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ORIGINAL ARTICLE / ÖZGÜN ARAŞTIRMA

Management of adnexal torsion

Adneksiyal torsiyon yönetimi

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ABSTRACT

Objective: To evaluate clinical findings, operative reports, the pathological results of patients with diagnosis of adnexal torsion.

Methods: Fourteen patients with diagnosis of adnexal torsion who presented to our clinic between January 2009 and March 2013 were included in this retrospective analysis. Data including clinical findings, operative reports, the pathological results were recorded.

Results: The mean age of the patients was 28.1±10.5 with a range of 16 to 52 years. All patients underwent ultrasonography, and a pelvic mass appearance was detected in all cases. The mean diameter of the mass was 8,04±2,96 cm. All of the patients had lower abdominal pain, nausea and vomiting. Six patients were operated laparoscopically, while eight patients had laparotomy. Detorsion and cystectomy was performed in 7 (50.0%) of the patients. Two of patients were pregnant in operation time that treated by cystectomy and detorsion of the ovaries successfully in the first and third trimester (one by laparoscopy). There was one patient of isolated fallopian tube torsion due to hydrosalpinks treated by laparoscopic salpingectomy. Two of the patients had paratubal cyst and tubal torsion. Detorsion and cystectomy by laparoscopy and salpingectomy by laparotomy were performed for these patients respectively. The most common histopathology was serous cystadenoma (28,6%).

Conclusion: Adnexal torsion is a rare gynecologic emergency of women and occur in reproductive ages mostly. Prompt diagnosis and conservative treatment is important for the safety of ovaries and fallopian tubes and future fertility. *J Clin Exp Invest 2014; 5 (1): 7-11*

Key words: Adnexal torsion, conservative management, detorsion

ÖZET

Amaç: Adneksiyal torsiyon tanısı alan hastaların klinik, uygulanan operasyon ve patoloji bulgularının değerlendirilmesi

Yöntemler: Ocak 2009 ile Mart 2013 tarihleri arasında kliniğimize başvurup adneksiyal torsiyon tanısı alan 14 hasta retrospektif olan çalışmamıza dahil edildi. Klinik bulgular, operasyon bulguları, patoloji sonuçlarını içeren bilgiler toplandı.

Bulgular: 16-56 yaş arası olan hastaların ortalama yaşı 28,1±10,5 idi. Bütün hastalara ultrasonografi yapıldı ve adneksiyal kitle bütün hastalarda saptandı. Ortalama kitle boyutu 8,04±2,96 cm idi. Bütün hastalarda alt abdominal ağrı, bulantı ve kusma şikayeti mevcuttu. 6 hastaya laparoskopi, 8 hastaya laparatomi uygulandı. 7 (50,0%) hastaya detorsiyon ve kistektomi yapıldı. Biri ilk trimesterda, diğeri üçüncü trimesterda olan 2 hamile hastaya kistektomi ve detorsiyon uygulandı (biri laparoskopi ile). Bir hastada hidrosalpinkse bağlı izole tubal torsiyon izlendi ve laparoskopik salpenjektomi uygulandı. İki hastada paratubal kist nedeniyle tubal torsiyon izlendi. Birine laparoskopik detorsiyon ve kistektomi, birine laparotomi ile salpenjektomi yapıldı. En sık görülen patoloji seröz kistadenomdu. (28,6 %).

Sonuç: Adneksiyal torsiyon daha çok üreme çağında görülen nadir jinekolojik acillerdendir. Hızlı tanı ve konservatif yaklaşım ile over ve tubaları korumak gelecekteki fertiliteyi korumak için önemlidir.

Anahtar kelimeler: Adneksiyal torsiyon, konservatif yaklaşım, detorsiyon

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INTRODUCTION

Adnexal torsion (AT) is twisting of the ovary and sometimes the fallopian tube [1], it accounts for %3 of all gynecologic surgical emergencies [2,3]. The causes of AT include benign tumors like ovarian cysts, paraovarian cysts, ovarian hyperstimulation, ectopic pregnancy, adhesions and congenital malformations [4-6]. It occurs most frequently in adolescent girls and women of childbearing age [7]. Delay and misdiagnosis of AT can result in a functional loss of the ovary [8]. The purpose of this study was to present our experience with AT in 14 patients.

