

**Case Report:****Broad ligament ectopic pregnancy**Chilekampalli Rama,<sup>1</sup> Goduguchintha Lepakshi,<sup>2</sup> Sangaraju Narasimha Raju<sup>3</sup>Departments of <sup>1</sup>Obstetrics and Gynaecology, <sup>2</sup>General Medicine, Sri Venkateswara Medical College, Tirupati and <sup>3</sup>Srinivasa Ultrasound Scanning Centre, Tirupati**ABSTRACT**

Pregnancy in the broad ligament is a rare form of ectopic pregnancy with a high risk of maternal mortality. Ultrasonography may help in the early diagnosis but mostly the diagnosis is established during surgery. We report the case of a patient with broad ligament ectopic pregnancy diagnosed intraoperatively. The patient had uneventful post-operative recovery.

**Key words:** *Broad ligament, Ectopic pregnancy, Ultrasonography*

Rama C, Lepakshi G, Raju SN. Broad ligament ectopic pregnancy. *J Clin Sci Res* 2015;4:45-8. DOI: <http://dx.doi.org/10.15380/2277-5706.JCSR.14.013>.

**INTRODUCTION**

Abdominal pregnancy, with a diagnosis of one per 10,000 births, is an extremely rare and serious form of extrauterine gestation.<sup>1</sup> Ectopic pregnancy in the broad ligament is a retroperitoneal abdominal pregnancy, in which the foetus or gestational sac develop within the leaves of the broad ligament.<sup>2</sup> It may occur in any part of the abdomen but it is common in pouch of douglas and is rare in broad ligament.<sup>3</sup>

The maternal mortality rate has been reported to be as high as 20%.<sup>4</sup> This is primarily because of the risk of massive haemorrhage from partial or total placental separation. The placenta can be attached to the uterine wall, bowel, mesentery, liver, spleen, urinary bladder and ligaments. It can be detached at any time during pregnancy leading to torrential blood loss. Accurate localization of the placenta preoperatively could minimize the blood loss during surgery by avoiding incision into the placenta. It is thought that abdominal pregnancy is more common in developing countries probably because of the high frequency of

pelvic inflammatory disease. It presents as acute abdominal emergency during pregnancy and the diagnosis is commonly achieved during surgical exploration. The complications of pregnancy in the broad ligament include abdominal pain, rupture of the gestational sac with hemorrhage into the peritoneal cavity, vaginal bleeding, an abnormal lie, placental insufficiency and pseudo labour followed by foetal death. The management of pregnancy in broad ligament is surgical removal of foetus and placenta.

**CASE REPORT**

A 23-year-old woman, gravida 2, para 1, presented with severe abdominal pain, vomitings, and heavy vaginal bleeding since 2 days. She had amenorrhoea of 10 - 12 weeks duration. She had been married for two and half years and had conceived spontaneously. Eighteen months ago she delivered a full term live male child by Caesarean section in view of severe oligohydromnios. Her past history and family history were unremarkable.

There was a history of taking oral pills for medical abortion followed by check curettage

Received: March 10, 2014; Revised manuscript received: July 29, 2014; Accepted: August 18, 2014.

**Corresponding author:** Dr Chilekampalli Rama, Assistant Professor, Department of Obstetrics and Gynaecology, Sri Venkateswara Medical College, Tirupati, India.

