

RESEARCH ARTICLE

Surgical management of tuboovarian abscess: Results of retrospective case series

Tubaovaryan apsenin cerrahi yönetimi: Olgu serilerinin retrospektif sonuçları

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ABSTRACT

Objectives: Tuboovarian abscess (TOA) is a serious and potentially life-threatening condition. Treatment modalities vary as broad spectrum of antibioticotherapy, minimally-invasive drainage procedures, invasive surgery or combinations of these interventions. The objective of this study was to evaluate surgically treated patients for TOA.

Materials and methods: The medical records of 57 cases who had surgically treated for TOA at Bakirköy Dr. Sadi Konuk Education and Research Hospital, Department of Obstetrics and Gynecology from January 2007 to September 2012 were evaluated retrospectively.

Results: The average age was 37.2 years and the mean gravidity and parity were 2.9 and 2.1, respectively. The most common presenting symptom was abdominal pain 47.4% (n=27). Twenty eight (49.1%) of the patients had laparotomy and twenty nine (50.9%) of the patients had laparoscopic surgery. 6 patients had a ruptured TOA and 17.9% of the patients had complications.

Conclusions: The choice of an open or laparoscopic surgical approach should be largely based on operator skill, experience, and ability to perform the necessary surgical maneuvers. *J Clin Exp Invest* 2012; 3(4): 463-466

Key words: Complication, laparoscopy, surgery, tuboovarian abscess

ÖZET

Amaç: Tubaovaryan apse (TOA) ciddi ve hayatı tehlikesi bulunan bir durumdur. Tedavi şekilleri olarak geniş spektrumu antibioterapi, minimal invaziv abse drenajı, invaziv cerrahi veya bu tedavi usullerinin kombinasyonunu içermektedir. Bu çalışmanın amacı cerrahi olarak tedavi edilmiş TOA olgularını değerlendirmektir.

Gereç ve yöntem: Ocak 2007-Eylül 2012 tarihleri arasında Bakırköy Dr. Sadi Konuk Eğitim ve Araştırma Hastanesi Kadın Hastalıkları ve Doğum kliniğinde yatırılıp cerrahi tedavisi yapılan hastalar retrospektif olarak incelendi.

Bulgular: TOA olgularında ortalama yaşı 37.2 olarak saptandı. Ortalama gravida ve parite sırası ile 2.9 ve 2.1 olarak bulundu. En sık saptanan semptom olarak %47.4 (n=27) oranı ile karın ağrısı izlendi. %49.1(n=28) hasta laparatomik cerrahi ve %50.9 (n=29) hasta laparaskopik cerrahi geçirdi. 6 hastada rüptüre TOA izlendi ve %17.9 hastada komplikasyon gelişti.

Sonuç: Gerekli cerrahi müdahaleleri gerçekleştirmek için, açık veya laparoskopik cerrahi yaklaşımın seçimi büyük ölçüde operatörün beceri, deneyim ve yeteneğine bağlıdır.

Anahtar kelimeler: Cerrahi, Komplikasyon, laparoskopik, tubaovaryan apse

INTRODUCTION

A tuboovarian abscess (TOA) is an inflammatory mass involving the fallopian tube, ovary and other adjacent pelvic organs (eg, bowel, bladder) occasionally.¹ These abscesses are seen most commonly in reproductive age women and typically originated from upper genital tract infection. TOA is a complication of pelvic inflammatory disease (PID) in 15% of cases, and 33% of patients requiring admission with PID, have a TOA.² TOA's are polymicrobial infections and *E.coli*, *B.fragilis*, peptococci, pepto-streptococci and mix flora especially encountered microorganisms in abscess cavity. The pathogen-

esis of TOA is due to fallopian tubal necrosis and epithelial damage by bacterial pathogens causing a favorable environment for anaerobic invasion and growth. Also these abscesses have important risk factors. Some of these risk factors are IUD use, age > 40, adolescence, low socioeconomic status, multiple sex partners and nulliparity. The most important risk factor in tuba ovarian abscess formation is intercourse a partner having infection because of this disease caused by sexually transmitted infections. Malignancies, gynecological surgery, in vitro fertilization, perforated appendicitis and diverticulitis have also shown to cause abscess formation in lit-

