



# External Iliac Artery Injury During Ovarian Drilling Procedure: A Case Report

## *Ovaryan Drilling Sırasında Eksternal İliak Arter Yaralanması: Olgu Sunumu*

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### Abstract

Major vascular injury is a rare but serious complication seen in gynecologic laparoscopic surgery. Most of the vascular complications occur on the small vessels in the anterior abdominal wall and usually take place during Veress needle and trocar insertion at the beginning of the procedure. A 34-year-old primary infertile woman with bilateral polycystic ovaries underwent laparoscopic ovarian drilling procedure. During drilling of the right ovary, the right external iliac artery was damaged by the unipolar cautery. An immediate exploratory laparotomy was performed and the vessel was repaired. Here, we present an unusual case of major vessel injury by unipolar cautery during a laparoscopic procedure. Gynecologists must be cautious about this serious complication until the end of the laparoscopy, since the treatment is simple and lifesaving if immediately recognized. (*The Medical Bulletin of Haseki 2014; 52: 120-2*)

**Key Words:** Ovarian drilling, vascular injury, laparoscopy, unipolar cautery

### Özet

Büyük damar yaralanması, jinekolojik laparoskopik cerrahide nadiren görülen ciddi bir komplikasyondur. Damar yaralanmalarının büyük bir kısmı operasyon başlangıcında veres iğnesi veya trokar girmesine bağlı olarak batin ön duvarındaki küçük damarlarda meydana gelir. Bu vakada, 34 yaşında polikistik overleri olan primer infertil hastaya laparoskopik ovarian drilling yapıldı. Sağ overe drilling yapıldığı sırada, sağ external iliak arter unipolar koterle hasara uğradı. Acil laparotomiye geçilerek damar onarıldı. Laparoskopik ameliyatlarda büyük damar yaralanması gibi ciddi komplikasyonların oluşabileceği akıld tutulmalıdır. Hızlı tanı koyulduğunda tedavisi kolay ve hayat kurtarıcıdır. (*Haseki Tıp Bülteni 2014; 52: 120-2*)

**Anahtar Sözcükler:** Ovaryan drilling, damar hasarı, laparoskopi, unipolar koter

### Introduction

Laparoscopy is a commonly used diagnostic and therapeutic gynecologic procedure with low morbidity and mortality (1). It is a generally safe and effective procedure which is well tolerated by patients. The most commonly seen complications such as hemorrhage, gas embolism, cardiovascular collapse, pneumothorax, pneumomediastinum, perforation of viscera, and peritonitis have been reported to occur with an incidence

of 0.6% and 2.5% (2). Here, we report an unusual case of major vascular injury involving the right external iliac artery by unipolar cautery during an ovarian drilling procedure.

### Case

A 34-year-old, gravida 0 para 0 woman with a history of primary infertility for five years was admitted to our infertility clinic. Her physical examination and routine blood tests were normal. The level of LH was 12.02 mIU/

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mL, and FSH was 7.04 mIU/mL (LH/FSH ratio was 1.7). Her estradiol (E2) level was 45.94 pg/mL, prolactin was 16.24 ng/mL at the 3<sup>rd</sup> day of the follicular phase. She had no history of abdominal surgery or bleeding problems. She had undergone an in vitro fertilization (IVF) procedure 6 months ago which was failed to set off fertility. Her husband's sperm count was within the normal range.

Ultrasonographic examination revealed bilateral polycystic ovaries. Bilateral hydrosalpinges was observed in the hydrosalpingography. A decision was made to perform laparoscopic ovarian drilling for Polycystic Ovarian syndrome. The patient underwent general anesthesia in the horizontal supine position and a Veress needle was inserted into the peritoneal cavity through a subumbilical incision. Then, the abdominal cavity was insufflated with CO<sub>2</sub> gas to a pressure of 15 mm Hg. A 10-mm trocar was inserted in the peritoneal cavity. Then, two suprapubic incisions were made and 5 mm trocars were introduced under direct laparoscopic vision. On visual inspection during laparoscopy, both ovaries were found to be enlarged, with thickened, and smooth white capsules, typical of Polycystic Ovary syndrome and, bilateral hydrosalpinx was subsequently identified during laparoscopic examination. During drilling of the right ovary, unexpected sliding of the unipolar cautery caused an iatrogenic laceration on the right external iliac artery and a massive bleeding was observed with a rapid drop in blood pressure. An immediate explorative laparotomy was performed. Large amount of hematoma was found in the retroperitoneal area. The right common iliac artery and then the right external iliac artery were identified. An arterial clamp was placed on the right common iliac artery. An approximately 1 cm laceration was discovered on the right external iliac artery and was repaired via direct suture technique by the gynecologists. Heparin was administered in the postoperative period. An abnormal bleeding on the incision area was realized 12 hours after the first operation and a second laparotomy was performed. The repaired vessel was checked together with the whole operative area but no major source of bleeding was found. The bleeding was thought to be the result of heparin administration. No additional problems were seen during the second postoperative period. She was discharged 5 days after close observation.

## Discussion

Laparoscopic ovarian drilling using unipolar electrocautery is a powerful tool in the treatment of Polycystic Ovarian syndrome (PCOS). In a Cochrane review of laparoscopic drilling procedure in Anovulatory Polycystic Ovarian syndrome, although seen rare, surgically related complications were reported to be pelvic infection and the associated risks and morbidity of laparoscopy under general

anesthesia were postoperative adhesion formation and the theoretical long-term risk of premature ovarian failure (3).

Most of the deaths in laparoscopies are related with vascular injuries. In a study by Bhojru et al., up to 81% of deaths during laparoscopy resulted from major vascular injuries (4). However, overall mortality rate of gynecologic laparoscopy is as low as 0.09% (5). The rate of perforating injuries is increased with the introduction of both the first trocar and the Veress needle near the umbilicus and at the suprapubic site (6). Vessel injury caused by electrocoagulation has rarely been reported in the literature. In the Finnish national register of laparoscopic hysterectomies (1997), which included 1165 procedures, 14 vascular injuries (1.2%) including only one case of injury to the common iliac artery during the use of unipolar electrocoagulation were reported (7). The present case is such a rare entity that the vascular injury occurred during the use of unipolar drilling cautery, damaging the external iliac artery.

The mortality rate of major vascular injury during laparoscopic procedures was found to be 1.8 per 100 000 procedures in a review by the American Association of Gynecological Laparoscopists (8). But the main lifesaving step in all types of injuries is early recognition and immediate laparotomy. However, Chiantera et al. reported the use of Yasargil clamps in immediate laparoscopic repair of major vascular injury with intracorporeal suturing as a safe alternative to open surgical repair (9). On the other hand, arterial embolization was used as a novel additional measure in the management of the intractable bleeding from the inferior epigastric vessels (10).

Risk of vascular injury may be reduced by proper abdominal entry using either the Veress needle or trocar. Considering the fact that very slim and very obese patients are at increased risk of vascular injury should alert the surgeon to take extra precautions (11). As the treatment of this serious complication is simple and the outcome is mostly good if immediately recognized, the gynecologists must be very careful from the beginning of the laparoscopic procedure until the discharge and should check the patient for this unexpected complication.

## Declaration of Interest

The authors report no declarations of interest.

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