandhi Mission Hospital, Maharashtra; Dr. Sushil Kumar is Professor and HOD in Department of Obstetrics and Gynaecology at Mahatma Gandhi Mission Hospital, Maharashtra.

✉ Anuja Thomas
drnimishasrivastava@gmail.com

[1] Department of Obstetrics and Gynaecology, Mahatma Gandhi Mission Hospital, Kalamboli, Raigad, Maharashtra 410214, India

haemoperitoneum and was taken up for exploratory laparotomy, and splenic pregnancy was diagnosed intra-operatively. A splenorrhaphy was performed to conserve the spleen instead of splenectomy.

Case

Our patient was a 19-year-old married woman who was referred to our centre with abdominal pain and fullness since two days. She had regular menstrual cycles. Her last menstruation was 4 weeks prior. An abdominal ultrasound was done at the peripheral hospital, which revealed a normal uterus, normal bilateral fallopian tubes and ovaries, and moderate to severe haemoperitoneum and all abdominal organs within normal limits. A urine pregnancy test done there was positive. On clinical examination in our set-up, the patient had moderate pallor, pulse of 120 beats per minute and blood pressure of 90/60 mmHg. On abdominal examination, diffuse abdominal tenderness was present with abdominal distension. Gynaecological examination revealed a normal cervix, minimal brownish vaginal discharge, normal-sized uterus with no adnexal tenderness. Her serum beta human chorionic gonadotropin level was sent on admission. Since the patient was haemodynamically unstable, pregnancy test was positive along with haemoperitoneum, she was taken up for an emergency exploratory laparotomy under general anaesthesia, with clinical suspicion of a ruptured ectopic pregnancy, probably undiagnosed radiologically. Pre-operatively, her haemoglobin value was found to be 7.2 g/dl. All other routine investigations were within normal limits.

The abdomen was opened with a transverse 4- to 5-cm-long suprapubic incision. Intraoperatively, haemoperitoneum of approximately 1200 cc was noted. The uterus, bilateral fallopian tubes and ovaries were normal, and no evidence of a tubal or ovarian ectopic pregnancy was found. Meanwhile, her serum beta HCG value sent on admission was found to be more than 10,000 mIU/ml. The abdominal cavity was then further inspected by extending our incision upwards in the midline. A careful exploration of the abdomen revealed fresh blood clots and blood collection in the left paracolic area, which was traced to originate from the spleen. The spleen on its supero-lateral surface showed attachment of irregular soft, chorionic villous /trophoblast-like tissue, approximately 3 × 2 cm in size. Active bleeding from the superolateral surface of the spleen was present.

The adherent tissue was separated from the splenic surface, and a splenorrhaphy was performed by our surgery faculty, conserving the spleen. The tissue retrieved was sent for histopathological examination. The abdomen was closed in layers once haemostasis was ensured. Two drains were kept intra-abdominally—one each in the splenic and pelvic areas, to allow any collection to drain out. Following closure, a uterine dilation and curettage was performed and tissue was sent for histopathology for any evidence of intrauterine pregnancy.

The patient received three packed cell transfusions intraoperatively and one post-operatively. For the first 48 h, she was monitored in the SICU. Higher antibiotics and analgesics were administered to the patient. Her post-operative period was uneventful (Figs. 1, 2).

Value of serum beta HCG repeated on fourth post-operative day was 802.4 mIU/ml with all vital parameters showing considerable improvement, and haemoglobin level repeated was 9.8 g/dl. Both drains had minimal collection and were removed on the fifth post-operative day.

After 1 week, the beta HCG value decreased to 39.6 mIU/ml. The patient recovered uneventfully and was discharged on the 11th post-operative day.

Fig. 1 A 3 × 2 cm mass attached to the supero-lateral splenic surface with bleeding from its site of attachment

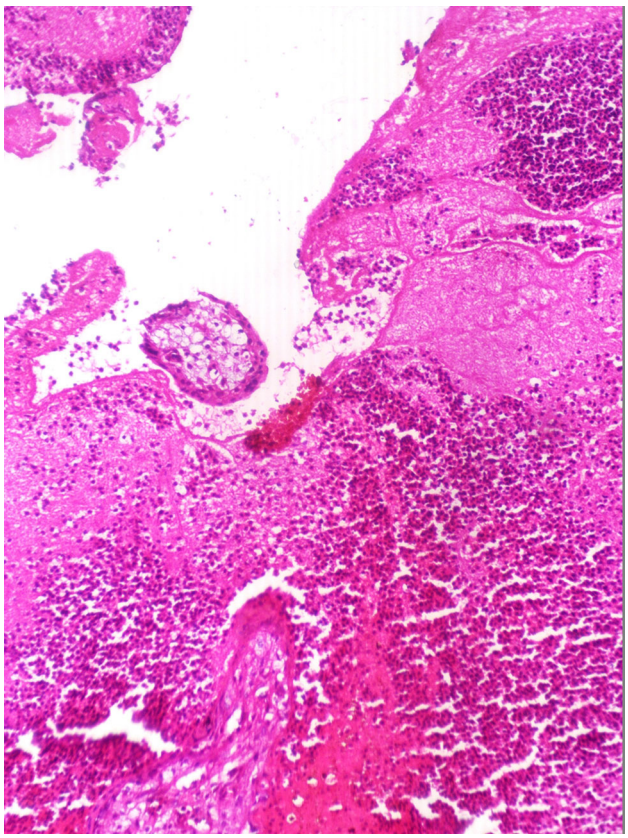

Fig. 2 Section stained with haematoxylin and eosin showing chorionic villi invading the splenic parenchyma

Histopathological Findings

Histopathological examination of tissue retrieved from spleen showed haemorrhagic areas in splenic tissue, with intervening chorionic villous tissue.

