Original Paper

Ovary Lessions Evolution in Menopause

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ABSTRACT Background. In the past, any detection of adnexal cystic masses was considered abnormal and would result in routine surgery. But the results of several studies concluded that ovarian cysts, especially those smaller than 5 cm in diameter, are hardly malignant. Such cysts constitute an important source of false-positive results in any ovarian screening program. **Patients and Method** In our study there were included 51 patients who met the following criteria: menopausal status, whether surgical or natural, for at least 1 year (defined as cessation of menses or positive hormonal diagnosis), had at least one ovary, were asymptomatic. **Results**. Ovaries were more readily visualized when women were less than 5 years postmenopausal (78%), than when they were 10 years beyond menopause (64%), probably because of the progressive decrease in ovarian size. Of the 21 cases included in the study based on ultrasound appearance and / or elevated CA125, in 2 cases (8%) the cyst has completely disappeared, in 7 cases (35.28%) the cysts have decreased in diameter by more than 3 mm, in 4 cases (21 %) the cysts increased in size, and in 8 cases (45.19%) they remained the same size. **Conclusions.** Ovarian cysts is a surprisingly common condition in postmenopausal women .Such cysts are dynamic in character, in their vast majority changeable in size, between two successive evaluations. We have no proof that all cysts under study and observation were of benign type, but their involution and their very extinction is an element of positive diagnosis.

KEY WORDS *adnexal masses, menopausal status, transvaginal ultrasound examinations*

Introduction

Ovarian cancer, the leading cause of death among gynecological cancers is found in women aged over 50 in   more than 80% of cases the majority of which have epithelial origin.

Sonography technique, particularly the one that allows transvaginal approach can be used as a screening method, because its performance in helping the identification, detection and depiction of an adnexal cystic mass with an accuracy of 98.1 % for sensitivity, 80.8% for specificity, 40.9% for positive predictive value and an exceptional negative predictive value of 99.7% according to studies and research. [1,2].

In the past, any detection of adnexal cystic masses was considered abnormal and would result in routine surgery. But the results of several studies concluded that ovarian cysts, especially those smaller than 5 cm in diameter, are hardly malignant. [3]. Such cysts constitute an important source of false-positive results in any ovarian screening program.

Patients and method

In our study there were included 51 patients who met the following criteria 1) menopausal status, whether surgical or natural, for at least 1 year (defined as cessation of menses or positive hormonal diagnosis), 2) had at least one ovary, 3) were asymptomatic.

Results

The incidence of menopause divided by age group is presented in Table 1. Of these, we dealt with 16 patients who had unilateral oophorectomy history and 21 asymptomatic patients.

Table 1. The incidence of menopause by age groups

Menopausal STATUS	35-39 Years	40-49 Years	Over 50 Years	Total Of Cases
Surgically Induced Menopause	1	3	12	16
Physical Menopause	2	5	28	35

The classic postmenopausal ovary is a solid hypoechoic structure, measuring, as a rule, 2 cm in the longest diameter. Transabdominal examination resulted in identification of 41% (16 cases) of tumoral ovaries, while transvaginal sonography lead to the identification of 58% (21 cases). Ovarian visualisation was easier in women who hadn't undergone hysterectomiy - 76% (16 cases), as compared with those pacients who had underwent surgery - 24% (5 cases), when ovaries are in variable locations . Ovaries were more readily visualized when women were less than 5 years postmenopausal (78%),   than when they were 10 years beyond menopause (64%), probably because of the progressive decrease in ovarian size.

Transvaginal ultrasound examinations of the pelvis were scheduled on each women every 3

months for the first year in the study, and every 6 months in the second year.

Adnexal masses were categorized as *cystic* if they were unilocularor or if they had at most two thin, *complex* septations, if they presented more than two septations or contained solid elements, or *solid*.

Cysts classified as simple presented completely anecogen aspect, thin capsular, imperceptible wall and posterior shadow cone [Fig.1]. Blood flow was measured in a vessel tumor and uterine artery, the resistivity index being calculated. CA125 level has been determined in all patients with ovarian tumor mass.

Figure 1. Simple ovarian cyst, transvaginal approach: 6.45/5.77cm,thin-walled, ovarian tissue reduced in periphery, by cyst compression

Pacients were assigned to one of the three classes, according to the time elapsed since menopause:

- postmenopausal status for less than 5 years (60.5%),
- postmenopausal status for 5 to10 years (21.3%),
- postmenopausal status for more than 10 yers (18.26%).

