

CASE REPORT

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# Recurrent ipsilateral interstitial ectopic pregnancy after salpingectomy

Federica Zammit, Sarah Sultana Grixti, Charles Savona-Ventura

## ABSTRACT

**Introduction:** This case highlights the long-term obstetric risks following salpingectomy. These include recurrent ipsilateral interstitial ectopic pregnancy and uterine rupture.

**Case Report:** A 29-year-old lady presented with acute abdominal pain as well as signs and symptoms of hemorrhagic shock at 14 weeks of gestation. She was subsequently diagnosed with a ruptured right-sided interstitial ectopic pregnancy, which was managed surgically. The patient had a past history of open salpingo-oophorectomy for a complicated right-sided ectopic pregnancy involving the ovary at 12 weeks of gestation in her previous pregnancy. A subsequent pregnancy a year later was complicated by impending uterine rupture at 30 weeks of gestation. A healthy baby was delivered by Cesarean section.

**Conclusion:** A meticulous surgical technique is of the essence when performing a salpingectomy for whatever pathology. The risk of a recurrent ipsilateral interstitial ectopic pregnancy must always be considered. Also, the risk of antenatal and intrapartum uterine rupture must

be addressed in future pregnancies following interstitial pregnancies.

**Keywords:** Hematocoele, Interstitial pregnancy, Salpingo-oophorectomy, Tubal abortion, Uterine rupture

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## INTRODUCTION

This report describes a case of an interstitial ectopic pregnancy which followed an open salpingo-oophorectomy for a tubal abortion in the previous pregnancy. The current interstitial pregnancy was managed by surgical removal of the products of conception with a wedge resection of the interstitial portion of the tube and hemostatic suturing. The patient became pregnant the following year, with development of impending uterine rupture at 30 weeks of gestation. This case highlights the increased obstetric risk that tubal abortion and its surgical management pose on subsequent pregnancies, including ectopic implantation, uterine rupture, and maternal mortality.

## CASE REPORT

A 29-year-old woman presented at 14 weeks gestation in her second pregnancy with acute, severe, and generalized abdominal pain. This was associated with signs of hemorrhagic shock and peritonism, in the absence of vaginal bleeding. Of note, her previous pregnancy had

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been complicated by an ectopic pregnancy diagnosed at 12 weeks of gestation, with subsequent development of an enlarged right-sided tubal hematocele involving the ovary. This was managed by a right salpingo-oophorectomy, the histology of which confirmed a tubal abortion.

At presentation during the second pregnancy, abdominal examination revealed a markedly tender abdomen with generalized guarding, rigidity, and rebound tenderness. A vaginal examination showed an enlarged uterus conforming to a gestational age of about 14 weeks, with significant tenderness on the right side and marked cervical excitation. An ultrasound scan demonstrated a high intrauterine pregnancy with a live fetus and free fluid in the pouch of Douglas. In view of intraperitoneal bleeding, an emergency laparotomy was undertaken. At surgery, the right horn of the uterus had ruptured and placental tissue was extruding from the rent. The gestational sac and fetus were dissected out and a wedge resection of the cornual part of the uterus was performed. Uterine hemostasis was secured and the uterine base was covered by a posterior uterine muscle flap from the redundant dilated uterine wall.

Three months later, because of the presumed surgical damage to the uterus, the patient underwent a hysterosalpingogram. This showed distortion of the right side of the uterine cavity with absence of the right tube, associated with mild leakage of dye into the myometrium. The left tube demonstrated normal spillage of dye.

A year later, the patient embarked on another pregnancy. There were no outstanding issues other than hyperemesis gravidarum at eight weeks of gestation. An ultrasound scan showed a viable intrauterine pregnancy with placenta in the left fundal region.

At 30 weeks of gestation, the patient complained of right upper quadrant pain. Examination confirmed tenderness over the right upper quadrant and uterine fundus. An ultrasound scan showed thinning on the right side of the uterus, with a myometrial defect suggesting impending uterine rupture. A Cesarean section was thus performed after administration of corticosteroids. At operation, significant uterine thinning on the right side of the fundus was noted. The child was born prematurely with a good weight for gestational age. Intraoperative bleeding was well-controlled. The mother's postoperative period was uneventful. An elective left-sided tubal ligation was eventually performed for long-term contraception after counseling of the patient and her partner. The infant, weighing 1500 grams, was transferred to the neonatal care unit for intensive care and respiratory support. The child was weaned from the respirator and was subsequently discharged from the neonatal unit when it reached a weight of 2500 grams.

## DISCUSSION

An interstitial ectopic pregnancy is defined as the presence of a fertilized egg in the proximal and intramural

parts of the fallopian tube, demonstrated by a nodular structure lateral to the round ligament [1]. It is uncommon, accounting for 2.4% of all ectopic pregnancies and 2–4% of all tubal pregnancies [2]. Risk factors include previous assisted reproductive technology, ectopic pregnancy, pelvic inflammatory disease, endometriosis, uterine fibroids, and salpingectomy. The latter is significant if performed following a hydrosalpinx or hematosalpinx, resulting in subsequent dilation of the interstitial segment of the fallopian tube [3].

Interstitial pregnancies carry a higher risk, partly because they tend to manifest symptoms only after 12 weeks, increasing the likelihood of a late diagnosis [4]. They also signify 2–2.5% risk of maternal mortality, owing to the increased risk of rupture and hemorrhage, especially beyond 16 weeks [5].

