Laparoscopy and Laparotomy in the Management of Benign Ovarian Masses

BENİGN OVARİAN KİTLELERE YAKLAŞIMDA LAPAROSKOPİ VE LAPAROTOMİ

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Abstract

Objective: To evaluate the results of laparoscopy and laparotomy in the management of ovarian masses which are not suspected to be malignant.

Material and Methods: One hundred and six patients requiring surgical management for ovarian masses were assigned to laparoscopy(n:52) or laparotomy(n:54).Inclusion criteria was cystic masses those were not suspected to be malignant with a diameter of <= 10 cm. in ultrasonographic measurements.

Results: There were no differences in demographic characteristics between the two groups.Mean ovarian size in the laparotomy group was 8.3 cm., mean ovarian size in the laparoscopy group was 8.1 cm. All of the ovarian masses were benign except two cases.Endometriotic cysts and dermoid cysts were the most common pathological findings in both groups. Cystectomy was the most preferred operative management. Operation time was not increased with the laparoscopic approach. Both two procedures (L/S and L/P) were associated with similar postoperative pain, analgesic requirement,hospital stay and recovery period.There were no life threatening intraoperative or postoperative complication in both groups.

Conclusion: Operative laparoscopy and laparotomy can be used in the management of benign ovarian masses satisfactorily. Both two procedures have benefits over each other. Surgeon should select procedure in which he feels more success and safety.

Key Words: Ovarian masses, laparoscopy, laparotomy

Özet

Amaç: Malignite şüphesi olmayan ovarian kitlelere yaklaşımda laparoskopi ve laparotomi sonuçlarının değerlendirilmesi.

Gereç ve Yöntemler: Ovarian kitle nedeniyle cerrahi yaklaşım gereken yüzaltı hastaya laparoskopi (n:52) veya laparotomi (n:54) uygulandı. Dahil edilme kriterleri ultrasonografik olarak <=10cm. olması ,malignite şüphesi olmaması ve kistik kitle olması idi.

Bulgular: Demografik karakteristik olarak iki grup arasında fark yoktu. Ortalama ovarian boyut laparotomi grubunda 8.3cm. laparoskopi grubunda 8.1cm idi. İki vaka dışında bütün ovarian kitleler benign idi. Her iki grupta da patolojik olarak en sık endometriotik kist ve dermoid kist saptandı.En çok tercih edilen cerrahi yaklaşım kistektomiydi.Laparoskopik yaklaşımda operasyon süresi uzamadı. Her iki prosedürde de benzer postoperatif ağrı, analjezik ihtiyacı, hastanede kalma süresi ve iyileşme süresi saptandı. Her iki grupta da inraoperatif veya postoperatif hayatı tehdit eden komplikasyon olmadı.

Sonuç: Operatif laparoskopi ve laparotomi benign ovarian kitlelere yaklaşımda başarıyla uygulanabilir. Her iki prosedürün de birbiri üzerine avantajları vardır. Cerrah kendisini en başarılı ve güvende hissettiği prosedürü seçmelidir.

Anahtar Kelimeler: Ovarian kitleler, laparoskopi, laparotomi

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Suspected ovarian neoplasm is a common clinical problem affecting women of all ages. It has been estimated that approximately 5-10% of women in the United States will undergo surgical procedure for a suspected ovarian neoplasm during their lifetime.[1] Traditional management has relied on laparotomy to avoid undertreatment of a potentially malignant process.

In the management of cystic ovarian masses both approaches by laparoscopy and by laparotomy can be used. Laparoscopy (L/S) has been accepted as a gold standart in surgery of benign ovarian masses, but conventional laparotomy (L/P) has been used more frequently. It is generally accepted

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that laparoscopy is a better operative approach than laparotomy in the management of benign ovarian masses but there is no good scientific evidence to support this.[2-4, 7]

Preoperative evalution should be carried out to exclude possible malignancies.History, examination, ultrasonography and ovarian tumor markers (Ca-125) should be investigated carefully.[2-6, 8]

Material and Methods

The study was carried out in Department of Gynecology in Aegean Social Security and Maternity Teaching Hospital between January 2001 and December 2002. All women with an ovarian cystic mass requiring surgical management were included in the study and informed consents were taken from them.

All the cystic masses were accepted as benign with a tumor size<10 cm. measured by ultrasonography and normal CA-125 levels (In the study period, it was not possible to investigate the other tumor markers except CA-125 in our hospital). Pathologic, gynecologic and ultrasonographic analysis of the cases were investigated retrospectively.Laparoscopy (n: 52) or laparotomy (n: 54) was carried on according to the surgeon's choice depending on his or her success on the procedure. All patients were informed and their signs were taken before for their approval. There were 52 cases in L/S group and 54 cases in L/P group.

Preoperative assesment was carried by USG. All cystic masses with a distinct border and no evidence of irregular solid parts, thick septa or ascites and with elevated levels of CA-125 >35 U/ml were not included in the study groups.Dermoid cysts with the appearance of an echogenic mural focus or a highly echogenic area inside were included. All patients had routine preoperative laboratuary analysis and physical examinations. Doppler USG investigations to the adnexial masses have not be done.

Laparotomy was performed through a Phannenstiel incision. All laparoscopic procedures were performed through three trochars and haemostasis achived with bipolar coagulation. Adnexial adhesions were assessed according to the American Fertility Society classification. Postoperative care was standardized for all cases. Same antibiotic prophylacsis and postoperative analgesic therapies were administered to all patients in both groups. Statistical analysis were performed with the use of the student t test and x2 analysis.

