

# Conservative Surgery for Ruptured Ovarian Pregnancy in an Elderly Primigravid

**Aina Veronica Isman, MD and Barbara Jane R. Papa, MD, FPOGS**

Department of Obstetrics and Gynecology, University of Perpetual Help Dalta Medical center Las Pinas

Primary ovarian ectopic pregnancy, is one of the rarest forms of ectopic pregnancy. Ovarian ectopic pregnancy may occur with or without the presence of any of the classical risk factors or signs and symptoms. The diagnosis is made often at surgery and requires histologic confirmation. This is a case of a primary ovarian pregnancy in a 36 year old elderly primigravid who presented with abdominal pain and subsequently underwent ovarian wedge resection. Diagnosis of ovarian pregnancy was later confirmed using the Spiegelberg criteria. This paper presents a review of literature regarding ovarian pregnancy's clinical presentation, risk factors, and the possibility of a conservative management.

## Introduction

Primary ovarian ectopic pregnancy, is one of the rarest forms of ectopic pregnancy.<sup>1</sup> Its incidence after natural conception ranges from 1 in 2000 to 1 in 60 000 deliveries and accounts for 3% of all ectopic pregnancies. Suggested risk factors are younger age, endometriosis, pelvic inflammatory disease, intra-uterine devices, ovulatory medications and assisted reproductive techniques.<sup>2</sup>

It is difficult to establish an accurate preoperative diagnosis of this type of ectopic pregnancy, as this is characterized by a poor clinical symptomatology and a difficult ultrasound diagnosis. Ultrasound may often prove to be a useless modality, as it has a very high incidence of misdiagnosis. The surgical criteria for primary ectopic ovarian pregnancy also remain hard to prove.<sup>1</sup>

The aim of this article is to report a case of primary ovarian pregnancy, and to present a thorough review of the literature regarding its specific symptoms, diagnostic criteria and treatment options for this particular pathology.

## The Case

This is a case of a 36 year old, primigravid, amenorrhoeic for 6 weeks, who came in due to hypogastric pain. Patient has no known co-morbidities. She underwent laparoscopic appendectomy in 2002. Patient is a non-smoker and a non-alcoholic beverage drinker. She had 3 non-concurrent sexual partners. She had intermittent hypogastric pain 5/10 pain scale for 3 days, dull in character, non-radiating with associated scanty brownish discharge. There were no other associated signs and symptoms such as fever, vomiting, change in bowel movement or dysuria.

On physical examination, vital signs were stable. There were no signs of pallor, abdomen was flat and soft, but with tenderness at the hypogastric area. No direct and rebound tenderness noted on the right lower quadrant area. There was no costovertebral angle tenderness. Patient was negative for Rovings' sign, Obturator sign and Psoas sign. On speculum exam, the cervix was pink and smooth, with minimal whitish non-foul smelling discharge.

On internal exam, the cervix was soft and closed, uterus was not enlarged, no cervical motion tenderness, but with right adnexal tenderness and cul de sac fullness. On rectovaginal examination, there was good sphincteric tone with smooth and free parametria.

At the emergency room, a STAT transvaginal ultrasound (Figure 1) revealed a gestational sac-like structure located medial to the right ovary which measured 2.24cm x 2.23cm x 1.44cm, suspicious of an ectopic gestation, with minimal fluid with

echogenic debris noted at the cul-de-sac. At this time, patient complained of increase in the severity of hypogastric pain now 8/10 in pain scale. Patient's blood pressure was stable at 100/60 but was tachycardic at 108 bpm. Abdomen was noted to have generalized tenderness on all quadrants, with guarding. Patient was immediately admitted with a diagnosis of ectopic pregnancy. She was then immediately brought to the operating room and Stat exploratory laparotomy was done.

