

Brief Communication

The clinical parameters affecting the management of adnexal torsion

Berna Dilbaz, MD, Deniz Karcaaltincaba, MD,
Yetkin Karasu, MD, Burak Karadag, MD,
Aski Ellibes, MD, Muberra Kocak, MD.

Adnexal torsion, being the fifth most common gynecologic emergency, is responsible for 2.7% of all gynecologic emergencies affecting females of all ages, however, it is rare before menarche and after menopause.¹ It involves the ovary, tube, or the tuba-ovarian pedicle.^{1,2} Although it is unilateral in most cases, involvement of the contralateral adnexa can be observed in some cases and repetitive cases have also been reported.³ Partial or total rotation of the adnexa blocks venous and lymphatic flow, and causes congestion of the ovarian parenchyma and hemorrhagic infarction. When the torsion persists, arterial inflow blockage leads to gangrene and hemorrhagic necrosis of the ovary.⁴ Prompt identification and treatment of torsion, especially in young women, is crucial for prevention of infarction, and thus preservation of the ovarian function.⁵ The objective of this study was to evaluate the history, physical, and laboratory findings in women with surgically proven adnexal torsion, and to find out the characteristics of cases whose ovaries were conserved.

This retrospective study was carried out according to the principles of the Helsinki Declaration, and approved by the ethics committee of the Etlik Zübeyde Hanım Women's Health Teaching and Research Hospital, Ankara, Turkey. Eighteen women who were admitted to the hospital from January 2006 to January 2009, with surgically proven adnexal torsion were included in this study. None of the patients were pregnant or postmenopausal, and had a history of ovarian stimulation. All the patients were operated with laparoscopy. In 2 (11.1%) of the patients, the operation was converted to laparotomy as in one of the cases, the adnexal pathology was a teratoma that could not be removed via the trocar incision, and the other had an intraoperative frozen section report showing stromal tumor. Eleven patients (61.1%) were managed conservatively either with detorsion, or with detorsion plus cystectomy. Salpingo-oophorectomy was performed in 38.9% (n=7) of the patients as either detorsion of the adnexa did not supply enough perfusion to the ovary, or on gross examination the ovarian infarction was so extensive, the detorsion could not be accomplished due to the fragile and necrotic tissues. In patients under the

age of 30, the incidence of conservative management was 84.6%. The major presenting symptom was pelvic pain (100%) associated with nausea and vomiting (33.3%), and abdominal distention (11.1%). Overall, 9 patients had signs of peritoneal irritation (50%). The incidence of peritoneal irritation findings was 7 (63.7%) in the conservative management group, and 2 (28.6%) in the salpingo-oophorectomy ($p=0.335$). In all, 61.1% (11) of the patients had hyper leukocytosis ($>10,000/\text{mm}^3$). Six (54.4%) patients had hyperleukocytosis in the conservative management group, and 5 (71.4%) in the salpingo-oophorectomy group ($p=0.47$). On ultrasonographic examination, all patients had an adnexal mass. The median interquartile range (IQR) of average size of the adnexal mass was 65 mm. The average size of the adnexal mass was similar between the 2 groups, median IQR was 65 mm in the conservative management group, and 65 mm in the salpingo-oophorectomy group ($p=0.724$). When Doppler flow recordings were performed, 12 (66.2%) had absent flow, 6 (54.6%) in the conservative management group, and 5 (71.4%) in the salpingo-oophorectomy group ($p=0.470$). The average time from onset of pain to operation was 24 hours in the conservative management group, and 48 hours in the salpingo-oophorectomy group, which was not statistically different ($p=0.724$). Three patients had a history of chronic pelvic pain most probably due to the presence of cyst before torsion (Table 1). In 3 cases (16.7%) a normal ovary was found to be torsed. Pathologic findings were reported as hemorrhagic cyst (n=5, 38.9%), serous cystadenoma (n=3, 16.7%), benign teratoma (n=3, 16.7%), mesonephric cyst (n=1, 5.6%), mucinous cystadenoma (n=1, 5.6%), stromal tumor (n=1, 5.6%), struma ovarii (n=1, 5.6%), and hemorrhagic necrotic ovary without an underlying pathology (n=3, 16.7%) (Table 1). No early or postoperative complications were seen in both groups. All the patients in the conservative management group had an uneventful recovery, and a reoperation was not required. Normal ultrasonographic findings were detected in the affected ovaries in the conservative management group at the early and late postoperative scans.