Results

106 patients were recruited into the study. Among 106 patients 54 were operated by laparotomy and 52 by laparoscopy. The two groups were similar in age, parity, presentation, pathological features (Table 1-2). There were no significant difference in the adnexial adhesion scores in two groups. Mean age for the laparotomy and laparoscopy group were 32.1 and 30.2 years respectively. Mean ovarian size in the laparotomy and laparoscopy groups were 8.3 and 8.1 cm respectively and they were not statistically different. 4 cases in laparoscopy group (1 of them was mucinous cystadenoma, 3 of them were endometriotic cysts) ant 6 cases in laparotomy group (1 of them was mucinous cyst, 5 of them were endometriotic cysts) were bilateral.

The mean operation time in L/S group was 65 minutes, the mean operation time in L/P group was 53 minutes. There was no statistically significant difference in mean operation times between two groups. There was no statistically significant difference in haemoglobin level changes between two groups.

Table 1. Clinical characteristics of patients.

	Laparotomy (n:54)	Laparoscopy (n:52)
Mean age (yr)	32.1	30.2
Multiparous	42(77.7%)	40(76.9%)
Complaint		
Asymptomatic	23 (42.5%)	19 (36.5%)
Pelvic mass	7 (12.9%)	8 (15.3%)
Pelvic pain	15 (27.7%)	14 (26.9%)

Table 2. Histopathological diagnosis of the ovarian masses.

PATHOLOGICAL DIAGNOSIS	n	%
Dermoid cyst	23	21.6
Serous cystadenoma	11	10.3
Mucinous cystadenoma	9	8.4
Functional cyst	9	8.4
Endometriotic cyst	52	49.5
Serous papiller adeno carsinoma	2	1.8
TOTAL	106	100

Preoperative peritoneal cytologic examinations of all cases were benign. Frozen section examinations were applied to all cases in the laparotomy and laparoscopy groups. Except 2 cases in the laparotomy group, all cases were benign according to frozen section examination. All ovarian masses were benign except two cases which were diagnosed as serous papillary adeno carcinoma grade II and stage II a postoperatively. These two malign cases were in the laparotomy group. Intraoperative frozen section examination result of these cases were also malign and according to their no desire of fertility desire TAH+BSO+PPLA+Appendectomy+Ommentecto my were carried out and postoperatively adjuvant chemotherapy protocol was applied to these cases.

In the laparoscopy group the cysts were ruptured in 16 of 52 (30.7%) cases during the manuplation, in the laparotomy group 2 of 54 cysts were ruptured (3.7%). According to intraoperative observation in the 2 cases which were suspected as malignant, endobags were used but frozen section examination results of these cases were benign.

Two patients had an inferior epigastric artery injury during insertion of the 10mm.trochar, the bleeding was controlled. One patient in the L/P group with a previous cesarian section sustained a bladder injury. In the laparoscopy group, loop sutures were applied to ovaries in 3 cases in which the haemostasis were not achieved by bipolar coagulation.

Postoperative febrile morbidity, urinary tract infection and wound infections were significantly higher in L/P group ($p<0.05$) (Table 3).

Post operative analgesic requirement in L/P group was significantly higher than L/S group in the first 24 hours.Fifty three percent of patients in the L/S group required no analgesia after surgery compared with 12% in the L/P group($p<0.001$). There was no statistically significant difference between the postoperative requirement of morphin in two groups ($p>0.01$) (Table 4).

The mean hospital stay was significantly shorter in the L/S group (2.1 versus 1.6 days $p<0.001$). Patients in the L/S group recovered more quickly than those in the L/P group.

Discussion

It is generally accepted that L/S is a better operative approach than L/P in the management of benign ovarian masses.

When operation techniques are compared, the experience of surgeon becomes an important factor.L/S surgery generally requires a longer operation time because of the difference in the surgical technique, the need to change instruments frequently and the time for specimen removal. When cystectomy is performed by L/P the ovary is usually closed with sutures to reduce the adhesion formation. After L/S cystectomy the ovary is generally left open. It's suggested that ovarian closure is unnecessary after L/S cystectomy because postoperative adhesion rate appears to be minimal.[15]

Table 3. Postoperative complications.

	L/P (n:54)	L/S (n:52)
Febrile morbidity	5 (9.2%)	3 (5.7%)
Urinary tract infection	7 (12.9%)	5 (9.6%)
Wound infection	4 (7.4%)	2 (3.8%)

Table 4. Postoperative additional analgesic requirement.

	L/P (n:54)	L/S(n:52)	
Analgesic requirement			
-no additional analgesia	2 (23.0%)	29 (53.7%)	<0.001
-total dose of morphin	0.8	0.5	p> 0.01

It is generally believed that L/S management of ovarian cysts increase the risk of rupturing of the cyst and spillage of the cyst content. At least two thirds of ovarian cysts can be removed intact by L/S or L/P.[9,10,14] Although peritoneal irrigation has been done to prevent postoperative peritonitis and adhesion formation, there are no studies to support this. As a matter of surgical principle, all ovarian cysts should be removed intact if possible[11-13]. In our study 30.7% of the cysts in laparoscopy group and 3.7% of the cysts in laparotomy group were ruptured.

This study compared the operative morbidity, postoperative analgesic requirement and length of hospital stay of two techniques-L/S and L/P in the management of benign ovarian masses. It is difficult to compare the length of hospital stay in different countries because of differences in opportunities of postoperative care.

Although L/S approach is less invasive than L/P, the decision to perform ovarian surgery by L/S should not be different from the decision for L/P. L/S approach to benign ovarian masses offers significant advantages over conventional L/P.

In conclusion preoperative proper evaluation of adnexial masses is important before surgical therapy. Although L/S approach reduces morbidity, hospital stay and recovery, surgeon should select the procedure in which he feels more successful and safe.

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