Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI:10.21474/IJAR01/6324
DOI URL: http://dx.doi.org/10.21474/IJAR01/6324

RESEARCH ARTICLE

HETEROTOPIC PREGNANCY: A DIAGNOSTIC CHALLENGE - A REPORT OF 2 CASES.

[1]Nitin Yadav, [2]Meenakshi Yadav, [3]Pranav Pandoh, [4]Roomi Yadav*, [5]Jyotsna Sen and [6]Rohtas K Yadav.

1. Assistant Professor, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.
2. Junior Resident, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.
3. Senior Resident, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.
4. Junior Resident, Department of Pathology, Pt. B D Sharma PGIMS, Rohtak.
5. Professor, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.
6. Professor & Head, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.

Manuscript Info

Manuscript History

Received: 16 November 2017
Final Accepted: 18 December 2017
Published: January 2018

Key words:-
ectopic, heterotopic, pregnancy.

Abstract

Heterotopic pregnancy is simultaneous occurence of an intrauterine and an ectopic pregnancy. It requires management on an emergent basis. Increasing incidence of ectopic and heterotopic pregnancies has been attributed to use of assisted reproductive technology. We report two cases of heterotopic pregnancies, one of which presented as a normal intrauterine pregnancy and the other as an ectopic pregnancy. These cases highlight increased amount of vigilance required to make a correct diagnosis of heterotopic pregnancy.

Introduction:-

Increasing incidence of ectopic pregnancy has been noted recently due to increasing use of assisted reproductive technology (ART).[1] Heterotopic pregnancy is defined as co-existence of a normal intrauterine pregnancy with an ectopic pregnancy. It is more sinister than ectopic pregnancy as there is a common tendency to miss the ectopic gestation sac once the intrauterine sac is visualised. Hence, it is not uncommon for these patients to present with ruptured ectopic, making the diagnosis more difficult and requiring urgent intervention to save the mother and the intrauterine fetus.

Case 1:-

A 29 year old female (gravid 2, para 1) with 2 months of amenorrhea presented with history of pelvic pain and menstrual spotting since 1 day. She had history of prior uneventful normal vaginal delivery 5 years ago. She had been receiving treatment for secondary infertility due to polycystic ovarian disease since last 1 year. She conceived following multiple ovulation induction cycles with clomiphene citrate. On examination, her vital parameters were normal. She had tenderness in lower abdomen and there was left adnexal tenderness on bimanual examination. Clinical differential diagnosis included subchorionic hemorrhage and ectopic pregnancy.

The patient had a prior ultrasonography(USG) pelvis done at a primary care centre 3 weeks back which showed a normal intrauterine pregnancy of 5 weeks gestation. Bilateral adnexae were reported as normal. USG done at presentation at our institute showed a normal intrauterine gestation sac with foetal pole and gestational age of approximately 9 weeks. Fetus was viable with presence of cardiac activity**.** Left adnexa appeared bulky on transabdominal scan. Transvaginal ultrasonography (TVS) was done for further evaluation. TVS confirmed the

Corresponding Author:- Roomi Yadav.
Address:- Junior Resident, Department of Pathology, Pt. B D Sharma PGIMS, Rohtak.

intrauterine gestation sac containing foetus **(Figure 1)**. Right ovary was normal. Left adnexa showed a normal sized left ovary. Additionally, left adnexa showed an ectopic gestation sac with foetus of approximately 7 weeks size **(Figure 2).** Cardiac activity was also noted within this foetus. No free fluid was noted in pelvis. A diagnosis of heterotopic pregnancy was considered. Laparotomy was done with left salphingostomy and removal of ectopic at isthmus of left fallopian tube. Patient was stable post operatively and intrauterine gestation was continued successfully.

Case 2

A 34 year female (gravid 3, para 2) presented with history of amenorrhea since 5 weeks and lower abdominal pain. She was on treatment for Pelvic inflammatory disease since last 1 year. Urine pregnancy test was positive. On examination, the patient had tenderness and guarding in right iliac fossa and pelvis. The patient had a USG report from outside which showed a right adnexal mass labelled as ectopic gestation. Patient was referred to us for USG pelvis to confirm the diagnosis.