METHODS

Fourteen patients with diagnosis of AT who presented to our clinic between January 2009 and March 2013 were included in this retrospective analysis. Data including age, gravidity, parity, size of mass, clinical findings like abdominal pain, nausea and vomiting, operation reports, the pathological results were recorded. Size of masses were detected by abdominal ultrasonography in six virgin patients and the other eight patients underwent transvaginal ultrasonography. We detected how many patients underwent laparoscopy or laparotomy. We also recorded type of opearation procedures like detorsion and cystectomy, salpingo-oophorectomy (USO), salpingectomy, total abdominal hysterectomy and bilateral salpingectomy (TAH+BSO).

Statistical analyses were performed using SPSS 18 statistical software. Categorical variables are presented as percentage and continuous variables are presented as mean standart deviation.

RESULTS

The mean age of the patients was 28,1±10,5 with a range of 16 to 52 years . The mean gravidity and parity was 1,07±1,26 (0-3) and 0,78±0,97 (0-3) respectively. All patients underwent ultrasonography, and a pelvic mass appearance was detected in all cases. At 2 of 14 patients color Doppler sonography were performed and one of them had abnormal flow patterns. The mean diameter of the mass was 8,04±2,96 cm. All of the patients had lower abdominal pain, nausea and vomiting. Leukocytosis was detected in 11 (78,6 %) patients. Six patients were operated laparoscopically, while eight patients had laparotomy. (Table 1,Table 4)

Detorsion and cystectomy was performed in 7 (50,0%) of the patients, salpingo-oophorectomy (USO) in 3 (21,4%) of the patients, salpingectomy in 2 (14,3%) of the patients and total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH+BSO) in 2 (14,3%) of the patients who were in menopause (Table 2).

Right side torsion occurred in 7 (50,0%) patients. Two of patients were pregnant in operation time who treated by cystectomy and detorsion of the ovaries successfully in the first and third trimester. One patient at 31-weeks gestation underwent laparotomy. Cystectomy and detorsion of the ovary were performed. Pathological result was reported as mucinous cyst. The other patient at 4-weeks gestation had laparoscopic cystectomy and detorsion. This time pathological result was mature cystic teratoma. There was one patient (31 years old) of isolated fallopian tube torsion treated by laparoscopic salpingectomy and reported as hydrosalpinx. Two of the patients had paratubal cyst and tubal torsion. Detorsion and cystectomy by laparoscopy and salpingectomy by laparotomy were performed for these patients respectively. The pathological results of two patients were reported as paratubal cyts and serous cystadenoma. Reminder of the patients had ovarian torsion.

The most common histopathology was serous cystadenoma (28.6 %). Two of the patients were diagnosed as mature cystic teratoma in our study (14.3%) (Table 3).

Table 1. Demographic data, symptoms, signs, ultrasonographic findings of patients

Age	28,1±10,5
Gravidity	1,07±1,26
Hemoglobin	12,1±1,32
Leukocyte count	11667±1943
Leukocytosis	11 (%78,6)
Diameter of the mass (cm, mean±SD)	8,04±2,96
Time from hospital admission to operation (h, mean±SD)	48,50±62,62
Side of torsion (n, %)	
Right	7 (%50)
Left	6 (%42,9)
Bilateral	1 (%7,1)
Type of operation	
L/S*	6 (%42,9)
L/T**	8 (%57,1)
Pregnancy in operation time	2 (%14,3)

* L/S: Laparoscopy, **L/T: Laparotomy

Table 2. Distribution of the operations

	Laparoscopy	Laparotomy	n	%
Cystectomy+Detorsion	4	3	7	50,0
USO*	1	2	3	21,4
Salpingectomy	1	1	2	14,3
TAH+BSO**	0	2	2	14,3

*USO: Unilateral Salpingo-Oophorectomy; **TAH+BSO: Total Abdominal Hysterectomy and Bilateral Salpingo-Oophorectomy

Table 3. Pathological surgical findings

	n	%
Serous cystadenoma	4	28,6
Mature cystic teratoma	2	14,3
Serous cyst	1	7,1
Mucinous cyst	1	7,1
Mucinous cystadenoma	1	7,1
Corpus luteum cyst	1	7,1
Hydrosalpinx	1	7,1
Paratubal cyst	1	7,1
Follicular cyst	1	7,1
Endometrioma	1	7,1