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erature. Also it is rarely seen in virgins. In literature a few cases were published about TOA in virgin patients.³ TOA's especially result in irreversible tubal and ovarian damage and this is a potential threat to fertility. Also this disease may be accompanied other complications such as incapacitating abdominal pain, ectopic pregnancy and abscess rupture. Aggressive medical and/or surgical therapy is required and rupture of an abscess may result in sepsis.^{4,5} Mortality associated with TOA has decreased dramatically over the last 50 years, however the route of management varies. Treatment modalities include broad spectrum antibioticotherapy, minimally-invasive drainage procedures, invasive surgery, or combinations of these interventions.

The objective of this study was to evaluate surgically treated patients for TOA.

MATERIALS AND METHODS

The medical records of the patients who had surgically treated for TOA at Bakirkoy Dr. Sadi Konuk Education and Research Hospital, Department of Obstetrics and Gynecology from January 2007 to September 2012 were evaluated retrospectively. Patients were preoperatively diagnosed as TOA relying on laboratory and ultrasonographic findings in the presence of a mass at the pelvic examination. Ultrasonographic images of TOAs were complex multilocular masses that often obliterate the normal adnexal architecture and/or cul-de-sac anatomy, speckled fluid and internal echoes consistent with

inflammatory debris.⁶⁻⁸ Complications were defined as factors that could result in prolonged hospitalization as; intensive care unit (ICU) admission, bowel or bladder injury, blood transfusion, blood loss >1000 mL, sepsis or bacteremia, ileus, conversion from laparoscopy to laparotomy, and death. Fever was defined as a temperature greater than 38°C.

In our series, antibiotics were started all the patients at the admission to the hospital. After 48 to 72 hours of treatment with antibiotics alone, patients who do not respond to the medical therapy or who had a worsen vital findings, required either minimally invasive abscess drainage or surgery. Statistical Analysis was performed by using the SPSS 20.0 Statistical Software Package (SPSS, Chicago, IL, USA).

RESULTS

57 patients with preoperative diagnosis of TOA were undergone for surgical treatment. The average age was 37.2 years and the mean gravidity and parity were 2.9 and 2.1, respectively. 21.1% of the cases had a history of PID and 17.5% of the patients had smoking habit. The most common symptom was abdominal pain 47.4% (n=27). 29.8% (n=17) of the cases had fever during admission. 49.1% (n=28) of the patients had laparotomy and %50.9 (n=29) had laparoscopic surgery. 6 patients had a ruptured TOA and 17.9% of the patients had complications. Clinical characteristics of the study population are noted in Table 1.

Table 1. Clinical characteristics of the patients with tubo-ovarian abscess

	Mean± SD/ n	%		Mean± SD/n	%
Age	37,2±9,1		WBC, /mm ³	14254±4554	
Gravidity	2,9±1,7		<10000	13	22,8%
Parity	2,1±1,2		WBC	10000 to 15000	19
Smoking	10	17,5%		>15000	25
Previous PID	12	21,1%	Abscess location	Right	15
Contraception	21	36,8%		Left	29
Pain	27	47,4%		Bilateral	13
Abnormal uterine bleeding	12	21,1%	Abscess size	0-4 cm	15
Abnormal discharge	17	29,8%		5-8 cm	28
Fever	17	29,8%		>8 cm	14
Rebound	18	31,6%	Febrile days	0	44
Guarding	19	33,3%		1	4
Uterine tenderness	24	42,1%		2	8
Adnexal tenderness	24	42,1%		3	1
Cervical motion tenderness	21	36,8%	Complication		17,9%
Treatment laparotomy	28	49,1%	Rupture		10,5%
Treatment laparoscopy	29	50,9%	Hospitalization (Days)	6,3±3,8	

PID, Pelvic inflammatory disease; WBC, White blood cells, SD= standard deviation

Table 2. Comparison of some variables according to existence of fever in tubo-ovarian abscess patients

