

# Recurrent ectopic pregnancy after ipsilateral partial salpingectomy: a case report

D.H. Lee

*Department of Obstetrics and Gynecology Yeungnam, University School of Medicine, Daegu (Korea)*

## Summary

Ectopic pregnancy is associated with maternal morbidity and mortality during early pregnancy. Ectopic pregnancy occurs in approximately 2% of all pregnancies, and the risk of ectopic pregnancy is increased by eight-fold in women with a history of ectopic pregnancy. However, recurrent ectopic pregnancy after ipsilateral partial salpingectomy is quite rare. The authors experienced a case of recurrent ectopic pregnancy in the distal remnant after right partial salpingectomy. In this case report, they discuss this unusual case and provide a brief review of the literature.

**Key words:** Ectopic pregnancy; Recurrent; Partial salpingectomy.

## Introduction

Ectopic pregnancy occurs in approximately 2% of all pregnancies, and the risk of recurrence is increased by eight-fold in women with a history of ectopic pregnancy[1]. Over 95% of ectopic pregnancies involve the fallopian tube [2]. Recurrent ectopic pregnancy after ipsilateral partial salpingectomy is very rare, and no exact information is available in the literature. Here, the authors report a case of recurrent ectopic pregnancy after ipsilateral partial salpingectomy.

## Case Report

A 28-year-old, gravid 1, para 0 woman presented to the emergency department complaining of irregular vaginal spotting and lower abdominal pain; she had undergone right partial salpingectomy eight years ago because of ectopic pregnancy. The pain was dull in nature and had been present for two days. Her right lower quadrant was tender with no rebound tenderness. Her blood pressure was 130/80 mmHg, and her pulse was 80 beats/minute. Before presentation, transvaginal ultrasonography was performed at a local clinic, which showed a right tubal gestational-sac (G-sac)-like shadow and no fluid collection. The urine pregnancy test performed at the emergency department yielded positive results. Her initial white blood count, hemoglobin, hematocrit, and platelet count were 7.93 K/ $\mu$ l, 11.9 g/dl, 35.4%, and 256 K/ $\mu$ l, respectively. Her serum  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) level was 810.4 mIU/ml and 1105 mIU/ml on the day of admission and on day 2 after admission, respectively. A couple of days later, transvaginal ultrasonography showed an empty uterus, a right tubal G-sac-like small cystic lesion, and no fluid collection (Figure 1). The authors recommended a diagnostic laparoscopic surgery with D&C. However, the patient stridently refused their suggestion, requested a hospital discharge, and promised to visit the outpatient department in one week. She returned to the hospital five

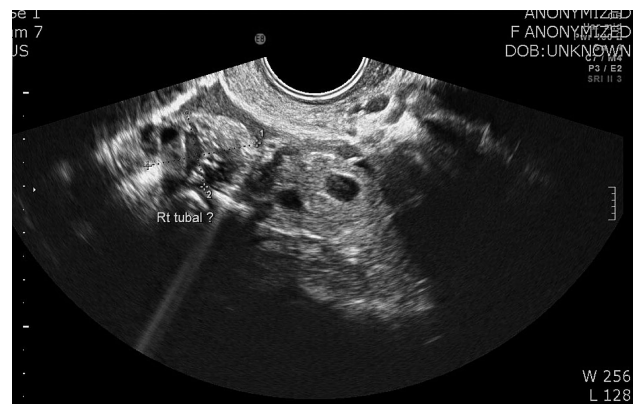


Figure 1. — Ultrasonography showing a right tubal complex cystic lesion and normal ovary.

days after being discharged because of lower abdominal pain and vaginal bleeding. Transvaginal ultrasonography showed no changes from previous findings. She complained of persistent lower abdominal pain. Pelvic computed tomography (CT) was performed, which showed an irregularly enhanced abnormal lesion at the right adnexa and fluid collection in the pelvic cavity (Figure 2). Her serum  $\beta$ -hCG was 768.4 mIU/ml on the day after admission. She underwent therapeutic laparoscopic surgery because of severe lower abdominal pain. The operative findings showed hemoperitoneum and a bulging four-cm mass at the distal remnant of the previous partial salpingectomy (Figure 3). The distal remnant, proximal remnant, and the products of conception were removed. Histopathological examination of the laparoscopic specimen showed a fallopian tube with ectopic pregnancy. Her serum  $\beta$ -hCG on postoperative day 1 was 416.8 mIU/ml. She was discharged on postoperative day 3 and was doing well at the follow-up one week later.