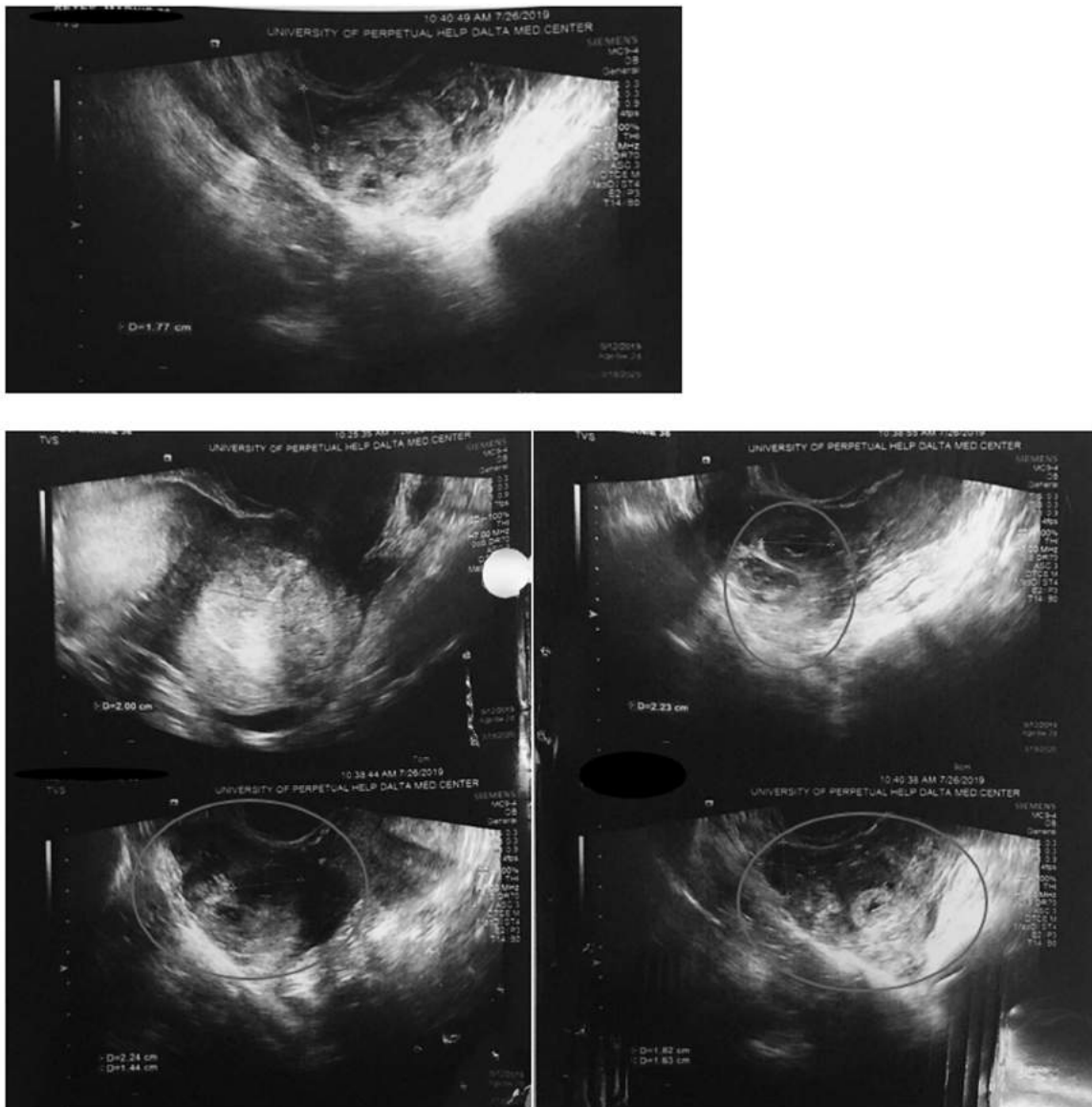


Figure 1. Transvaginal ultrasound, circles indicating ovarian tissue with gestational sac

On exploration, approximately 1000 cc of hemoperitoneum was noted. The right fallopian tube was grossly normal. Right ovary was cystically enlarged to 5cm x 4cm, with a 2cm point of rupture. A gestational sac was noted at the ruptured portion of the right ovary. The left fallopian tube and left ovary were densely adherent to the posterior uterus. The uterus was normal in size and pink in color. (Figure 2). The surgeons proceeded to do a wedge

resection of the right ovary. Estimated blood loss was 1,500cc. Patient was transfused with 2 units packed RBC intraoperatively.

Patient had an uneventful postoperative course and was discharged on post op day 3.

Histopathologic study revealed immature placental tissues (chorionic villi) and corpus luteum tissues. (Figure 3). The Spiegelberg clinical criteria were met. These were outlined by: 1) the