In our series, 84.6% of patients under 30 years of age were managed conservatively, and overall 61.1% of patients were managed conservatively either with detorsion, or with detorsion plus cystectomy. No difference was found in the size of the pelvic mass, time passed from onset of pain to operation, presenting symptoms, associated leukocytosis, peritoneal irritation, and Doppler flow findings in between the 2 treatment groups. In the presented series, age and nulliparity were

Table 1 - Characteristics of the cases with adnexal torsion.

N	Age	Parity	Signs of peritoneal irritation	Pelvic exude	Size of adnexal mass (mm)	Leukocytosis	Doppler flow	L/S versus L/T	Type of operation	Onset of pain to operation period	Postoperative pathology results
1	22	N	-	+	87 x 65	+	Absent	L/S	CM	4 weeks	Struma ovarii
2	21	N	-	+	80 x 65	-	Present	L/T	CM	11 hours	Benign teratoma
3	22	N	-	+	70 x 53	+	Absent	L/S	CM	24 hours	Benign teratoma
4	23	N	+	+	55 x 60	+	Absent	L/S	CM	96 hours	HC
5	45	M	+	+	80 x 85	+	Absent	L/S	SO	3 months	Benign teratoma
8	40	M	+	+	55 x 40	+	Present	L/S	SO	96 hours	HNO
7	38	M	+	+	50 x 40	+	Absent	L/S	SO	22 hours	SC
8	30	M	-	+	80 x 80	+	Present	L/S	SO	72 hours	HC
9	28	N	+	-	40 x 45	+	Present	L/S	CM	3 weeks	SC
10	23	M	-	+	71 x 79	-	Present	L/T	SO	3 hours	SST
11	19	N	-	+	70 x 80	+	Absent	L/S	CM	60 hours	HC
12	24	N	-	+	70 x 70	+	Absent	L/S	CM	6 hours	HC
13	30	N	+	+	77 x 33	+	Present	L/S	SO	12 hours	HNO
14	15	N	+	+	61 x 57	-	Absent	L/S	CM	4 hours	MNC
15	26	M	+	-	60 x 70	-	Absent	L/S	SO	48 hours	HC
16	28	N	-	-	60 x 70	-	Absent	L/S	CM	96 hours	HNO
17	15	N	+	-	68 x 63	-	Present	L/S	CM	8 hours	SC
18	29	M	-	+	65 x 46	-	Absent	L/S	CM	12 hours	MC

L/S - laparoscopy, L/T - laparotomy, N - nulliparous, M - multiparous, CM - conservative management, SO - salpingo-oophorectomy, HC - hemorrhagic cyst, HNO - hemorrhagic necrotic ovary, SST - sclerosing stromal tumor, SC - serous cystadenoma, MNC - mesonephric cyst, MC - mucinous cystadenoma

the most effective factors influencing the surgeon's decision regarding the surgical technique, as similar cases were managed differently according to their age and parity (case 8 versus case 18). The patients who were diagnosed to have adnexal torsion within the last 3 years were included in the study in order to have a homogenous group diagnosed, treated, and followed-up by the same improved techniques. The retrospective manner used to classify cases, and a small sample size were limitations of our study.

In conclusion, adnexal torsion is a common gynecologic emergency that is often associated with ovarian cysts and benign neoplasms. Treatment can be managed with laparoscopy in most of the patients. Conservative management is essential for sparing fertility in young patients.

Received 18th May 2011. Accepted 25th July 2011.

From the Department of Obstetrics and Gynecology, Ankara Etlik Zubeyde Hanim Maternity and Women's Health Teaching and Research Hospital, Ankara, Turkey. Address correspondence and reprints request to: Dr. Deniz Karcaaltincaba, Department of Obstetrics and Gynecology, Etlik Zubeyde Hanim Women's Hospital, Ankara 06010, Turkey. Tel. +90 5052563960. Fax. +90 (312) 3112145. E-mail: denizaltincaba@yahoo.com

References

- Houry D, Abbott JT. Ovarian torsion: a fifteen-year review. *Ann Emerg Med* 2001; 38: 156-159.
- Karcaaltincaba D, Avsar F, Iskender C, Korukluoglu B. Unusual mechanism of isolated torsion of fallopian tube following minor trauma. Herniation through a broad ligament tear. *Saudi Med J* 2007; 28: 637-638.
- Crouch NS, Gyampoh B, Cutner AS, Creighton SM. Ovarian torsion: to pex or not to pex? Case report and review of the literature. *J Pediatr Adolesc Gynecol* 2003; 16: 381-384.
- Breech LL, Hillard PJ. Adnexal torsion in pediatric and adolescent girls. *Curr Opin Obstet Gynecol* 2005; 17: 483-489.
- Cass DL. Ovarian torsion. *Semin Pediatr Surg* 2005; 14: 86-92.