International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Dwivedi N et al. Int J Reprod Contracept Obstet Gynecol. 2023 Oct;12(10):3171-3176
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20232967

Case Series

Management of non-tubal ectopic pregnancies: rural tertiary care centre experience

Namika Dwivedi*, Mamta Mahajan, Amit Gupta, Anju Vij

Department of Obstetrics and Gynecology, Dr Rajendra Prasad Government Medical College Tanda at Kangra, Himachal Pradesh, India

Received: 17 August 2023
Revised: 19 September 2023
Accepted: 20 September 2023

***Correspondence:**
Dr. Namika Dwivedi,
E-mail: namikahoney@gmail.com

ABSTRACT

Non-tubal ectopic pregnancies are rare but potentially life-threatening conditions. Nearly 95% of ectopic pregnancies are implanted in the various segments of fallopian tube. The remaining 5% implant in non-tubal sites like ovary, cervix, rudimentary horn, cesarean scar, abdominal and even heterotopic. Seven patients with non-tubal ectopic pregnancy at rural tertiary institute at Dr. RPGMC Tanda, from February 2020 to January 2021 were included in the study. Demographic details, symptoms, beta human chorionic gonadotrophin (β-hCG) levels, ultrasound findings, management and treatment outcomes were presented. Medical treatment and surgical procedure, alone or combined, resulted in effective treatment in women with early diagnosis of non-tubal ectopic pregnancy and two patients had live birth (heterotopic and abdominal pregnancy). In our study, we report two cases of ovarian pregnancy, one case of rudimentary horn successfully managed surgically, one case of LSCS scar pregnancy managed medically with methotrexate followed by suction and evacuation, one case of cervical pregnancy managed by D&C, one case of heterotopic pregnancy managed surgically and abdominal pregnancy managed surgically. In this paper we report a single centre experience in the management of non-tubal ectopic pregnancy Early diagnosis of ectopic pregnancy especially non tubal ectopic, requires a high index of suspicion and availability of point of care, transvaginal USG. Accurate diagnosis and timely intervention will help reduce maternal morbidity, mortality and preserve future fertility.

Keywords: Ectopic non-tubal pregnancy, Fertility sparing, Surgical management

INTRODUCTION

Of all of the pregnancies, 2% account for ectopic pregnancies with most of the gestational sac implanted within the fallopian tube.[1] Non-tubal EP ranges between 5% and 8.3% of all ectopic pregnancies, with increased incidence in the last two decades with use of assisted reproductive techniques (ARTs), pelvic inflammatory disease and caesarean rate.[1]

The frequency of cervical ectopic pregnancies accounts for <1% of all EPs, while cesarean scar pregnancies and interstitial ectopic pregnancies may represent up to 4.2% and 2-11% of all ectopic pregnancies, respectively.[2-4] Severity of the ectopic pregnancy depends on the site of implantation of gestational sac, resulting in adverse outcome because of atypical presentation and lack of recognition by healthcare professionals.[2,3]

Vaginal bleeding which can be profuse and painless is the most common symptom. Serial β-hCG levels and the ultrasound findings are commonly used to detect early pregnancies.[7] Early diagnosis and effective treatment are essential to reduce the immediate and delayed side effects, with a significant reduction of maternal morbidity and mortality. Advances in ultrasound technology and

development of diagnostic tests increases the early diagnosis for non-tubal ectopic pregnancy. In this paper, we report a single-centre experience in the management of non-tubal ectopic pregnancies with the aim of outlining and suggesting the best possible strategy for fertility sparing in hemodynamically stable patients. Since the incidence of non-tubal ectopic is increasing so the need of the hour is that every gynaecologist should be well versed at suspecting, and managing the same. There is no specific guidelines for diagnosis and management of non-tubal ectopic pregnancies and by sharing experience a specific guideline can be formed.

CASE SERIES

In one year duration 72 patients were diagnosed with ectopic pregnancy in the department of OBG of Dr. Rajendra Prasad Government Medical College at Tanda out of which 7 patients had nontubal ectopic pregnancy, which were recruited in the study after taking approval of review committee and institutional ethics committee with No-IEC/177/2019.