Table 4. Summary of cases

Patients	age	location	mass (cm)	Admission to operation (hours)	Operation type	Operation procedures	Pathological result
Case 1	16	Left ovary	15	46	L/S*	USO***	Follicular cyst
Case 2	38	Bilateral ovary	Right 9 Left 6	22	L/T**	Cystectomy+ Detorsion	Endometrioma
Case 3	19	Right tube	8,3	20	L/T	Salpingectomy	Paratubal cyst
Case 4	26	Right ovary	8	60	L/T	Cystectomy+ Detorsion	Mucinous cyst
Case 5	31	Right tube	6,3	156	L/S	Salpingectomy	Hydrosalpinx
Case 6	21	Right tube	4,6	63	L/S	Cystectomy+ Detorsion	Serous cystadenoma
Case 7	45	Right ovary	8	14	L/T	TAH+BSO ****	Serous cystadenoma
Case 8	52	Left ovary	4	216	L/T	TAH+BSO	Serous cystadenoma
Case 9	27	Right ovary	10	3 h	L/S	Cystectomy+ Detorsion	Mature cystic teratoma
Case 10	18	Left ovary	9	36	L/T	Cystectomy+ Detorsion	Mucinous cystadenoma
Case 11	20	Right ovary +tube	8,4	6	L/T	USO	Serous cystadenoma
Case 12	28	Left ovary	10	1	L/S	Cystectomy+ Detorsion	Mature cystic teratoma
Case 13	23	Left ovary	4	9	L/S	Cystectomy+ Detorsion	Corpus luteum cyst
Case 14	30	Right ovary	9	27	L/T	USO	Serous cyst

* L/S: Laparoscopy; **L/T: Laparotomy; ***USO: Unilateral Salpingo-Oophorectomy; ****TAH+BSO: Total Abdominal Hysterectomy and Bilateral Salpingo-Oophorectomy

DISCUSSION

AT is a rare gynecologic emergency of women and occur in reproductive ages mostly [10]. Early diagnosis and treatment is important to prevent ovarian function [11]. Clinical symptoms, physical examination, laboratory tests and imaging techniques are not enough for the diagnosis [10-13]. A complete blood count may find leukocytosis. However, there is no correlation between the leukocytosis and tissue necrosis [14]. All of our patients had abdominal pain.

In AT cases had torsion on the right side mostly (67-71%) [15,16]. Seven (50%) of our patients had torsion on the right side.

The common approach is conservative surgery, which is usually detorsion for the twisted ischemic adnexa and ovarian cystectomy to protect ovarian functions [17]. In various studies in the literature, it has been reported that ovarian function is preserved in 88% to 100% of cases after detorsion of the twisted adnexa [18-21]. In our study, 7 patients (50%) treated by cystectomy and detorsion.

The reported incidence of torsion of ovaries in pregnancy, is ranges from 3.2% to 28.6% [22-25]. The incidence is highest during the first trimester of pregnancy [26]. Mature cystic teratomas are the most common ovarian tumors discovered during pregnancy. They are present in 0.3% of pregnancies at 16-20 weeks of gestation. In our study group, two patients were pregnant. (14.2%) (4^{th} and 31^{st} weeks). One patient at 31-weeks gestation underwent laparotomy. Cystectomy and detorsion of the ovary were performed. Pathological result was reported as mucinous cyst. The other patient at 4-weeks gestation had laparoscpic cystectomy and detorsion. This time pathological result was mature cystic teratoma. The outcome of the pregnancy was normal in our patients. Both of them delivered healthy infants at term.

Isolated fallopian tubal torsion is extremely rare, which occurs in 1 in 1.5 million women [27]. It is seen in reproductive ages of 21-40 years and rarely in the perimenopausal age group [27-30]. In our study group, one patient who was 31 years old had isolated tubal torsion due to hydrosalpinx treated by laparoscopic salpingectomy. Two of the patients who were 19 and 21 years old had isolated tubal torsion due to paratubal cyst and salpingectomy and cystectomy- detorsion performed respectively. Their pathological results were paratubal cyst and serous cystadenoma.

Bilateral AT is rare condition. A few cases reported in women using ovarian stimulating drugs in premenarchal girls with synchronous or asynchronous ovarian tumours and bilateral AT complicated by concomitant entanglement of both adnexas [31-33]. In present study one patient who had bilateral ovarian torsion underwent laparotomy. Bilateral cystectomy and detorsion was performed and the pathological result was bilateral endometrioma.

In conclusion, prompt diagnosis and conservative treatment is important for the safety of ovaries and fallopian tubes in young women at the reproductive ages. Surgical procedures are necessary for the certain diagnosis of AT and help us to avoid from complications of AT.

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