

# Laparoscopic Management of Selected Cystic Adnexal Masses in Postmenopausal Women

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## Abstract

**Objective:** To evaluate the safety and effectiveness of laparoscopic surgery in selected post-menopausal women who were predicted to have benign adnexal masses.

**Materials and Methods:** We reviewed the records of 39 postmenopausal women who underwent laparoscopic intervention due to adnexal mass between January 2002 and December 2003. Two hundred eighty-eight premenopausal patients managed by operative laparoscopy during the same period of time were served as controls. Laparoscopic management was attempted on patients without evidence of advanced ovarian cancer and preoperative selection criteria were: cystic adnexal mass less than 10 cm with distinct borders, without solid parts and thick septations and a serum CA-125 level less than 35 mIU/mL. Intraoperative frozen section was performed in all patients and laparotomy was performed if indicated by pathologic findings, technical difficulty or serious complications.

**Results:** Thirty-nine postmenopausal women were enrolled in the study. Thirty-seven (94.8%) women were successfully managed by operative laparoscopy, where operative hysteroscopy was included in the procedure in 4 patients for concomitant intrauterine lesions. Adnexal mass bilaterality was not different between premenopausal and postmenopausal women ( $p=0.64$ ). Only one (2.5%) ovarian cancer (endometrioid adenocarcinoma) was diagnosed by histologic examination and managed by laparotomy in the postmenopausal group. Although no complications were encountered, laparotomy was performed due to technical difficulty in one case of severe pelvic adhesions that had a previous pelvic surgery in the study group. There were no significant differences in conversion to laparotomy and diagnosis of a malignant disease between the groups ( $p=0.43$  and  $0.39$ , respectively). Mean operating time and mean postoperative hospital stay also was not significantly different.

**Conclusion:** Operative laparoscopy is a safe and effective alternative to laparotomy in the management of selected cystic adnexal masses in postmenopausal women, with a very low risk of unintentionally operating an ovarian carcinoma if a thorough preoperative evaluation is conducted. The combination of clinical examination, transvaginal ultrasonography and serum CA-125 levels can successfully predict benign adnexal masses with a rare incidental ovarian malignancy.

**Keywords:** laparoscopy, cystic adnexal mass, menopause

## Özet

### Postmenopozal Kadınlarda Seçilmiş Adneksiyal Kistik Kitlelerin Laparoskopik Tedavisi

**Amaç:** Benign adneksiyal kitlesi olduğu düşünülen postmenopozal kadınlarda laparoskopinin güvenilirliğini ve etkinliğini değerlendirmek.

**Materyal ve Metot:** Ocak 2002-Aralık 2003 tarihlerinde adneksiyal kitle nedeniyle laparoskopik girişim uygulanan 39 postmenopozal kadının kayıtları incelendi. Aynı dönemde operatif laparoskopik uygulanan 288 premenopozal hasta ise kontrol grubunu oluşturdu. Over kanseri bulguları taşımayan olgulara laparoskopik girişim uygulandı ve seçim kriteri olarak, kapsül yapısı belirgin, 10 cm'den küçük kistik adneksiyal kitle, solid alanların ve kalın septasyonların bulunmaması ve serum CA-

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125 düzeyinin 35 mIU/mL'den düşük olması alındı. Tüm olgulara intraoperatif patolojik konsültasyon istendi ve malignite saptanması, teknik güçlük veya ciddi komplikasyon varlığında laparotomiye geçildi.

**Sonuçlar:** Çalışma için 39 postmenopozal olgu kaydedildi. Otuz yedi (%94.8) olguda operatif laparoskopi başarı ile sonuçlandırılırken, bu olguların dördünde eşlik eden intrauterin lezyon nedeniyle prosedüre histeroskopi eklendi. Premenopoz ve postmenopoz grupları arasında adneksiyal kitle bilateralitesi açısından fark bulunmadı ( $p=0.64$ ). Postmenopozal grupta sadece bir olguda (%2.5) over kanseri (endometrioid adeno kanser) saptandı ve hastaya laparotomi uygulandı. Olguların hiçbirinde ciddi komplikasyon saptanmazken, çalışma grubunda geçirilmiş pelvik operasyonu bulunan ve ciddi pelvik adezyonları olan sadece bir olguda teknik güçlük nedeniyle laparotomiye dönüldü. Gruplar arasında laparotomiye dönüş ya da malignite saptanması açısından anlamlı bir fark saptanmazken (sırasıyla  $p=0.43$  ve  $0.39$ ), ortalama operasyon süresi ve ortalama hastanede kalış süresi açısından da anlamlı bir fark saptanmadı.

**Tartışma:** Postmenopozal evrede seçilmiş kistik adneksiyal kitlelerin tedavisinde operatif laparoskopi, laparotomiye güvenilir ve etkin bir alternatif olup, eksiksiz bir preoperatif değerlendirme yapılması halinde istenmeyen bir overyaryan kanserin opere edilme riski oldukça düşüktür. Pelvik muayene, transvajinal ultrasonografi ve serum CA-125 düzeyi kombinasyonu ile benign adneksiyal kitleler, nadir over kanseri insidansı ile başarıyla saptanabilir.

**Anahtar sözcükler:** laparoskopi, kistik adneksiyal kitle, menopoz

## Introduction

Improvements in technology continue to expand the role of laparoscopic surgery for the gynecologist, with the removal of adnexal masses. The promises of less postoperative pain, faster recovery times and lower costs have driven patient demand and more gynecologic procedures are now performed laparoscopically than in the past (1).

Concerns regarding the laparoscopic management of adnexal masses include failure to diagnose ovarian malignancies, tumor spillage, inability to proceed immediately with a staging procedure and delay in therapy (2). However, it has been shown that in non-oncology referral practices, the incidence of unexpected ovarian malignancy is low (3).