A detailed history of enrolled patients were recorded regarding demographic profile of patients, presenting complaints, period of amenorrhoea, abdominal pain, bleeding per vagina and vomiting. In case of hemodynamically unstable patient immediate necessary resuscitative measures were taken. Detailed obstetric and menstrual history and history regarding risk factors of ectopic pregnancy i. e.; past history of infertility, PID, previous ectopic pregnancy, previous pelvic surgery, contraception and tuberculosis were taken. Detailed general physical and systemic examination was done. Pelvic examination including per speculum and per vaginum examination for size of uterus, cervical motion tenderness and presence of any adnexal mass was noted.

Necessary investigations like complete hemogram, ABO-Rh typing for cross match and arrangement of blood, beta-HCG, serum electrolytes, liver function test (LFT), renal function test (RFT) were sent. Modalities used for the diagnosis of ectopic pregnancy like transvaginal ultrasound, transabdominal ultrasound and MRI (if needed) were carried out. Patients were managed medically and surgically.

Demographic profile and clinical characteristics of the study patients are summarized in Table 1 and 2. Diagnosis was made on the basis of clinical findings, Beta HCG levels and USG as listed in Table 2. Emergency laparotomy was done in hemodynamically unstable patients of ovarian (2), rudimentary horn (1) ectopic pregnancy and heterotopic ectopic pregnancy (1) with ruptured ectopic and live intrauterine gestation. In cervical ectopic pregnancy (1) and LSCS scar pregnancy (1) conservative management with medical and surgical approach was done.

Abdominal pregnancy (1) was diagnosed on table where the patient was taken up for elective LSCS in view of breech with vasa praevia. In this patient, exploratory laparotomy proceed extraction of products of conceptus (fetus+placenta) from peritoneal cavity with omentectomy with right salpingo-oopherectomy was done as the placenta was attached to omentum and adherant to right fallopian tube and ovary.

Table 1: Demographic profile, obstetrics and gynaecology history of the cases.

Case	Ectopic pregnancy	Age (years)	Obstetric and gynecology history	Gravida	Pregnancy onset	Period of gestation	Referral status
1	Ovarian (1)	25	Not significant	PGR	Spontaneous	6-8 weeks	Referred
2	Ovarian (2)	27	Not significant	PGR	Spontaneous	6-8 weeks	Referred
3	Cervical	31	Previous LSCS	G2P1001	Spontaneous	11 weeks 3 days	Referred
4	Rudimentary horn	22	Not Significant	PGR	Spontaneous	7 weeks 5 days	Not referred
5	CS scar	27	Previous LSCS	G2P1000	Spontaneous	9 weeks 5 days	Referred
6	Heterotopic	27	Conception after ovulation induction	PGR	Conception after ovulation induction	7 weeks 2 days	Not referred
7	Abdominal	28	Not significant	PGR	Spontaneous	36 weeks 3 days	Referred

Table 2: Clinical presentation and USG findings of the cases.

Case no.	Ectopic pregnancy	Clinical presentation	USG findings
1	Ovarian	Amenorrhoea+abdominal pain+hemoperitoneum	Empty uterine cavity, echogenic ring with internal anechoic area in ovary, free fluid in pelvic cavity
2	Ovarian	Amenorrhoea+abdominal pain+hemoperitoneum	Empty uterine cavity, echogenic ring with internal anechoic area in ovary, free fluid in pelvic cavity

Continued.

