



Review

Repeated ovariopexy failure in recurrent adnexal torsion: combined approach and review of the literature



Erhan Simsek^{a,*}, Esra Kilicdag^b, Hakan Kalayci^b, Seda Yuksel Simsek^c, Ayşe Parlakgumus^b

^aBaskent University, Obstetrics and Gynecology Department, Kışla mh 4426. Sk, Seyhan Park Evleri, No:43 D Blok No: 5/10, Yüreğir, Adana, Turkey

^bBaskent University, Obstetrics and Gynecology Department, Barajyolu 1, Durak No: 37, 01100 Seyhan, Adana, Turkey

^cAdana Maternity Hospital, Erdal Acet Cad Döşeme Mah, Marsa Yağ Fabrikası Karşısı No: 10, Seyhan, Adana, Turkey

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ABSTRACT

Adnexal torsion is a well-known but poorly recognized gynecological emergency. Most cases are in the reproductive age group and many are related to ovarian and paraovarian masses. Adnexal torsion can also occur, however, in normal-looking ovaries with elongated utero-ovarian ligaments. The authors describe the case of a young woman presenting with a sixth recurrence of right adnexal torsion with polycystic ovaries. She had had two failed ovarian fixation efforts in the third and fifth laparoscopies. A combined ovarian fixation method is described, fixing the ovary to the pelvic side wall and shortening the utero-ovarian ligament, at elective surgery one month after the detorsion operation. Ovarian fixation after adnexal torsion is not standardized and best method of fixation remains unresolved.

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1. Introduction

Adnexal torsion (AT) is defined as total or partial rotation of ovary, the fallopian tube or both around its vascular axis causing compromise of blood flow to adnexa. It may lead to ischemia and necrosis. Clinical AT accounts for 2.5–5% of all gynecologic emergencies [1,2]. Diagnosis of AT is difficult with poorly defined clinical findings, and in fact, accurate diagnosis is missed in almost half of the cases prior to surgery [3,4]. Laparoscopy, as a minimally invasive technique, is the preferred intervention for both diagnosis and treatment in most cases. Recurrence of adnexal torsion in certain cases necessitates ovarian fixation efforts to prevent further retorsion.

We present the case of a woman experiencing six separate recurrent adnexal torsion events in spite of two distinct ovarian fixations during her laparoscopies. Although ovarian fixation after retorsion is seriously considered, neither the technique nor the timing of fixation is standardized [1,5–10]. We tried to define alternative techniques of ovarian fixation in the light of the current literature.

2. Case report

We present a case of recurrent ipsilateral AT in a 20 year old nulliparous woman. Her medical history was uneventful except for polycystic ovarian syndrome manifested by oligomenorrhea and hirsutism. She underwent six separate laparoscopies (August 2007, August 2009, January 2010, June 2011, December 2011, October 2012) due to recurrent episodes of AT. Total torsion of the right ovary along with the tube was encountered in all six torsion laparoscopies except the fourth one. The number of twists ranged

* Corresponding author. Tel.: +90 533 4146299.

E-mail address: drsimsekerhan@gmail.com (E. Simsek).

between 2 and 5 in each episode. In the fourth laparoscopy, torsion of the right ovary along with the fallopian tube was seen to be incomplete but a swollen ovary and fallopian tube was observed and symptoms were relieved after laparoscopic detorsion surgery.

In all six episodes, she presented to the emergency room of Baskent University Adana Hospital with acute abdominal findings. All six laparoscopies were performed at the same institute by three different surgeons. None of the torsion episodes was accompanied by ovarian cysts or tumor but she had polycystic ovaries. In the third and fifth episodes, surgery was combined with detorsion and ovariopexy by suturing ovary to the right pelvic side wall with polypropylene 2:0 suture. The second laparoscopy was performed at night and although ovarian fixation was justified, the surgeon's preference was detorsion of the adnexa without any effort at ovarian fixation. The fourth laparoscopy revealed an incomplete torsion and was not combined with ovariopexy due to the emergency setup of laparoscopy and the surgeon's preferences.

In September 2012 the patient was readmitted to our emergency care unit with sudden onset crampy acute abdominal pain starting 4–5 h ago. Examination revealed right lower quadrant tenderness and rebound tenderness. Ultrasonography showed enlarged right ovary with minimal pelvic fluid. Doppler investigation indicated absence of blood flow to the right ovary. At emergency laparoscopy, edematous, enlarged (7–8 cm), ischemic, fragile ovarian tissue was observed, with five complete twists of the right ovary and tube. Detorsion was completed with no intervention for ovarian fixation. Due to the failure of two previous ovariopexy attempts, it was decided that the patient should have an elective ovarian fixation operation for prevention of torsion recurrence. Elective operation was thoroughly discussed with the patient and a written informed consent was taken before the procedure.