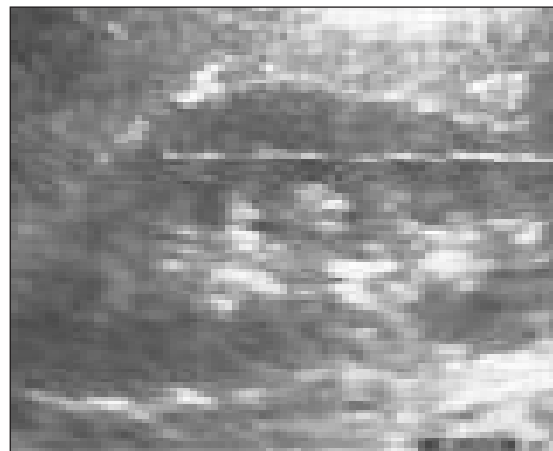
**e-mail:** ramalepakshi@gmail.com



Online access

[http://svimstpt.ap.nic.in/jcsr/jan-mar15\\_files/2cr15.pdf](http://svimstpt.ap.nic.in/jcsr/jan-mar15_files/2cr15.pdf)

DOI: <http://dx.doi.org/10.15380/2277-5706.JCSR.14.013>



**Figure 1:** Ultrasonography of the abdomen and pelvis showing a gestational sac with a 10-11 weeks gestational age on the right side of the uterus (A), and an empty uterine cavity (B)

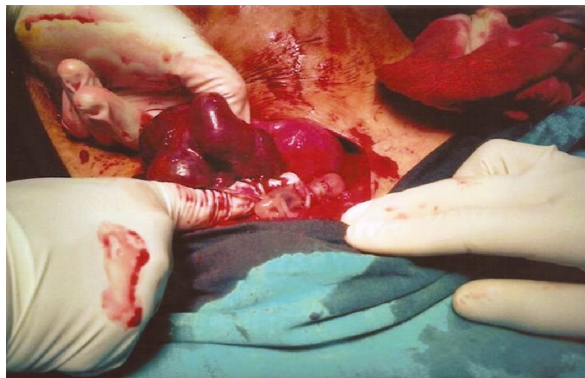
15 days back for missed abortion diagnosed by transabdominal ultrasonography. Physical examination revealed mild pallor, blood pressure was 110/60 mm of Hg. Haemoglobin was 10 g/dL, serological testing for human immunodeficiency virus (HIV) and hepatitis B surface antigen (HbsAg) were negative. Marked tenderness and guarding were evident in lower abdomen. Uterus was not palpable. Per vaginal examination revealed a bulky uterus, marked tenderness in the right fornix and a 6.6 cm mass which was not moving with the cervical movements was palpable. Cervical movements were painful.

Because of the persistence of the symptoms, transvaginal ultrasonography was done again. It showed a bulky uterus with thickened endometrium, minimal fluid in the endometrial cavity, and in the Douglas pouch, and mixed echogenic mass lesion in the right adnexal region containing a live foetus of 10-11 weeks gestational age, abutting the uterine fundus. The plane between the lesion and uterine fundus could not be delineated at few areas, suggestive of right tubal gestation abutting the uterine fundus. From these clinical and transvaginal ultrasonography findings she was taken up for emergency laparotomy. An ectopic pregnancy in the right broad ligament with a 10 cm diameter, having a viable foetus found below

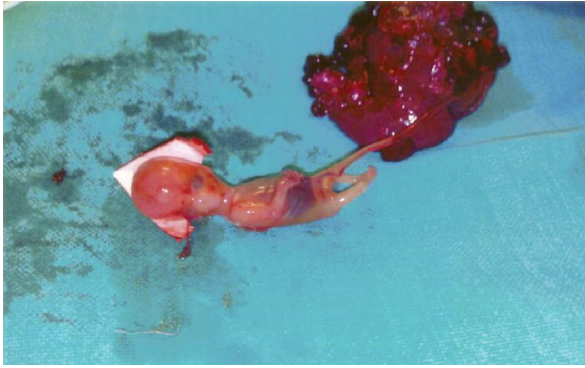
the right ovary (Figure 2) was evident. Adhesions were present between the gestational sac, ovary, fallopian tube, omentum and to the intestines with minimal haemoperitoneum. The sac was accidentally ruptured with profuse bleeding. The uterus was slightly enlarged. Left tube and ovary were normal. Right salpingo-oophorectomy with surgical removal of ectopic pregnancy was done (Figure 3). Patient had an uneventful recovery and was discharged on 5<sup>th</sup> post-operative day. She was well at 6 weeks of follow-up.