Case no.	Ectopic pregnancy	Clinical presentation	USG findings
3	Cervical	Amenorrhoea+excessive bleeding per vaginum+shock	Empty uterine cavity, barrel shaped cervix, G sac in the endocervical canal, absent sliding sign, increased blood flow around G-sac on Doppler
4	Rudimentary horn	Amenorrhoea+abdominal pain+hemoperitoneum	Mass 5×5 cm in left adnexa, evidence of 2 endometrial cavities, mass seen separate from uterus and surrounded by myometrium
5	CS scar	Amenorrhoea+BPV	Empty uterine cavity, G sac present anteriorly at the level of previous scar invading into the myometrium empty endocervical canal
6	Heterotopic	Amenorrhoea+abdominal pain+hemoperitoneum	Evidence of Intrauterine G sac with foetal pole inside with FCA of 6 weeks 1 day, significant amount of free fluid in pelvis as well as in peritoneal cavity including hepatorenal space
7	Abdominal	Amenorhhoea for 9 months with APH (vasa praevia)+breech presentation	SLIUF with breech presentation with placenta anterior maternal right upper with separate lobe of placenta which is smaller than main placenta, succenturiate lobe with e/o multiple tortous, anechoic dilated high flow vascular channels seen in lower uterine segment overlying cervix s/o vasa praevia (intra-operative diagnosed as abdominal pregnancy)

Table 3: Management of non-tubal ectopic pregnancy cases.

Type of ectopic pregnancy	Management	Outcome
Ovarian (2)	Exploratory laparotomy proceed with U/L salphingo-oopherectomy	1. Blood transfusion 2 unit 2. Discharged on Day 3. 3. HPE Report: Blood clots with chorionic villi with ovarian stroma.
Cervical (1)	Examination under anaesthesia followed by Dilatation and curettage followed by Foley's balloon tamponade followed by ligation of the descending branches of uterine arteries	1.ICU admission 24 hrs 2. 4 units of blood transfusion 3. Beta HCG Day 1-1347 mIU/ml 4. Beta HCG Day 7-141 mIU/ml 5. HPE report: Cervical glands present with the trophoblastic tissue.
Cornual (1)	Exploratory laparotomy proceed excision of noncommunicating rudimentary horn	1. One unit BT 2. Discharged on day 4
Heterotopic (1) pregnancy	Exploratory laparotomy proceed left salpingectomy for ruptured left tubal ectopic pregnancy	1. BT-2 unit 2. Discharged on post-op day 7 3. Routine antenatal follow up of intrauterine pregnancy 4. Had FTVD at 38 weeks 2 days of MCH with baby weight 2.5 kg.
CS scar pregnancy (1)	Injection methotrexate 75 mg (day 1) given followed by suction and evacuation (day 8)	1. BT- 2 unit+1 unit FFP 2. B-HCG-34793 mIU/ml (D-1), B-HCG- 99, 940 mIU/ml (D-4) (increasing value of B-HCG), B-HCG-82677 mIU/ml (D-7) 3. There was falling values of B-HCG post suction and evacuation 4. Discharged on day-12.
Abdominal pregnancy	Exploratory laparotomy proceed extraction of products of conceptus (fetus+placenta) from peritoneal cavity with omentectomy with right salpingo-oopherectomy	1. BT- 2 unit+1platelet concentrate+1 FFP. 2. Baby alive and healthy 3. Discharged on day 5 4. Post-operative period uneventful.

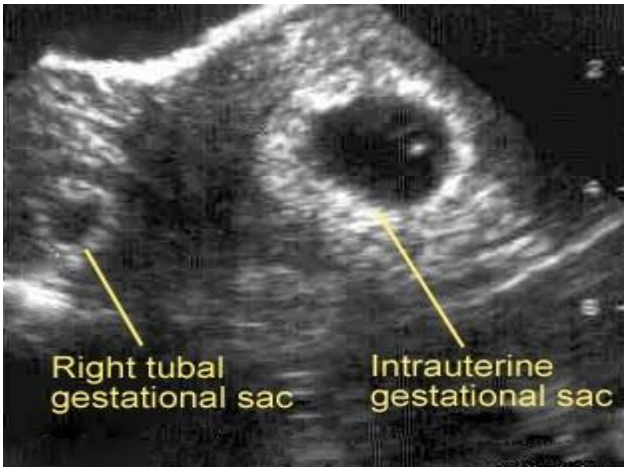

Figure 1: USG of heterotopic pregnancy.

