

# Ovarian tumors in young females. A laparoscopic approach

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## Summary

Ovarian tumors are one of the major preoccupations in the everyday practice of gynecology. During the period January 1997 through December 2000, 54 cases of ovarian tumors in young females aged 14-20 years were diagnosed and managed laparoscopically in our institution. Twenty-two cases of mature cystic teratoma, 12 cases of endometriosis, eight cases of serous cystadenoma, five cases of mucinous cystadenoma, three cases of fibroma-thecoma, two cases of serous low-malignant tumors and one case of mucinous low-malignant tumor were found. The management of ovarian tumors during this age by laparoscopic techniques represents an efficient and safe procedure.

*Key words:* Ovary; Tumor; Laparoscopy; Adolescence.

## Introduction

Ovarian tumors, although rare in the first two decades of life, represent the most frequent tumors of the female genital tract at this age [1]. The frequency, clinical and therapeutical particularities differentiate them from the same tumors of older women [2, 3]. Given that surgical assessment is often necessary, it is only natural to propose the least invasive means possible to preserve fertility.

The use of laparoscopy for the treatment of ovarian tumors during adolescence provides a convenient minimally traumatic procedure [4, 5]. Laparoscopy has been applied since 1970 for the diagnosis and treatment of ovarian disorders. Nowadays it is also widely accepted and used in the diagnosis and treatment of ovarian tumors in young females [6, 7].

The aim of our study was to evaluate the efficacy and safety of laparoscopy as a surgical procedure and to analyse the frequency and the histopathological diagnosis of these ovarian tumors identified and treated in our institution.

## Materials and Methods

Ovarian tumors seen in young females, aged 14-20 years, and managed laparoscopically, during the period January 1997 through December 2000 were retrospectively studied. During this period 54 cases of ovarian tumors were diagnosed and managed laparoscopically in the Division of Laparoscopic Surgery of the 1<sup>st</sup> Department of Obstetrics and Gynecology, University of Athens, «Alexandra» Hospital, Athens, Greece. The evaluation of the tumors was based mainly on history, clinical examination, ultrasound examination and tumor markers. The histopathological analysis of these tumors was done according to the World Health Organization classification. Only one case proceeded to laparotomy due to high levels of Ca 125.

The endoscopic procedure included inspection of the upper and lower abdomen. The size and location of the tumor was determined and excision of the disease followed. Laparoscopy was performed under general anesthesia with CO<sub>2</sub> pneumoperitoneum, multiple puncture method and intraperitoneal cystectomy. The patients were followed-up for a minimum period of three months.

## Results

From the 258 surgical laparoscopies performed during this period for ovarian tumors, 54 (20.9%) were on adolescents. The mean age of patients was 18±1.6 years and the operative time was 76.5±15.2 minutes. Hospitalization was usually for one day and patient follow-up was programmed for a 3-month consultation. No laparotomy was needed and no serious complications were seen (Table 1). In many cases more than one symptom was observed. The most frequent clinical symptoms were abdominal pain (32 cases), abdominal palpable mass (22 cases), menstrual disorders (7 cases), vomiting (4 cases) and abdominal distension (3 cases). The size of the tumors were 4-5 cm (18 cases) 6-7 cm (26 cases), 8-10 cm (8 cases) and more than 10 cm (2 cases).

Emergency laparoscopic excision was performed in six cases and elective laparoscopic excision in 47 cases. One case of detorsion of adnexa was also performed. The hi-

Table 1. — *Pre- and postoperative clinical data*

Clinical parameter	Range	Mean±SD
Age (years)	14-20	18±1.6
Weight (Kg)	50-70	65±5.4
Operative time (mins)	25-105	76.5±15.2
Hospitalization (days)	1-3	1.6±0.7
Laparotomy (cases)	0	
Complications	0	
Follow-up (months)	3-6	4.0±0.4

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Table 2. — Operative laparoscopy clinical data of ovarian tumors

Size of tumor (cm)	Clinical findings	Procedure	Histopathology
4-5 (18 cases)	Abdominal pain (32 cases)	Emergency laparoscopic excision (6 cases)	Mature cystic teratoma (22 cases)
6-7 (26 cases)	Abdominal mass (22 cases)	Elective laparoscopic excision (47 cases)	Endometriosis (12 cases)
8-10 (8 cases)	Menstrual disorders (7 cases)	Detorsion of adnexa (1 case)	Serous cystadenoma (8 cases)
>10 (2 cases)	Vomiting (4 cases)		Mucinous cystadenoma (5 cases)
	Abdominal distension (3 cases)		Fibroma-thecoma (3 cases)
			Serous low-malignant tumor (2 cases)
			Mucinous low malignant tumor (1 case)

stopathological analysis of the tumors (Table 2) showed mature cystic teratoma (22 cases), endometriosis (12 cases), serous cystadenoma (8 cases), mucinous cystadenoma (5 cases), fibroma-thecoma (3 cases), serous low-malignant tumors (2 cases) and mucinous low-malignant tumor (1 case).

## Discussion

Ovarian tumors are one of the gynecologist's constant problems [7, 8]. The findings of an adnexal mass varies in importance according to multiple factors such as the patient's age, symptoms reported and physical characteristics of the mass [9].

The management of these tumors especially in young females requires methods that avoid adhesion formation and infertility. Although, a minimally invasive operation may nonetheless be indicated for the removal of a mono-locular simple ovarian cyst or cystic tumor, it is essential that this operation be performed under conditions that permit an immediate review of the situation.

Recent advances in endoscopic surgical techniques including the development of video equipment have offered new possibilities for the laparoscopic surgeon. Diagnostic laparoscopy has become widely used and almost all abdominal gynecological surgery for benign disease can now be performed by operative laparoscopy [10]. Laparotomy is seldom required in performing oophorectomy or adnexectomy for benign disease in the adnexa since the introduction of laparoscopic techniques.

Some authors have reported on the role of serum Ca 125 in the preoperative evaluation of patients with pelvic masses as a diagnostic adjunct for discriminating benign from malignant masses [11, 12]. In women of reproductive age there is a high incidence of false positive results. In fact, Ca 125 serum titres may also be high in cases of endometriosis, pelvic inflammatory disease and uterine fibroids. On the other hand, in postmenopausal women, a false negative Ca 125 titer in four cases out of 12 [13] and in 50% of patients with stage I ovarian carcinoma [14] has been reported. In consideration of this, the selection of patients for laparoscopic surgery must not depend only on serum levels of Ca 125, but also on other clinical parameters such as ultrasound and Doppler.

In view of the high sensitivity of the ovary to surgical trauma, ovarian surgery in young females should be performed as meticulously as possible and only when appropriate indications are present.

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