Elective laparoscopy was performed one month later. The previous two fixation attempts had been performed by polypropylene sutures between the ovarian cortex and pelvic side wall peritoneum above the tract of the right ureter. The previously placed polypropylene suture material was observed hanging on the right pelvic sidewall but detached from the ovary (Fig. 1). The right fallopian tube and infundibulopelvic ligament were noted to be elongated to almost twice the length of the left tube and ligament, and the right uteroovarian ligament was thin and similarly elongated (Fig. 1). Due to the recurrent failure of ovariopexy we chose to plicate the ovary to two different places in the pelvis; one to the back of the uterus through the uteroovarian ligament and the other to the pelvic sidewall. First, the uteroovarian ligament was shortened and sutured by an Ethibond non-absorbable 2:0 suture (Ethicon Inc., Johnson & Johnson Company) from the pole of the ovary to close to the uterine end of the ligament by a Z-suturing technique (Fig. 2). As a second intervention, the ovary was sutured to the right pelvic sidewall using same suturing technique (Fig. 2). During suture placement, attention was paid to the location of the major pelvic vessels and the tract of the ureter. Postoperative observation was uneventful and patient was discharged after overnight hospitalization. Two weeks after surgery, polycystic ovaries were observed bilaterally on ultrasound investigation and the patient was free of symptoms. Each ovary was 4 cm × 3 cm × 3 cm in diameter. At eight months of follow-up, there was no evidence of AT recurrence.

3. Discussion

AT, of which 64–82% is associated with causative findings like ovarian or paraovarian cystic/solid masses, may occur with normal and enlarged ovaries [4–6]. Nearly 70–80% of cases are encountered in the reproductive age period with an estimated pregnancy coexistence rate of 15–25% [7–9]. Ovulation induction, assisted

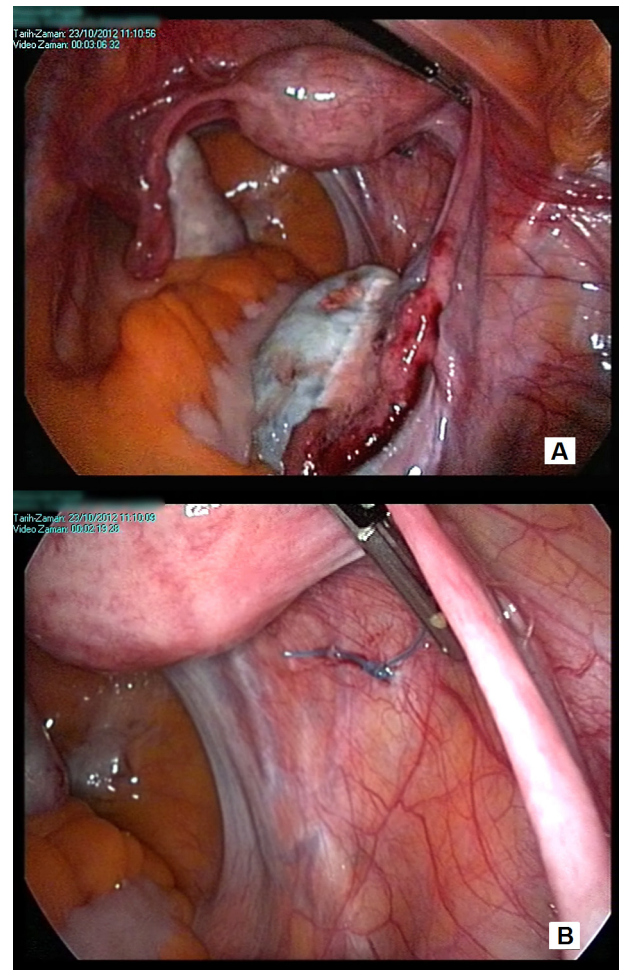


Fig. 1. Findings in elective laparoscopic fixation operation (A) markedly elongated right utero-ovarian ligament, right fallopian tube and lax infundibulopelvic ligament (compare to left side). (B) The detached permanent suture, a remnant of previous attempt of fixation, visible on the right pelvic side wall.

reproductive technologies (ART) and ovarian hyperstimulation significantly increase the incidence of AT [2,10–13]. In retrospective studies, Hasson et al. and Tsafirir et al. reported that ART and ovulation induction constitute 27.3% and 20.8% of the total non-pregnant AT patients, respectively, [10,11]. Of reported pregnant AT cases, 70–80% result from ART and ovulation induction with supraphysiologic enlargement of the ovaries [10,11]. Ovarian cysts and tumors [1,4,10–12], and paraovarian cysts [9,14], may also contribute to AT due to increased diameters, volume and weight of the ovaries [15]. Every cystic mass has a different propensity for AT. Endometrioma generally precludes torsion due to frequent accompanying pelvic adhesions, but benign cystic teratomas are more prone to torsion due to increased weight and density of the cyst. In a series of 517 cases, Comerchi et al. reported that 3.5% of benign cystic teratomas present with torsion [16].

Absence of such masses, however, does not preclude AT. Lax, hypermobile and elongated ovarian ligaments are frequently encountered in cases with normal-looking ovaries [10,11,17]. Polycystic ovaries are also associated with AT, and heavy, enlarged ovaries are prone to retorsion in these patients [17]. Adnexal torsion is reported to happen more frequently on the right [11]. Pena et al. found 71% of torsions on the right side. The longer utero-ovarian ligament on the right and the presence of the sigmoid colon on the left as a protective mass are proposed mechanisms for this tendency [19].

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