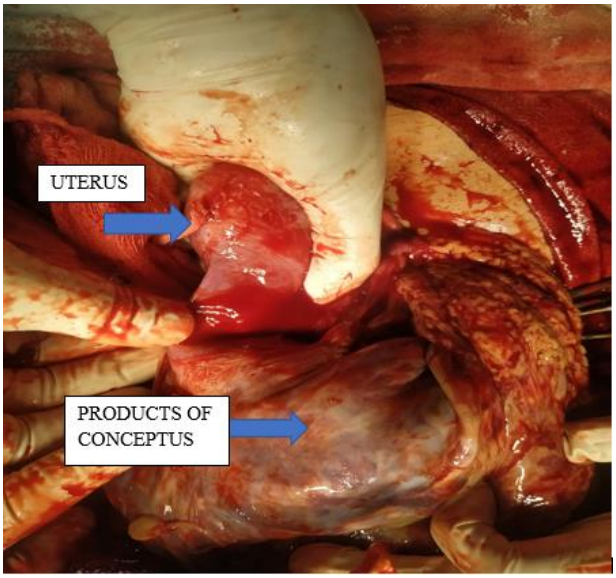

Figure 2: Intra-operative images of abdominal pregnancy.

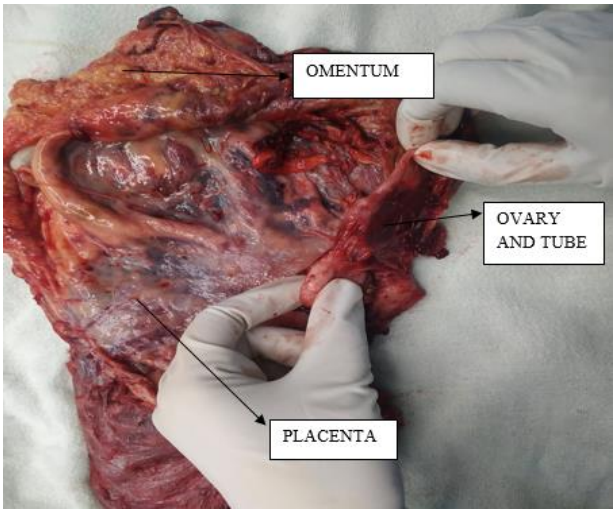

Figure 3: Intra-operative images.

DISCUSSION

Non-tubal ectopic pregnancy represent an important challenge for the gynecologist because of the rarity of the disease and the lack of guidelines for its management.[8]

With the availability of transvaginal ultrasound, early diagnosis of the ectopic pregnancy is possible helping the gynaecologist in choosing appropriate management.[9] Once diagnosed, Patient should be referred to centre of excellence for better management on strong suspicion of non-tubal ectopic pregnancy before the appearance of life-threatening complications.[10] The management of each patient must be individualised based on clinical symptoms, viability of pregnancy, gestational age, hCG levels and women wish for future fertility.

We have presented 7 cases of nontubal ectopic pregnancy and their subsequent outcome of our centre over 1 year duration.

All the cases in our study were in the age group of 21-30 years, and most were primigravida and had spontaneous conception with no identifiable risk factor in majority of the cases and previous LSCS has been the only identifiable risk factor in LSCS scar pregnancy and cervical pregnancy. The literature suggests that advanced age, PID, previous abdominal surgery, use of IUD, smoking and use of assisted reproductive technology being the identifiable risk factor in non-tubal ectopic pregnancy. The later presentation of non-tubal ectopic pregnancies may be due to delay in the diagnosis of these rare pregnancies as clinician have low level of suspicion leading to increase in the incidence of non-tubal ectopic pregnancy.

In general, the primary treatment option for most cornual and ovarian ectopic pregnancy is surgery; medical treatment with systemic MTX (50 mg/m^2 body surface area) or local MTX (1 mg/kg body weight)) is preferred for cervical and cesarean scar pregnancy.[11]

Women with contraindication for medical management and haemodynamically unstable patients with clinical signs of ruptured nontubal ectopic pregnancy or evidence of intra-abdominal bleeding require urgent surgical laparotomy.[12] Future fertility and contralateral fallopian tube status have to be taken into consideration when surgical approach is chosen.