Histopathology of endometrial tissue revealed normal endometrium negative for any products of conception.

Discussion

Abdominal pregnancy is an implantation in the peritoneal cavity exclusive of tubal, ovarian or intraligamentous implantations. It may be primary or secondary [1–5]. Estimated incidence ranges from 1 in 10,000 to 1 in 25,000 live births [1, 4, 5]. It is associated with high morbidity and mortality, with the risk for death seven to eight times greater than tubal ectopic pregnancy and 50 times greater than intrauterine pregnancy [1, 4, 5, 7, 8].

Studdiford's criteria for diagnosis of primary abdominal pregnancy are

1. Presence of normal tubes and ovaries with no evidence of recent or past pregnancy
2. No evidence of uteroplacental fistula
3. The presence of a pregnancy related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation after primary tubal nidation [2, 8–10].

The sites of abdominal pregnancy are the pouch of Douglas, posterior uterine wall and extrapelvic structures such as small and large intestine, omentum, liver and spleen [2, 3, 9, 10].

Incidence of splenic pregnancy is very rare. The spleen is a relatively more favourable organ for implantation since it is a flat organ, rich in blood flow and easily reached by the fertilized ovum in the supine position. However, none of the anatomic sites described above, including the spleen, can accommodate placental attachment or a growing embryo; therefore, rupture and a massive haemorrhage may very likely occur if left untreated. Primary splenic pregnancy tends to present earlier than other abdominal pregnancies, mostly presenting with acute abdomen and haemoperitoneum occurring at 6–8 weeks' gestation. Because of the abundant blood supplies, splenic ectopic pregnancy may have massive peritoneal bleeding and the patient may present with hypovolemic shock [1, 9, 10].

Summary

Our case is an intraoperative detection of pregnancy on the spleen, with no abnormalities of the uterus and fallopian tubes and no evidence of pregnancy other than the spleen. Therefore, we may conclude that this case is most likely a primary splenic pregnancy, missed radiologically and diagnosed during exploratory laparotomy. Recognition of this rare form of ectopic gestation is of considerable importance because of the risk of a life-threatening peritoneal haemorrhage necessitating emergency surgical intervention and even splenectomy.

Compliance with Ethical Standards

Conflict of interest Authors declare that they have no conflict of interest.

Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

References

1. Siddiqui NA, Islam T, Siddiqua F. Abdominal pregnancy implanted in the Spleen: a case report. AKMMC J. 2011;2(2):36–8.
2. Berek JS, Novak E. Berek & Novaks gynaecology, section 4; chapter 20. 15th ed. Philadelphia: Lippincott Williams & Wilkins; 2012. p. 1167.

3. Cunningham FG, Leveno KJ, Bloom SL, et al. Williams obstetrics, section 6; chapter 19. 24th ed. NewYork: McGraw-Hill Education; 2014. p. 392.
4. Parashi S, Moukhah S, Ashrafi M. Main risk factors for ectopic pregnancy: a case-control study in a sample of Iranian women. Int J Fertil Steril. 2014;8(2):147–54.
5. Sivalingam VN, Duncan WC, Kirk E, et al. Diagnosis and management of ectopic pregnancy. J Fam Plan Reprod Health Care Fac Fam Plan Reprod Health Care R Coll Obstet Gynaecol. 2011;37(4):231–40. doi:10.1136/jfprhc-2011-0073.
6. Panti A, Ikechukwu NE, lukman OO, et al. Ectopic pregnancy at Usmanu Danfodiyo University Teaching Hospital Sokoto: a ten year review. Ann Niger Med. 2012;6(2):87–91.
7. Lawani OL, Anozie OB, Ezeonu PO. Ectopic pregnancy: a life-threatening gynecological emergency. Int J Women's Health. 2013;5:515–21. doi:10.2147/IJWH.S49672.
8. Petrides A, Dinglas C, Chavez M, et al. Revisiting ectopic pregnancy: a pictorial essay. J Clin Imaging Sci. 2014;4:37. doi:10.4103/2156-7514.137817.
9. Bohiltea R, Radoi V, Tufan C, et al. Abdominal pregnancy—case presentation. J Med Life. 2015;8(1):49–54.
10. Ji Y. A live splenic ectopic pregnancy. J Cell Sci Ther. 2015;6:201. doi:10.4172/2157-7013.1000201.