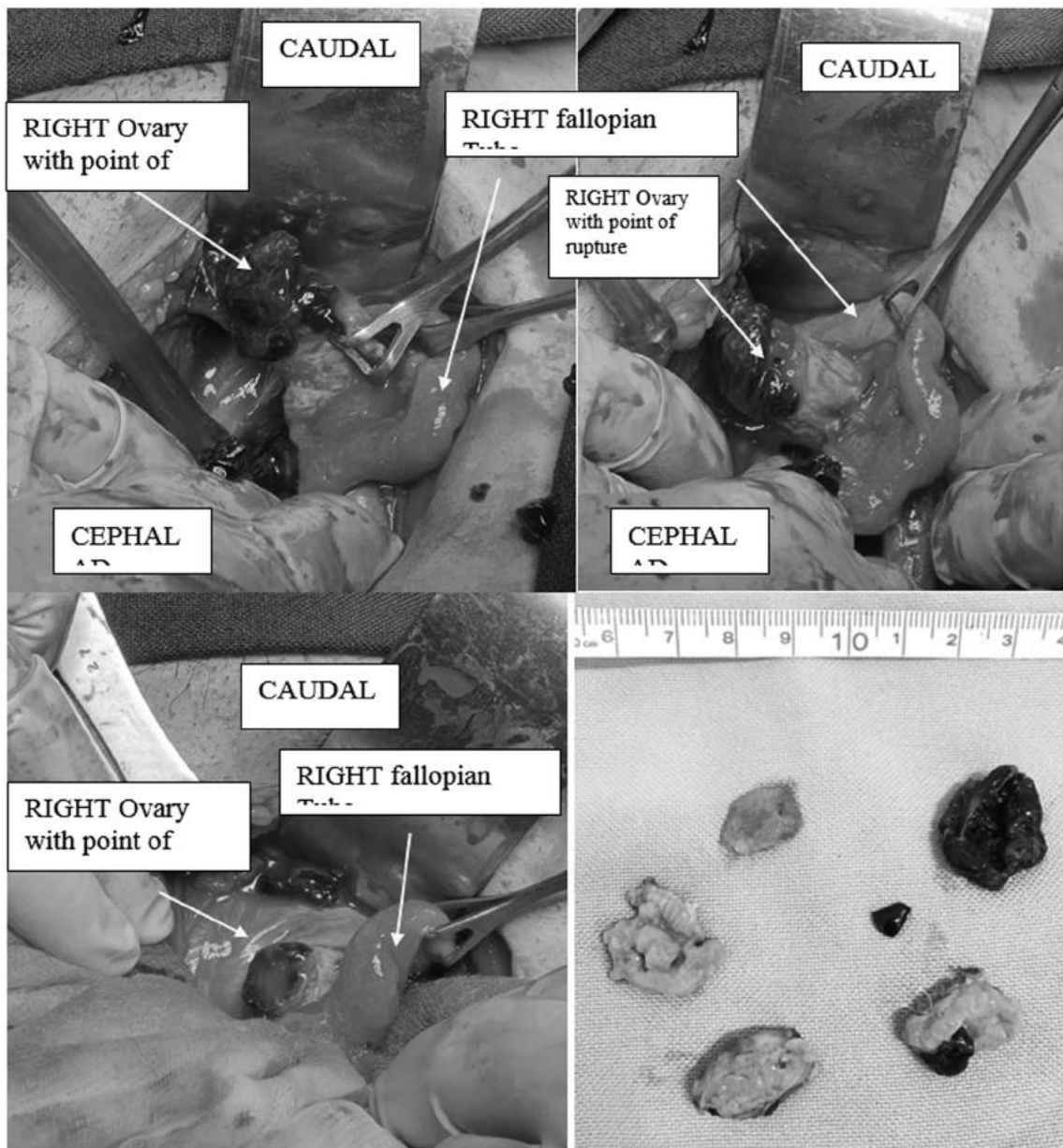
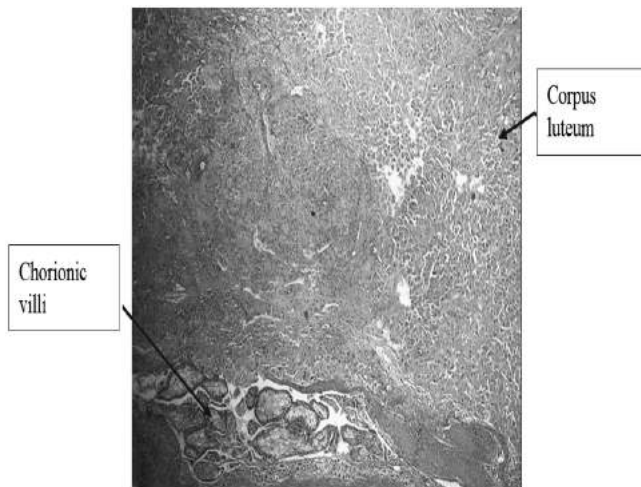


Figure 2. Right ovary with point of rupture.



ipsilateral tube was intact and distinct from the ovary; 2) the ectopic pregnancy occupied the ovary; 3) the ectopic pregnancy was connected by the uteroovarian ligament to the uterus; and 4) ovarian tissue demonstrated histologically amid the placental tissue.