Cervical pregnancy

Cervical ectopic pregnancy is extremely rare accounting for less than 1% of all ectopic pregnancy and have high risk of hemorrhage and hysterectomy was the only treatment option available previously, leading to loss of fertility.[13]

With advancement in transvaginal ultrasound, early diagnosis of cervical ectopic pregnancy has become possible with the possibility of conservative management.

The patient of cervical pregnancy was referred from periphery after one attempt of suction evacuation in view of incomplete abortion. In our centre she was diagnosed as case of cervical pregnancy, was examined under anaesthesia, dilatation and curettage was done with Foley's balloon tamponade followed by ligation of the descending branches of uterine arteries.

Cesarean scar pregnancy

Increase in incidence of LSCS deliveries worldwide has lead to increase in the incidence of caesarean scar pregnancy, 72% cases occurs in women with previous 2 LSCS deliveries.[14,15] Diagnosis is usually made with the help of transvaginal ultrasound and Doppler ultrasound in early pregnancy with evidence of gestational sac at previous scar and myometrial thinning.[16]

Treatment option for previous scar ectopic pregnancy have been alone surgical procedure like curettage or suction or with medical treatment with methotrexate. Alone medical management not very effective method because absorption and efficacy of methotrexate is reduced by the fibrous tissue surrounding the gestational sac.[17]

In our centre previous scar pregnancy have been successfully managed with injection methotrexate followed by suction and evacuation with follow up with B-HCG levels

Ovarian pregnancy

Ovarian pregnancy is a rare event, with incidence of 3% of all ectopic pregnancy. And mostly present with haemoperitoneum with features of haemodynamic instability due to highly vascular nature of the ovary. A more echogenic wide ring on the ovary, compared with the ovarian tissue, a yolk sac or fetal parts are ultrasonographic findings for ovarian pregnancy.

Surgical treatment is the most frequent approach, and an oophorectomy or a wedge resection of the ovary is usually required.[18] We managed the case of ovarian ectopic by salpingooophertomy confirmed by HPE report.

Abdominal pregnancy

Abdominal pregnancy is defined as pregnancy anywhere within the peritoneal cavity and represents around 1-1.5% of all ectopic pregnancy. There is increased incidence of maternal and perinatal mortality of 2-30% and 40-95%. respectively particularly due to delay in diagnosis or remaining undiagnosed till the later gestation like in our case. Transvaginal ultrasound is the first-line tool for diagnosis and in cases with high degree of suspicion MRI should be considered specially to know the extent of the placental tissue invasion to the abdominal and pelvic organs.[19]

The management of abdominal pregnancy requires multidisciplinary approach involving the general surgeon, urologist, gynaecologist and requires transfusion of blood and blood products. In our centre patient with abdominal pregnancy was referred from periphery at 36 weeks with breech presentation with low lying placenta with APH (Vasa praevia). Ultrasound and MRI done at our centre gave us the similar report. During elective surgery, opening the abdomen fetus and placenta in sac was lying in the abdominal cavity. It was successfully managed with exploratory laparotomy proceed extraction of products of conceptus (fetus+placenta) from peritoneal cavity with omentectomy with right salpingo-oopherectomy. On examination bilateral fallopian tubes and ovaries with uterus was normal with no evidence of any fistula. On reviewing the ultrasounds done at early gestation there was no evidence of free fluid in the pelvic cavity. Since she presented late it is difficult to document whether it was an ease of primary or secondary abdominal pregnancy.

The main limitation in management of NTE is lack of any specific guidelines due to rarity of the disease. The treatment should be individualised depending on the clinical presentation, time of diagnosis and preservation of future fertility for these patients.

CONCLUSION

The tertiary centre for non-tubal ectopic management should have well trained surgeons in minimally invasive surgery with specific skills, reducing risks of life-threating haemorrhage, hysterectomy and preserving future fertility.