The presence of an interstitial line on ultrasound is highly suggestive of an interstitial ectopic pregnancy. This echogenic line corresponds to the interstitial part of the fallopian tube in small interstitial pregnancies and endometrial canal in larger ones. It carries a sensitivity of 80% and a specificity of 98% [6]. The management of an uncomplicated interstitial ectopic pregnancy may be medical or surgical. The former involves methotrexate, which is effective in 83% [5]. The latter currently verges towards laparoscopic cornuostomy or cornuectomy.

Effectively, 95% of ectopic pregnancies occur in the fallopian tube [7]. The outcome may involve tubal rupture or tubal abortion. Although the incidence of tubal abortion may vary, an incidence rate of 2.5% has been quoted [8]. Tubal abortion can be complete or incomplete. Absolute expulsion of the conceptus characterizes complete tubal abortion, whereas partial expulsion defines the incomplete type. The outcomes involve dissolution or deposition of trophoblast in sites such as the ovary [8]. The process of resolution following a partial expulsion may, as in the case described, result in blockage of the fimbrial end. This promotes the development of a hematosalpinx, which dilates the tube until the blood leaks.

The patient in this scenario had a previous ectopic tubal abortion that developed into a right-sided hematosalpinx involving the ovary. This presented late with signs of shock. A salpingo-oophorectomy was performed. A recurrent ectopic pregnancy occurred on the same side in the remaining interstitial tubal portion.

Recurrent interstitial pregnancy after an ectopic pregnancy can be prevented by complete salpingectomy, including a wedge-shaped excision of the cornual region. This procedure is not without complications and does not give a 100% assurance against recurrence. Effectively, the disadvantages of cornual resection outweigh the advantages [9, 10]. The management of interstitial pregnancy also varies with the site of rupture and the extent of damage to adjacent tissue. In this case, a wedge resection of the interstitial tubal segment was performed after removing the pregnancy sac. Hemostasis was

secured, and the raw surface was covered by a posterior myometrial flap.

Subsequent pregnancy after such surgery is fraught with risk of uterine rupture at any stage, particularly since the cornual area was observed to be compromised on subsequent hysterosalpingogram [5]. Uterine rupture is also predisposed by the increased risk of placenta accreta at the site of cornual resection. The patient is likely to benefit from Cesarean section at term.

## CONCLUSION

A meticulous surgical technique is essential whenever performing a salpingectomy for whatever pathology. Thus, proper suturing should be ensured to close the distal tubal end when performing a salpingectomy for a hydrocoele or hematocele. In addition, the risk of recurrent ipsilateral interstitial ectopic pregnancy must always be considered. Also, the risk of antenatal and intrapartum uterine rupture must be addressed in future pregnancies after interstitial pregnancies.

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## Author Contributions

Federica Zammit – Conception of the work, Design of the work, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Sarah Sultana Grixti – Design of the work, Acquisition of data, Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Charles Savona-Ventura – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

## Guarantor of Submission

The corresponding author is the guarantor of submission.

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## Consent Statement

Written informed consent was obtained from the patient for publication of this article.

## Conflict of Interest

Authors declare no conflict of interest.

## Data Availability

All relevant data are within the paper and its Supporting Information files.

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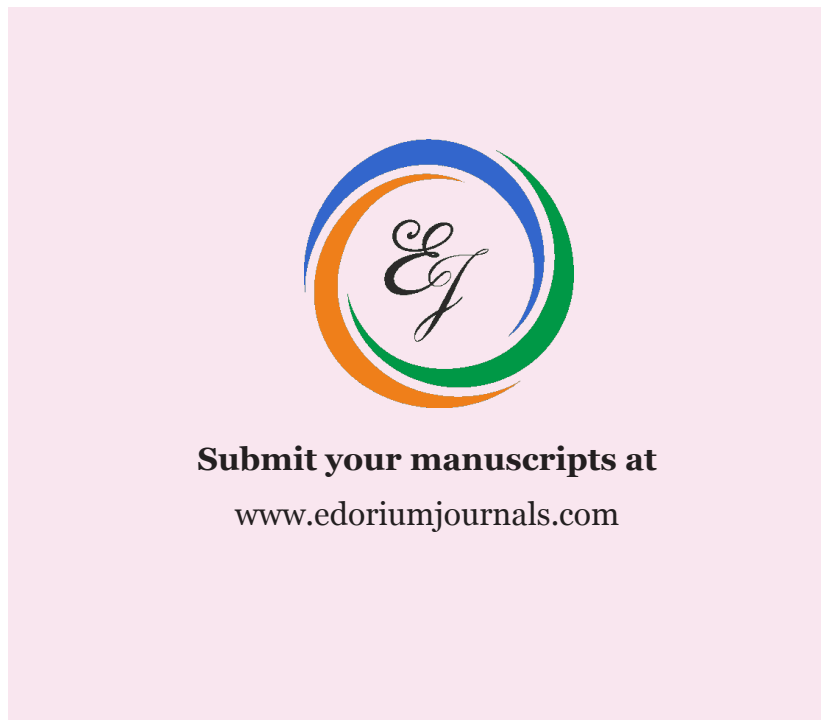
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