Transabdominal scan didn't reveal any intrauterine gestational sac and showed a hypoechoic lesion in right adnexa. Transvaginal scan showed small intrauterine gestation sac of approximately 4 weeks size **(Figure 3).** Left ovary was normal. Right adnexa showed a hypoechoic lesion adjacent to a normal appearing right ovary. On Doppler examination, circumferential ring of increased vascularity was noted surrounding the lesion **(Figure 4).** However, no definite fetal pole could be delineated within the lesion. Mild free fluid with echoes was also noted in pouch of Doughlas. A possibility of heterotopic pregnancy was considered. Initially patient was managed conservatively. However, the patient developed increasing pain and tachycardia. Laparotomy and right salphingostomy was done. Post operative histopathology revealed products of conception within the removed contents consistent with the diagnosis of right adnexal ectopic pregnancy. Interval termination of intrauterine pregnancy was done since the patient didn't want to continue the same.

Discussion:-

There has been a significant increase in prevalence of infertility among women in the last decade, especially in urban areas. It has been attributed to changing lifestyle, delayed marriage and stress.[2] With increase in infertility rates, there has been a proportionate increase in couples seeking assisted reproductive technology for childbirth. Use of ovulation induction in women with polycystic ovarian disease has become commonplace in infertility clinics.[3]An increase in incidence of ectopic and heterotopic gestation can be attributed partly to these factors.

Heterotopic pregnancy is defined as simultaneous presence of intrauterine and ectopic gestations. The incidence, which was previously reported to be around 1:30000, has now increased to 1:8000 in general population. In patients with history of assisted reproductive techniques, incidence as high as 1% has been reported by some authors.[4,5]

Risk factors for heterotopic pregnancy are similar to those for ectopic gestation. These include factors which cause damage to fallopian tubes like endometriosis, pelvic inflammatory disease, prior salpingostomy and prior ectopic pregnancy. Uterine anomalies, history of prior pelvic surgery and use of ART also predispose to ectopic pregnancy.[6] Indeed, one of the patients we have reported had history of ART and other was on treatment for pelvic inflammatory disease.

It is pertinent to be extra cautious while doing USG in pregnant women with history of these risk factors. Failure to do so may easily lead one to miss the second sac in heterotopic pregnancies. The USG examination should not end with visualisation of intrauterine gestational sac. A detailed examination of adnexae should be a part of each and every TVS examination in pregnant women with or without the risk factors for ectopic pregnancy. This has been supported by various authors of late, due to rising incidence of ectopic and heterotopic pregnancies. In the first case which we have reported, the tubal ectopic sac was missed on USG done outside. Kwok et al have proposed a new dictum 'Think ectopic. If intrauterine gestation is seen, think heterotopic.' It is time to adopt this dictum into our clinical practice to avoid the complications of rupture of ectopic sac and resultant hemorrhagic shock.[6]

Further, we want to highlight that it may be difficult to diagnose heterotopic pregnancy when the patient presents quite early with pain and an ectopic sac is visualised in adnexa. Intrauterine gestation sac may be small at that time and may be missed or mistaken for pseudo gestational sac. With use of assisted reproductive techniques, the intrauterine pregnancy in question may be significant for the patient and inappropriate management of ectopic sac may put the intrauterine foetus into jeopardy. This thus warrants a thorough TVS examination of uterine cavity in

these patients. One may hurry into reporting adnexal ectopic due to unstable hemodynamic status of the patient. However, one must not forget the possibility of heterotopic with each ectopic. In the second case which we reported, the patient had been labelled as having tubal ectopic on a prior USG. The role of careful TVS in these patients cannot be over-emphasized.

Lastly, it is also important to note that in patients with history of ovulation induction, ovaries may appear enlarged and heterogenous. Enlarged follicles and luteal cysts may create an appearance quite similar to an ectopic gestational sac.[7,8] These patients may thus be labelled as heterotopic gestation and may lead to unnecessary surgical management. β-hCG is not helpful in these cases as the intrauterine pregnancy masks the changes in β-hCG due to ectopic gestational sac.[9] A careful TVS and a close follow up may solve the dilemma in most of the cases. It is prudent to use laparoscopy if the diagnosis remains uncertain despite follow up imaging.[10]

Patients with heterotopic pregnancy are managed by laparotomy if the patient is hemodynamically unstable. Laparoscopic management of the ectopic sac may be considered in hemodynamically stable patients. The uterus needs to be handled with extra caution in these patients as the intrauterine pregnancy may be precious.[9]With early diagnosis and prompt management, a significant proportion of intrauterine pregnancies in such cases will reach to term.

