Operative treatment of gynaecologic diseases in puberty: seven years of experience

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Summary

Purpose of investigation: The aim of this study is to present the incidence and surgical management of gynaecologic pathology in adolescence in the 1st Obstetrics and Gynecology Department of Aristotle University of Thessaloniki. *Methods:* After a retrospective review of the medical records of over a seven year period (2004-2011), 32 adolescent patients with reported surgical gynaecologic procedures were identified and analysed. *Results:* Fourteen out of the 16 adolescents with ovarian masses (eight neoplastic and eight non-neoplastic) were treated by laparoscopy. Congenital anomalies were diagnosed in seven patients and only one of them was treated by laparotomy. The rest were surgically treated for uterine leiomyoma (1), ectopic pregnancy (2), pelvic abscess (1), mesosalpingeal cysts (2), mesenterian cyst (1) and investigation of chronic pelvic pain. *Discussion:* Although benign ovarian cysts and congenital anomalies represent the major indication for operative treatment of gynaecologic diseases in puberty, laparoscopy and/or hysteroscopy should be the gold standard procedure after careful preoperative investigation.

Key words: Adolescent; Laparoscopy; Ovarian cyst; Congenital anomalies.

Introduction

Surgical treatment of gynaecologic disease in puberty presents differences from those in adulthood. The treatment modalities are further complicated by considerations of fertility. Psychological issues of puberty are also of central importance. The diagnosis of an ovarian mass is a stressful experience at every age; in puberty it is considered to be traumatic to the patient and familly. There are numerous studies involving considerable populations in adolesence. These studies suggest that ovarian masses compromise the most common type of tumour of the reproductive system at adolescence, of which 65% are benign while 35% present malignancy [1, 2]. Tumours of the uterus are very rare in puberty. The most common presenting symptom for malignant tumours is vaginal bleeding [3]. Tumours of the vulva also present with decreased incidence while cervical and vaginal tumours in puberty are very rare.

The aim of this study is to present the experience of the 1st Departement of Obstetrics and Gynecology at Aristotle University of Thessaloniki in the management and treatment of surgical gynaecologic pathology in adolescence.

Material and Methods

A retrospective study of adolescent patients from 13-18 years of age, that presented and were treated surgically at the 1st Obstetrics and Gynecology Department of Aristotle University of Thessaloniki with gynaecologic pathology during the period 2004-2011. The common presenting symtoms were abdominal pain, palpable abdominal mass and/or abdominal distention, menstrual disturbances and amenorrhoea. First diagnosis was based on physical examination. Blood exams included blood count biochemical hormonal evaluation; in cases of ovarian masses tumour markers were performed. Imaging studies that were used for differential diagnosis were ultrasound (US) and in some cases computed tomography (CT).

Results

During the above-mentioned period 32 adolescent patients were treated surgically. The mean age was 15.9 years old (range 13-18). The main presenting symptoms were abdominal pain, palpable abdominal mass and/or abdominal distention, menstrual disturbances and amenorrhoea. Twenty-one were treated with laparoscopy, eight with laparotomy and three with vaginal procedures. Table 1 presents the 32 cases classified according to diagnosis.

Sixteen ovarian masses were treated. Eight were neoplastic (6 were mature cystic teratomas and 2 serous ovarian cystadenomas) and eight non neoplastic (3 were follicular ovarian cysts and 5 luteal ovarian cysts). Fourteen were treated by laparoscopy and two by laparotomy. Of 16 ovarian masses, only three oophorectomies were performed, two by laparoscopy and one by laparotomy. In two cases of luteal cyst rupture, haemostasis was performed – one by laparoscopy and one by laparotomy, and in the remainig 11 cases laparoscopic removal of the ovarian mass was performed.

Congenital anomalies of the reproductive tract were diagnosed in seven patients of which one was treated by laparotomy, while the rest were treated transvaginally with hysteroscopy and laparoscopy. The most common congenital anomaly was Rokitansky-Mayer-Kuster-Hauser syndrome which was treated by the neovagina formation-Davidoff procedure.