In this study, our aim was to evaluate the safety and effectiveness as well as predictors of clinical outcomes of laparoscopic surgery in selected post-menopausal women who were predicted to have benign adnexal masses.

## Materials and Methods

We reviewed the records of 39 postmenopausal women who underwent laparoscopic intervention due to adnexal mass between January 2002 and December 2003. Two hundred eighty-eight premenopausal patients managed by operative laparoscopy during the same period of time were served as controls.

A thorough pelvic examination and transvaginal sonography was performed preoperatively in all patients. Endometrial sampling was performed in postmenopausal women, if endometrium was  $>5$ mm. Laparoscopic management was attempted on patients without evidence of advanced ovarian cancer and preoperative selection criteria were: cystic adnexal mass less than 10 cm with distinct borders, without solid parts and thick septations and a serum CA-125 level less than 35 mIU/mL.

A single surgical protocol was followed for all patients. Trocars were placed either directly or by open technique

at the umbilicus, in both lower quadrants and if indicated suprapubically. Initially, upon visualizing the abdomen and pelvis, peritoneal washings were taken from the cul-de-sac. Either cystectomy or oophorectomy was performed depending on the patient's status. Intraoperative frozen section was performed in all patients and laparotomy was performed if indicated by pathologic findings, technical difficulty or serious complications.

Statistical analysis was performed using SPSS statistical software (SPSS 11 for Windows, SPSS Inc, Chicago, USA). The significance of difference between the study and control groups was analyzed by using  $\chi^2$  or Fisher's exact test of association as appropriate for nominal data and the unpaired  $t$  test for comparison of population means. A value of  $p<0.05$  was considered statistically significant.

## Results

Thirty-nine postmenopausal women were enrolled in the study. Demographic characteristics of patients included in the study were shown in Table 1. Thirty-seven (94.8%) women were successfully managed by operative laparoscopy and included adnexectomies, cystectomies and laparoscopically assisted vaginal hysterectomies (LAVH), where operative hysteroscopy was included in the procedure in 4 patients for concomitant intrauterine lesions. While adnexectomy and LAVH was performed more often in the study group, cystectomy rate was significantly higher in the control group (Table 2). Adnexal mass bilaterality was not different

**Table 1.** Demographic characteristics of the study population

	Study group (n=39)	Control group (n=288)	Statistical significance (p)
Age*	56.7±6.8	42.2±6.6	<0.0001
Parity*	4.3±1.8	3.2±1.3	<0.0001
Previous abdominal surgery†	7 (17.9)	29 (10)	0.43

\*Presented as mean±standard deviation (SD)  
†Presented as number and percent

**Table 2.** Intraoperative and postoperative clinical data of the study population

	Study group (n=39)	Control group (n=288)	Statistical significance (p)
Type of surgery*			
Laparoscopy			
• Cystectomy	5 (12.8)	226 (78.5)	<0.0001
• Adnexectomy	23 (58.9)	34 (11.8)	<0.0001
• LAVH†	7 (17.9)	9 (3.1)	0.0003
Laparoscopy+hysteroscopy	4 (13.3)	19 (6.6)	0.61
Conversion to laparotomy*	2 (5.1)	5 (1.7)	0.43
Adnexal mass bilaterality*	5 (12.8)	50 (17.3)	0.64
Diagnosis of malignant disease during surgery*	1 (2.5)	3 (1)	0.39
Mean operating time (min.) ‡	48.3±19.2	53.7±24.8	0.19
Mean hospital stay (days) ‡	1.4±0.8	1.2±0.7	0.37
* Presented as number and percent			
‡ Presented as mean ±standard deviation (SD)			
† LAVH: Laparoscopically assisted vaginal hysterectomy			

between premenopausal and postmenopausal women (17.3% and 12.8%, respectively; p=0.64).

Only one (2.5%) ovarian cancer (endometrioid adenocarcinoma) was diagnosed by histologic examination and managed by laparotomy in postmenopausal group and 3 (1%) ovarian malignancies were diagnosed in premenopausal patients. Although no complications were encountered, laparotomy was performed due to technical difficulty in one case of severe pelvic adhesions that had a previous pelvic surgery in the study group (Table 2). There were no significant differences in conversion to laparotomy and diagnosis of a malignant disease (p=0.43 and 0.39, respectively) between the groups. Mean operating time and mean postoperative hospital stay also was not significantly different (Table 2).

## Discussion

Laparoscopic management of adnexal masses continues to evolve due to increased surgical expertise and technical progress. It is possible to treat by laparoscopy select patients with adnexal masses who are at low risk for cancer. The incidence of unsuspected cancers discovered at the time of laparoscopy has been shown to be exceptionally low (3,4). Our data represent that, the incidence of adnexal malignancy is quite low in carefully selected postmenopausal group.

Although the accuracy of the combination of clinical, radiologic and biochemical markers to predict benign masses in postmenopausal women do not differ widely (3,5), some investigators have demonstrated a 100% positive predictive value for determination of a benign pathology (6-7).

Conversion to laparotomy rates observed in this study are comparable to those previously published (5,8), but in our study complication rates were found to be less than many reports in the literature in the postmenopausal group (9). This

is maybe due to careful selection of patients and the technical ability of the surgeon.

In conclusion, laparoscopy is the appropriate management of cystic adnexal masses, with a very low risk of unintentionally operating an ovarian carcinoma if a thorough preoperative evaluation is conducted. Only in centers where surgeons have enough training to cope with ovarian cancer may this evaluation be deferred, since conversion to laparotomy should be considered a second therapeutic step, and not an incorrect indication for laparoscopy. In centers where surgeons have not such training, strict preoperative selection is mandatory.

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