	Febrile				p
	Negative		Positive		
	Mean±SD/n	%	Mean±SD/n	%	
WBC	13250±4157		17650±4318		0,002
WBC	<10000	13	29,5%	0	0,0%
	10000 to 15000	14	31,8%	5	38,5%
	>15000	17	38,6%	8	61,5%
Complication	Negative	36	83,7%	10	76,9%
	Positive	7	16,3%	3	23,1%
Hospitalization (Days)	6,5±4,1		5,5±2,3		0,075

Chi-square test / I.S t test, WBC, White blood cells, SD= standard deviation

DISCUSSION

Tuboovarian abscesses are usually found among reproductive age women. Abdominal pain, vaginal discharge and fever are usually seen in TOA patients.⁹ In our series, we found abdominal pain as the most common presenting symptom. Ginsburg et al¹⁰ reported previous PID in TOA patients as %49. Our patients had a 21.1% previous PID rate. Diagnosing and managing adnexal masses can be problematic for physicians. A preoperative disease classification for patients with adnexal masses, in particular discrimination between benign and malignant ovarian tumors, is important for optimal patient management.¹¹ It is unclear whether a subjective evaluation of a US image (i.e., pattern recognition) of an adnexal mass. In one study the sensitivity of ultrasonography in the diagnosis of TOA was found as 93%, while specificity was 98.6%.¹² In our daily practice we also use ultrasonography as a major diagnostic tool.

Medical management with broad spectrum antibiotics is now generally considered as the initial management for unruptured Tubaovarian abscess.¹³ TOA's are polymicrobial infections and *E.coli*, *B.fragilis*, peptococci, peptostreptococci, *A.israeli* and mix flora especially encountered microorganisms in abscess cavity. The 2010 Center for Disease Control and Prevention Sexually Transmitted Diseases Treatment Guidelines recommends inpatient intravenous antibiotics for at least 24 hours. No specific inpatient antibiotic regimen is suggested. Upon discontinuation of parenteral therapy, the CDC recommends that clindamycin or metronidazole be used with doxycycline for a total of 14 days of treatment. Treatment of TOA was thought to require bilateral oophorectomy and hysterectomy. However, optimal treatment of TOA remains unclear. Doganay M. et al¹⁴ aimed to find out the optimal therapeu-

tic approach in patients. They were used a scoring system for defining the beneficial treatment modality. According to their study laparoscopy seems to be the optimal treatment modality and medical treatment may be a reasonable alternative in well selected cases since it does not carry a risk of operative complications. Surgery or drainage should be considered when the patient displays a failure to respond to therapy in 48 to 72 hours.¹⁵ In our clinic, we use the same algorithm for TOA. Today, the preferable management options are minimally invasive technics with conservative approach. In many clinics laparoscopy has been the gold standard for the diagnosis and treatment of TOA. Henry-Suchet et al carried out laparoscopic adhesiolysis and drainage of abscess in combination with antibiotics in 50 women.¹⁶ In 45 patients (90%) the approach was successful, while five patients (10%) required further surgery. Reich et al reported no complications following laparoscopic and organ-preserving management of tubo-ovarian abscess in 25 patients.¹⁷ Raiga et al also demonstrated that operative laparoscopy involving drainage of adnexal abscesses is a safe and effective procedure.¹⁸ In our study, 29 patients treated laparoscopically. Buchweitz et al reported no complications in the patients who underwent laparoscopic organ-preserving treatment.¹⁹ We defined conversion from laparoscopy to laparotomy as a complication and we evaluate these cases within the laparotomy group. 10 patients had complications in our study but 7 of them were laparoscopy to laparotomy conversion. There were two bowel injuries in 28 patients undergoing laparotomy. Only one port side infection occurred with laparoscopy in 29 patients undergoing laparoscopy. The limitations of our study include a relatively small number of TOAs

In conclusion, the choice of an open or laparoscopic surgical approach should be largely based

on operator skill, experience, and ability to perform the necessary surgical maneuvers given the anatomical distortion.

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