ACKNOWLEDGEMENTS

We thank all the pregnant women, doctors, nurses and other staff of our department without whose collaboration this study would not have been possible.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. PrameelaRC, DevSV. Cervical ectopic pregnancy: 10 year experience at tertiary care hospital and current literature review.Int J Reprod Contracept Obstet Gynecol. 2016;5:734-42.
2. Kirk E, Condous G, Bourne T. The non-surgical management of ectopic pregnancy. Ultrasound Obstet Gynecol. 2006;27(1):91-100.
3. Petersen K, Hoffmann E, Larsen C, Nielsen H. Cesarean scar pregnancy: a systematic review of treatment studies. Fertil Steril. 2016;105(4):958-67.
4. Long Y, Zhu H, Hu Y, Shen L, Fu J, Huang W. Interventions for non-tubal ectopic pregnancy. Cochrane Database Syst Rev. 2020;7(7):CD011174.

5. Chetty M, Elson J. Treating non-tubal ectopic pregnancy. Best Pract Res Clin Obstet Gynaecol. 2009;23(4):529-38.
6. Fylstra DL. Ectopic pregnancy within a cesarean scar: a review. Obstet Gynecol Surv. 2002;57(8):537-43.
7. Kochi K, Hidaka T, Yasoshima K, Yoneda K, Arai K, Arai T. Cervical pregnancy: a report of four cases. J Obstet Gynaecol Res. 2014;40(2):603-6.
8. Practice Committee of American Society for Reproductive Medicine. Medical treatment of ectopic pregnancy: a committee opinion. Fertil Steril. 2013;100(3):638-44.
9. Fenning N, Sur S, Horne AW, Wilkinson H, Bourne T. Pregnancy of unknown viability or location: less is more in the majority of cases. J Fam Plann Reprod Health Care. 2012;38(1):7-10.
10. Alalade AO, Smith FJE, Kendall CE, Odejinmi F. Evidence-based management of non-tubal ectopic pregnancies. J Obstet Gynaecol. 2017;37(8):982-91.
11. Dolinko AV, Vrees RA, Frishman GN. Non-tubal Ectopic Pregnancies: Overview and Treatment via Local Injection. J Minim Invasive Gynecol. 2018;25(2):287-96.
12. Panelli DM, Phillips CH, Brady PC. Incidence, diagnosis and management of tubal and nontubal ectopic pregnancies: a review. Fertil Res Pract. 2015;1:15.
13. Taylor JE, Yalcinkaya TM, Akar ME. Successful conservative management of cervical ectopic pregnancy: a case series. Arch Gynecol Obstet. 2011;283(6):1215-7.
14. Giampaolino P, De Rosa N, Morra I, Bertrando A, Di Spiezio Sardo A, Zizolfi B, et al. Management of Cesarean Scar Pregnancy: A Single-Institution Retrospective Review. Biomed Res Int. 2018;2018:6486407.
15. Deans R, Abbott J. Hysteroscopic management of cesarean scar ectopic pregnancy. Fertil Steril. 2010;93(6):1735-40.
16. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. Ultrasound Obstet Gynecol. 2003;21(3):220-7.
17. Lacroix S, Li F, Bujold E, Nesbitt-Hawes E, Deans R, Abbott J. Cesarean Scar Pregnancies: A Systematic Review of Treatment Options. J Minim Invasive Gynecol. 2017;24(6):915-25.
18. Kraemer B, Kraemer E, Guengoer E, Juhasz-Boess I, Solomayer EF, Wallwiener D, et al. Ovarian ectopic pregnancy: diagnosis, treatment, correlation to Carnegie stage 16 and review based on a clinical case. Fertil Steril. 2009;92(1):392-5.
19. Abdul N, Abdul J, Saquib S, Mohammed TWE. Successful Management of Abdominal Pregnancy: Two Case Reports. Oman Med J. 2018;33(2):171-5.

Cite this article as: Dwivedi N, Mahajan M, Gupta A, Vij A. Management of non-tubal ectopic pregnancies: rural tertiary care centre experience. Int J Reprod Contracept Obstet Gynecol 2023;12:3171-6.