One uterine tumour (leiomyoma) was removed by laparoscopy. The two ectopic pregnancies were treated by laparoscopic salpingectomy. One pelvic abscess was treated by laparoscopic drainage. Two mesosalpingeal cysts and a mesenterian cyst were laparosopically removed. Finally for the two cases with chronic pelvic pain diagnostic laparoscopy was performed and revealed no pathological findings.

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Table 1. — *Thirty-two cases of gynaecologic pathology in puberty classified depending on the final diagnosis.*

Pathology	No. of patients
Neoplastic ovarian tumors	*8*
Mature cystic teratoma	6
Serous ovarian cystadenoma	2
Non neoplastic ovarian cysts	*8*
Follicular ovarian cysts	3
Luteal ovarian cysts	5
Congenital anomalies of reproductive tract	*7*
Vaginal diaphragm	1
Rokitansky syndrome	2
Uterine diaphragm	1
Didelphys uterus	1
Gonadal dysgenesia	1
Cervical atresia	1
Uterine tumours	
Leiomyoma	1
Others	*8*
Ectopic pregnancy	2
Pelvic abscess	1
Mesosalpingeal cyst	2
Mesenterian cyst	1
Diagnostic laparoscopy for chronic pelvic pain	2

Discussion

Whether benign or malignant, functional or organic, fluid or solid, ovarian masses are the most common gynaecologic tumours, with benign tumours and functional cysts predominating. The annual incidence of ovarian neoplasms is estimated at 2.6 per 100.000 girls and they are very rarely malignant, representing only 1% of all cancers in children and adolescents [4, 5]. In our study ovarian masses represent 50% (100% benign) from the overall pathology in adolescent patients that were treated operatively.

The most common presenting symptom is abdominal pain: pain may be subacute, abdominal and pelvic, sometimes recurrent and/or chronic. In other cases, a palpable mass may be detected after a complaint of pelvic heaviness with varying degrees of tenderness [6]. Torsion is the most common complication of ovarian masses with frequency ranging from 3% to 33% [7, 8]. When the ovarian mass manifests with acute pain, torsion is highly probable 42% [8].

The means of diagnosis included: imaging studies (US, CT), laboratory studies such as pregnancy test, blood count, erythrocyte sedimentation rate, C-reactive protein [9], hormonal investigations and serum tumour markers. Information obtained from those imaging and laboratory studies are very useful. Nevertheless, the use of intraoperative biopsy is of great importance to decide how radical the operation should be. The central concern of the surgeon should be fertility preservation. For this reason a conservative approach to the adolescent patient is preferred [10].

In the current study non-neoplastic ovarian masses represented 25%. According to the international literature, follicular cysts represent the most common histologic diagnosis [11]. In our series, they accounted for 37.5%. The main presenting symptom was acute pelvic pain due to rupture or torsion. The most common procedure performed as indicated was laparoscopy.

Surgical procedures for congenital anomalies of the reproductive tract are diagnosed most usually at younger ages. The diagnosis is most commonly based on evaluation for primary amenorrhoea [12]. In our study the mean age of diagnosis of congenital anomalies of the reproductive tract was at 15.1 years and they represented 21.8% of the overall pathology in adolescent patients treated operatively. Obstructive abnormalities are more likely to be associated with pelvic pain and endometriosis. Diagnosis of an obstructive mullerian abnormality can be difficult and may require a combination of history, examination, radiologic imaging (US and/or MRI), laparoscopy and hysteroscopy [13]. Furthermore investigation of the urinary tract should be performed due to the common embryologic origin and the usual coexistence of anomalies in both [12].

Laparoscopy represents the gold standard procedure with the benefits of shorter hospital stay and future fertility preserving potential, especially in the absence of contraindications such as suspicious masses.

In conclusion, the target group of adolescent gynaecologic disorders requiring operative intervention differ substantively from those in adulthood in means of incidence and management.

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