Table 2. Ovarian tumor distribution according to menopausal status

menopausal STATUS	CASES	%
<5 years	12	**60.5**
5-10 years	5	**21.3**
>10 years	4	**18.2**

The maximum incidence occurs in the group of patients in menopausal status for less than 5 years, 60.5% (12 cases), as compared to 18.2% (4 cases) incidence in the group of patients with menopause for more than 10 years, directly related to hormonal instability characterizing climacterim.
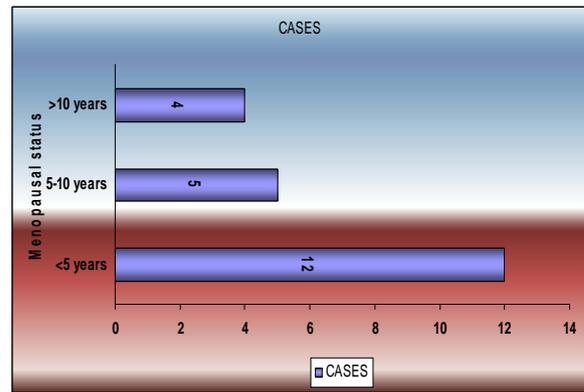

Diagram 1. Distribution of ovarian tumor according to menopausal status

In what concerns the size, at initial evaluation, the cysts ranged from 1 cm to 12 cm, with an average value of 4.7 cm.

Table 3. Tumor sizes in studied group

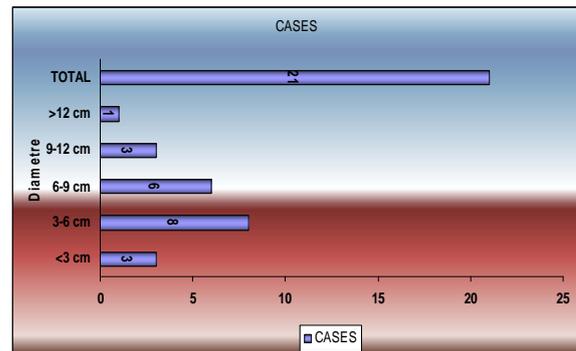| SIZES	CASES
<3 cm	3
3-6 cm	8
6-9 cm	6
9-12 cm	3
>12 cm	1
TOTAL	21

Diagram 2. Tumor sizes in the group under study

Ultrasound appearance of simple cysts was found in 14 patients, in 11 patients the cysts being unilaterally/bilarerally located. In 51% of cases of cystic formations were located in the right ovary, in 49% of cases they were to the left ovary.

Tumor artery resistivity index was normal (less than 0.7) in 19 cases, as we also found in the literature. [4].

Of the 21 cases included in the study based on ultrasound appearance and / or elevated CA125, in 2 cases (8%) the cyst has completely disappeared, in 7 cases (35.28%) the cysts have decreased in diameter by more than 3 mm, in 4 cases (21 %) the cysts increased in size, and in 8 cases (45.19%) they remained the same size.

We set the cut-off value of 3 cm in diameter when it came to the ultrasound follow-up versus surgery. Two patients opted for surgery for cysts under 3 cm, without ultrasound follow-up, but we mention in these patients CA125 values exceeding 35U/ml. 4 patients with simple adnexal cysts with sizes above the cut-off value (average value 4.9 cm), refused surgery, and in 2 cases the evaluation performed at 7 respectively 9 months after initial evaluation showed a regressive evolution, the cysts diameter nor requiring surgery. Ultrasound evaluation performed three months later found complete disappearance of the cysts in these pacients.

Table 4. Dimensional evolution of ovarian tumors

EvolutiON	%
Decrease in size	35.28%
Increase in size	21%
Extinction	8%
Constancy in size	45.19%

Of the 21 patients entered the study 12 were subjected to surgery, the piece obtained being subject to histo-pathological examination and in some cases to immunohistochemistry for reliability of the diagnosis.

A particular aspect is found in the case of patients with ovarian carcinoma stage IC, where the left ovary presented a simple cyst of 4.1 cm, and the right ovary appeared normal on a first evaluation. The third ultrasound evaluation (to 9 months after initial assessment) revealed a left adnexal mass, complex in aspect, and a diameter of 4.8 cm. The Doppler examination showed a low resistivity index (0.4), while the serum markers level was normal. The sequence borderline-carcinoma adenoma- tumor, depending on genetic factors, is likely to develop faster.

Thus, transition from cystic inclusion of the surface epithelium to carcinoma may occur in the absence of the benign and borderline proliferative phase or can hardly be anatomopathologically estimated [5]. The theory according to which malignant epithelial tumors may originate directly in ovarian surface epithelium (or inclusion cysts) without undergoing the benign or borderline stage is also supported now [6].

Conclusions

The visualisation of adnexal tumor masses in menopause must be supplemented by Doppler examination, so much the more that it is difficult to assess the condition of ovaries in older women, especially in patients that undervent hysterectomy.

Ovarian cysts is a surprisingly common condition in postmenopausal women [7].Such cysts are dynamic in character, in their vast majority changeable in size, between two successive evaluations. We have no proof that all cysts under study and observation were of benign type, but their involution and their very extinction is an element of positive diagnosis.

On the basis of our study as well as founded on recent literature review, we advise Doppler examination of the adnexal masses when these can be ultrasonographically visualized.

Sonographic follow-up is recomended where a simple adnexal cyst smaller than 3cm in diameter is identified in a postmenopausal woman. Surgical resection is usually recommended for larger cysts, that display complex aspect or change in the vascularization indexes.

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