Conclusion:-

To conclude, a thorough TVS of each pregnant patient is mandatory at first visit to rule out the possibility of ectopic or heterotopic pregnancy. Visualisation of an intrauterine or an extrauterine gestation sac is no longer an end point of TVS examination.[11] Thorough examination of uterus and bilateral adnexae should be the rule in this era of increasing incidence of ectopic pregnancies.

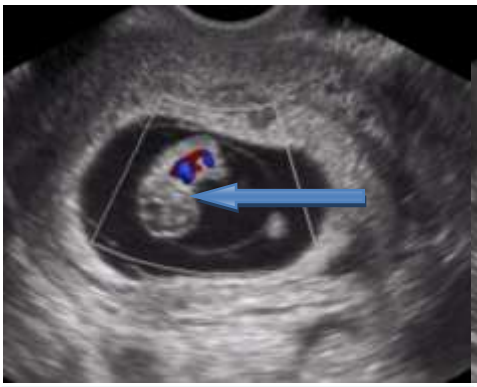

Figure 1:- TVS scan (case 1) showing intrauterine viable foetus (arrow).

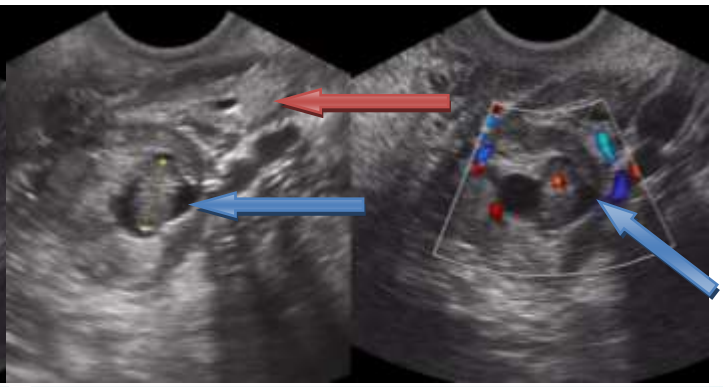

Figure 2:- TVS scan (case 1) showing viable foetus within left adnexal ectopic (blue arrows). Adjacent normal ovary is visualised (red arrow).

Figure 3:- TVS scan (case 2) showing small intrauterine gestational sac (arrow) with thickened endometrium.

Figure 4:- TVS scan (case 2) showing circumferential vascularity (arrow) around the ectopic sac in right adnexa.

References:-

1. Luo X, Lim CE, Huang C, Wu J, Wong WS, Cheng NC. Heterotopic pregnancy following in vitro fertilization and embryo transfer: 12 cases report. Archives of Gynecology and Obstetrics. 2009;280(2):325-9.
2. Ganguly S, Unisa S. Trends of infertility and childlessness in India: findings from NFHS data. Facts, Views & Vision in ObGyn. 2010;2(2):131-8.
3. Brown J, Farquhar C, Beck J, Boothroyd C, Hughes E. Clomiphene and anti-oestrogens for ovulation induction in PCOS. Cochrane Database Syst Rev. 2009 Jan 1;4(4).
4. Press GM, Martinez A. Heterotopic pregnancy diagnosed by emergency ultrasound. The Journal of Emergency Medicine. 2007;33(1):25-7.
5. Yu Y, Xu W, Xie Z, Huang Q, Li S. Management and outcome of 25 heterotopic pregnancies in Zhejiang, China. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2014;180:157-61.
6. Kwok TC, Morgan G. Think heterotopic: A case report of heterotopic pregnancy detected on thorough ultrasonography. Journal of Medical Cases. 2012;3(5):326-8.
7. Avitabile NC, Kaban NL, Siadecki SD, Lewiss RE, Saul T. Two Cases of Heterotopic Pregnancy. Journal of Ultrasound in Medicine. 2015;34(3):527-30.
8. Noor N, Bano I, Parveen S. Heterotopic pregnancy with successful pregnancy outcome. Journal of Human Reproductive Sciences. 2012;5(2):213-6.
9. Gupta A, Gupta A, Gupta B, Mahajan N, Vij A, Chadda A. Heterotopic pregnancy: a case report. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2017;6(5):2121-3.
10. Barrenetxea G, Barinaga-Rementeria L, de Larruzea AL, Agirregoikoa JA, Mandiola M, Carbonero K. Heterotopic pregnancy: two cases and a comparative review. Fertility and Sterility. 2007;87(2):417e9-15.
11. Smiti S, Raghu HR. Case report: Spontaneous heterotopic pregnancy presenting with abdominal pain. Indian Journal of Radiology and Imaging. 2007;17(4):275-6.