**Figure 3.** Histopathology of ovarian ectopic pregnancy

## Discussion

Primary ovarian ectopic pregnancy is one of the rarest forms of ectopic pregnancy. Its incidence after natural conception ranges from 1 in 2000 to 1 in 60 000 deliveries and accounts for 3% of all ectopic pregnancies. Suggested risk factors are younger age, endometriosis, pelvic inflammatory disease, intrauterine devices, ovulatory medications and assisted reproductive techniques. Intrauterine copper device was found to be a risk factor for ovarian ectopic pregnancy. Intrauterine copper device prevents uterine implantation, tubal implantation by 99.5% and 95% respectively, without any effect on ovarian ectopic pregnancy.

Primary ovarian ectopic pregnancy may occur without the presence of any of the classical risk factors or symptoms/signs, and should be entertained as one of the important differential diagnoses in a female of reproductive age group with a history of amenorrhea of short duration. Clinically, presentations are variable. This range includes a totally asymptomatic patient, or a patient with

pelvic pain of different degrees or even total collapse. She may have pallor and signs of hypotension.

High-resolution transvaginal ultrasonography (TVS) can beautifully demonstrate normal and abnormal embryonic development from the earliest stage as small as 4–5 weeks of gestation and hence is naturally the best method to detect ovarian pregnancy at the earliest. It must however be remembered that a completely normal pelvic TVS scan may be present in 15–20% of patients with ectopic pregnancy. Hence, adequate follow-up and clinical correlation with serum human chorionic gonadotropin (HCG) values is a must.

Prior to surgery, diagnosis of ovarian ectopic pregnancy is seldom made, even transvaginal sonography may miss the diagnosis and may not be very useful in diagnosing this condition. The index patient here had an emergency scan done prior to surgery, but the modality failed to make a correct diagnosis preoperatively.

Diagnosis is based on the classic description of a cyst with a wide ectogenic outer ring using ultrasound. Although ultrasound may suggest the diagnosis, surgery (laparoscopy or laparotomy) remains the best method of a differential diagnosis and management.<sup>3</sup>

Many women with ovarian pregnancies are usually diagnosed preoperatively with a ruptured corpus luteum cyst, or any other non-ovarian ectopic pregnancy, and the correct diagnosis is usually made during the surgical procedure only 28% of the time. The hemorrhagic mass (ovarian ectopic) should be located adjacent to the corpus luteum, never within it. Ovarian pregnancy is associated with profuse hemorrhage, with 81% of reported to have a hemoperitoneum greater than 500 mL.

Ectopic implantation of the fertilized egg in the ovary is rare and is diagnosed if four clinical criteria are met. These were outlined by Spiegelberg (1878):<sup>4</sup>

- 1) the ipsilateral tube is intact and distinct from the ovary;
- 2) the ectopic pregnancy occupies the ovary;
- 3) the ectopic pregnancy is connected by the uteroovarian ligament to the uterus; and
- 4) ovarian tissue can be demonstrated histologically amid the placental tissue

The index case here satisfied all four criteria.

Classically, management for ovarian pregnancies has been surgical. Small lesions can be managed by ovarian wedge resection or cystectomy, whereas larger lesions require oophorectomy. Fertility after conservative surgical procedures does not appear to be affected and ovarian wedge resection or ovarian cystectomy is the treatment of choice for nuliparas.<sup>5</sup> With conservative surgery,  $\beta$ -hCG levels should be monitored to exclude remnant trophoblast.

## Conclusion

The diagnosis of ectopic pregnancy is difficult since the definitive diagnosis is mainly done surgically as preoperative ultrasound may possibly miss the diagnosis. Management varies depending on the size and hemodynamic status of the patient.

## References

1. Scutiero G1, Di Gioia P, Spada A, Greco P. Primary ovarian pregnancy and its management. *J Soc Laparoendosc Surg* 2012; 16(3): 492-4.
2. Kachewar SG, Sankaye SB. Ovarian ectopic pregnancy: A case report. *J Mahatma Gandhi Inst Med Sci [serial online]* 2016 [cited 2019 Sep 3];21:147-50.
3. Tehrani HG, Hamoush Z, Ghasemi M, Hashemi L. Ovarian ectopic pregnancy: A rare case. *Iran J Reprod Med* 2014; 12(4): 281-4.
4. Begum J, Pallavee P, Samal S. Diagnostic dilemma in ovarian pregnancy: A case series. *J Clin Diagn Res* 2015; 9(4): QR01-QR03. Published online 2015.
5. Sidek S, Lai SF, Lim-Tan SK. Primary ovarian pregnancy: current diagnosis and management. *Singapore Med J* 1994; 35(1): 71-3.