Revised manuscript accepted for publication February 17, 2014



Figure 2. — Pelvic computed tomography image showing an irregular enhanced abnormal cystic lesion in the right adnexa (enhanced phase).

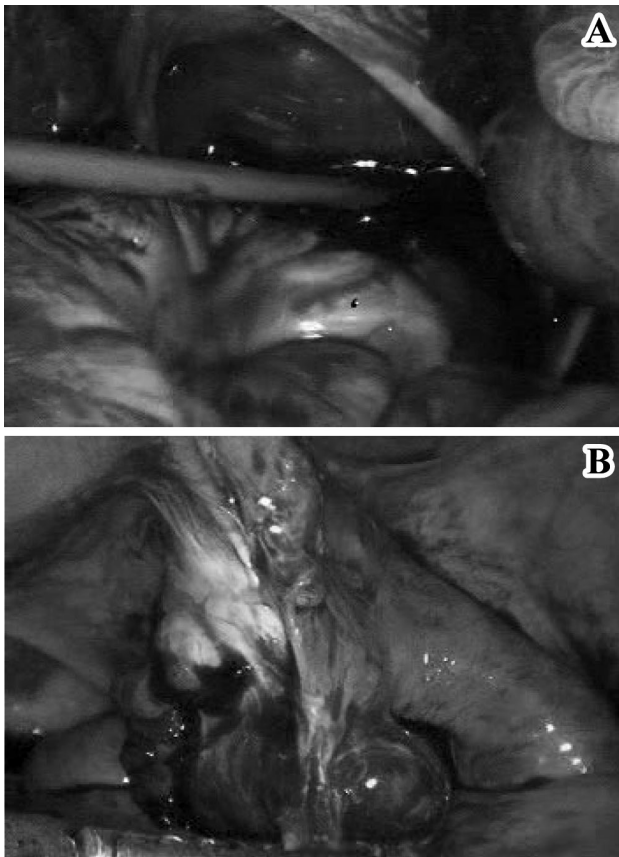


Figure 3. — Laparoscopic findings (A) showing hemoperitoneum in the pelvic cavity and (B) right salpinx with partial resection and a swollen distal tubal remnant regarded as the ectopic pregnancy focus.

Table 1. — Recurrent ectopic pregnancy after salpingectomy.

Author	Year	Age	Previous surgery	Recurrent site
Rizos <i>et al.</i> [6]	2003	33	Laparoscopic left partial salpingectomy	Left cornual site
Zuzarte <i>et al.</i> [7]	2005	32	Left partial salpingectomy	Distal remnant of left fallopian tube
Tan <i>et al.</i> [8]	2007	27	Left partial salpingectomy	Proximal remnant of left fallopian tube
Chou <i>et al.</i> [9]	2008	23	Segmental resection of right fallopian tube	Distal remnant of right fallopian tube
Liu <i>et al.</i> [10]	2009	28	Laparoscopic left partial salpingectomy	Proximal remnant of left fallopian tube
Chou <i>et al.</i> [9]	2009	38	Laparoscopic right partial salpingectomy	Proximal remnant of right fallopian tube
Chou <i>et al.</i> [9]	2009	29	Laparoscopic right partial salpingectomy	Distal remnant of left fallopian tube
Lee <i>et al.</i>	2011	28	Right partial salpingectomy	Distal remnant of right fallopian tube
Present case				