## DISCUSSION

Broad ligament ectopic pregnancy is a rare but life threatening condition. Maternal mortality is as high as 20%. The pathogenesis of pregnancy in broad ligament can be explained by two theories. The first is, the result from primary implantation of the zygote on the broad



**Figure 2:** Operative photograph showing a 11 weeks fetus in right broad ligament



**Figure 3:** Clinical photograph of the foetus with placenta

ligament. The second is a secondary implantation with original implantation of zygote having occurred elsewhere which is in the fallopian tubes, ovaries and peritoneal surfaces.

The risk factors include a history of secondary infertility, pelvic inflammatory disease, use of intrauterine contraceptive devices (IUCDs), use of progesterone only pill, a previous history of ectopic pregnancy and endometriosis. There is no apparent risk factor in this case. Pregnancy in the broad ligament is rarely diagnosed before surgical intervention even using ultrasonogram.

Nonetheless, the diagnosis remains a challenge. The most common implantation site is within the fallopian tubes (95.5%) followed by ovarian (3.2%) and abdominal (1%) locations.<sup>5</sup> Ectopic pregnancy usually presents with symptoms of abdominal pain, vaginal bleeding, fainting episodes, collapse, shoulder tip pain and pelvic pain. It is usually associated with other risk factors of ectopic pregnancy.<sup>5</sup>

Ectopic pregnancy can have a varied outcome. Mostly it remains dormant, it can also miscarry, rupture intraabdominally or extend into the broad ligament. There are no reliable clinical, sonographic or biological markers (e.g., serum  $\beta$  human chorionic gonadotropin or serum progesterone) that can predict rupture of tubal ectopic pregnancy.<sup>6,7</sup>

Between 40% and 50% of ectopic pregnancies are misdiagnosed at the initial visit to an

emergency department. Failure to identify risk factors is cited as common and significant reason for misdiagnosis. Presentation may be delayed if it remains silent.<sup>8</sup>

The history of missed abortion and the absence of any risk factors increased the suspicion of incomplete miscarriage rather than ectopic pregnancy. This delay had facilitated the growth of the ectopic pregnancy in the broad ligament and delayed the presentation of symptoms. It is imperative to consider overall clinical symptoms, investigations and the general status of the patient before planning the treatment.<sup>9</sup> Experience and comprehensive knowledge are key factors in the diagnosis of ectopic pregnancy. A high index of suspicion is vital in early diagnosis and intervention.

There is difference in the clinical presentation of abdominal and tubal pregnancy. There are various clinical presentations reported in the literature but a dull lower abdominal pain during early gestation is common. This has been attributed to the placental separation, tearing of broad ligament and small peritoneal haemorrhages.<sup>10,11</sup> Here, she presented with severe abdominal pain, persistence of vomitings and heavy vaginal bleeding. Vaginal bleeding is also a common feature reported in up to half of the patients.<sup>12</sup> This vaginal bleeding is reported to be due to break down of decidual cast.<sup>10,13</sup>

Ultrasonography is the investigation of choice for diagnosis. Transvaginal ultrasonography is superior to trans abdominal ultrasonogram in the evaluation of ectopic pregnancy since it allows a better view of the adnexa and uterine cavity. If there is no intrauterine pregnancy on ultrasonography and the ectopic sac is beside the lower part of the uterus a strong suspicion of broad ligament ectopic should be considered. Magnetic resonance imaging (MRI) provides additional information for evaluating the extent of uterine and mesenteric involvement<sup>14</sup> and may help in surgical planning. Non-contrast

MRI using T<sub>2</sub>-weighted imaging is a sensitive, specific and accurate method for evaluating ectopic pregnancy.<sup>15</sup>

The management is exploratory laparotomy. However, in a stable patient in the early gestation, laparoscopic removal can be considered for small broad ligament pregnancies.<sup>16</sup> Conservative management or medical management is not recommended for broad ligament ectopic pregnancy if the diagnosis is certain. She underwent laparotomy with excision of the mass along with salpingo oophorectomy. Early diagnosis and prompt surgical intervention definitely improves the morbidity and mortality in patients with abdominal ectopic pregnancy.

Broad ligament ectopic pregnancy is a rare but life threatening condition. Early diagnosis of intrauterine pregnancy and excluding extrauterine pregnancy is very important when the woman comes for confirmation of pregnancy at her first antenatal visit. Transvaginal ultrasonography plus MRI can be useful to demonstrate the anatomic relationship between the placenta and invasion area in order to be prepared preoperatively for possible massive blood loss.

---

### REFERENCES

---

1. Yildizhan R, Kurdoglu M, Kulusari A, Erten R. Primary omental pregnancy. *Soudi Med J* 2008;29:606-9.
2. Phupong V, Lertkhachonsuk R, Triratanachat S, Sueblinvong T. Pregnancy in the broad ligament. *Arch Gynecol Obstet* 2003;268:233-5.
3. Sharma S, Pathak N, Goraya SPS, Mohan P. Broad ligament ectopic pregnancy. *Srilanka Journal of obstetrics and gynaecology* 2011;33:60-62.
4. Alto WA. Abdominal Pregnancy. *Am Fam Physician* 1990;41:209-14.
5. Bobyer J, Coste J, Fernandez H, Pouly JL, Job-Spira N. Sites of ectopic pregnancy: a 10 Year population based study of 1800 cases. *Hum Reprod* 2008;17:3224-30.
6. Latchaw G, Takacs P, Gaitan L, Geren S, Burzawa J. Risk factors associated with the rupture of tubal ectopic pregnancy. *Gynecol Obstet Invest* 2005;60:177-80.
7. Job -Spira N, Fernandez H, Bouyer J. Ruptured tubal ectopic pregnancy; risk factors and reproductive outcome results a population based study in france. *Am J Obstet Gynecol* 1999;180:938-44.
8. Abbott J, Emmans LS, Lowenstein SR. Ectopic pregnancy: ten common pitfalls in diagnosis. *Am J Emerg Med* 1990;8:515-22.
9. Royal college of Obstetricians and Gynaecologists. The management of tubal pregnancy. Green top Guidelines No.21.London: Royal College of Obstetricians and Gynaecologists;2004.
10. Paterson WG, Grant KA. Advanced intraligamentous pregnancy. Report of a case, review of the literature and a discussion of the biological implications. *Obstet Gynecol Surv* 1975;30:715-26.
11. Vierhout ME, Wallenberg HC. Intraligamentary pregnancy resulting in live infant. *Am J Obstet Gynecol* 1985;152:878-9.
12. Hallatt JG, Grove JA. Abdominal pregnancy: a study of twenty one consecutive cases. *Am J Obstet Gynecol* 1985;152:444-9.
13. Cordero DR, Adra A, Yasin S, O'Sullivan MJ. Intraligamentary pregnancy. *Obstet Gynecol Surv* 1994;49:206-9.
14. Malian V, Lee JH. MR imagng and MR angiography of abdominal pregnancy with placental infarction. *AJR Am J Roentgenol* 2001;177:1305-6.
15. Yoshigi J, Yashiro N, Kinoshito T, O'uchi T, Kitagaki H. Diagnosis of ectopic pregnancy with MRI; efficacy of T-2 weighted imaging. *Magn Keson Med Sci* 2006;5:25-32.
16. Pisarka MD, Casson PR, Moise KJ Jr, Di Maio DJ, Buster JE, Carson SA. Heterotropic abdominal pregnancy treated at laproscopy. *Fertil Steril* 1998;70:159-60.