## Discussion

Ectopic pregnancy is associated with maternal morbidity and mortality during early pregnancy. Hemorrhage due to ectopic pregnancy is the leading cause of pregnancy-related maternal death in the first trimester [1, 2]. Risk factors for ectopic pregnancy include previous ectopic pregnancy, previous tubal surgery, tubal pathology, current use of an intrauterine device (IUD), and in utero diethylstilbestrol (DES) exposure [3, 4]. Ectopic pregnancy occurs in approximately 1.3–2% of all pregnancies, and the risk of recurrence is increased by eight-fold in women with a history of ectopic pregnancy [5]. However, recurrent ectopic pregnancy in the distal remnant of partial salpingectomy is very rare. The present authors searched the literature for cases similar to this case. There have been seven reported cases of recurrent ectopic pregnancy after salpingectomy, including the present case. Of these, three cases showed recurrence at the proximal remnant of a partial salpingectomy, three showed recurrence at the distal remnant of a partial salpingectomy, and only one showed recurrence at the cornual site (Table 1).

These rare cases are caused by the transperitoneal migration of embryos or sperms. It is possible that human gametes transmigrate to the transperitoneum [11]. The sperm approaches the intact fallopian tube through the endometrial cavity. Next, the sperm goes to the opposite fallopian tube through the transperitoneal cavity. When a sperm meets an ovum in the destroyed fallopian tube, fertilization occurs, but the embryo cannot migrate to the endometrial cavity. Embryo implantation thus occurs in the distal remnant of the destroyed fallopian tube [7, 9].

Recurrent ectopic pregnancy after ipsilateral partial salpingectomy is rare but possible. Therefore, physicians should carefully monitor for recurrent ipsilateral ectopic pregnancy.

## Acknowledgments

This work was supported by the 2012 Yeungnam University Research Grant

## References

- [1] Centers for disease control and prevention (CDC): "Ectopic pregnancy—United States, 1990-1992". *MMWR Morb. Mortal. Wkly. Rep.*, 1995, 44.
- [2] Fylstra D.L.: "Tubal pregnancy: a review of current diagnosis and treatment". *Obstet. Gynecol. Surv.*, 1998, 53, 320.
- [3] Murray H., Baakdah H., Bardell T., Tulandi T.: "Diagnosis and treatment of ectopic pregnancy". *CMAJ*, 2005, 173, 905.
- [4] Bouyer J., Coste J., Shojaei T., Pouly J.L., Fernandez H., Gerbaud L., Job-Spira N.: "Risk factors for ectopic pregnancy: a comprehensive analysis based on a large case-control, population-based study in France". *Am. J. Epidemiol.*, 2003, 157, 185.
- [5] Farquhar C.M.: "Ectopic pregnancy". *Lancet*, 2005, 366, 583.
- [6] Rizos A., Eyong E., Yassin A.: "Recurrent ectopic pregnancy at the ipsilateral fallopian tube following laparoscopic partial salpingectomy with endo-loop ligation". *J. Obstet. Gynaecol.*, 2003, 23, 678.
- [7] Zuzarte R., Khong C.C.: "Recurrent ectopic pregnancy following ipsilateral partial salpingectomy". *Singapore Med. J.*, 2005, 46, 476.
- [8] Tan T.L., Elashry A., Tischner I., Jolaoso A.: "Lightning does strike twice: recurrent ipsilateral tubal pregnancy following partial salpingectomy for ectopic pregnancy". *J. Obstet. Gynaecol.*, 2007, 27, 534.
- [9] Chou L.L., Huang M.C.: "Recurrent ectopic pregnancy after ipsilateral segmental salpingectomy". *Taiwan J. Obstet. Gynecol.*, 2008, 47, 203.
- [10] Liu Y.L., Hwang K.S., Chu P.W., Ding D.C.: "Recurrent ectopic pregnancy in the ipsilateral oviduct after prior laparoscopic partial salpingectomy". *Taiwan J. Obstet. Gynecol.*, 2009, 48, 417.
- [11] Nuhum G., Stanislaw H., McMahon C.: "Preventing ectopic pregnancies: how often does transperitoneal transmigration of sperm occur in effecting human pregnancy?" *BJOG*, 2004, 111, 706.

Address reprint requests to:  
D.H. LEE, M.D.  
317-1 Daemyung-5-dong Namgu  
Daegu 705-717 (Korea)  
e-mail: leebhy@ynu.ac.kr