Anatomo-clinical considerations on the ovarian fibroma

A. MANCUSO - M. GROSSO (*) - R. D'ANNA - V. PALMARA - R. LEONARDI

Summary: The Authors analysed from an anatomo-clinical point of view, 17 cases of ovarian fibroma, observed during the period between 1968 and 1992. The incidence of ovarian fibroma in this study was 2.52% and it affected women in different age groups, though with greater frequency those above 50 years.

Even the symptomatology was variable and was characterized by pain in the hypogastric quadrant (47.1%); alteration of the menstrual cycle (17.6%); metrorrhagic episodes (17.6%); sterility (5.9%). Due to the fact that the ovarian fibroma can appear at any age, this suggests different surgical approaches according to age, general conditions of the patient and fertility.

Key words: Ovarian fibroma.

INTRODUCTION

The ovarian fibroma is a relatively rare benign connectival tumor.

The first description in literature was made by Astruc in 1743 ([1]); other authors have discussed this pathology more recently, for example Peterson, who pointed out the association of the ovarian fibroma with ascites, and Meigs, who describe the classic symptomatic triad which includes ovarian fibroma, ascites and hydrothorax ([2]).

The incidence of this neoplasia ranges from 1.7 to 5% of all ovarian tumors ([3, 4]) even though there are authors who report higher incidence which varies from 5% to 7.1% ([5, 6]).

As to the origin of the ovarian fibroma, literature offers several histogenetic hypotheses: Potenko, for example, noticed the frequent presence in this neoplasia of vasal and perivasal sclerosis, and therefore stated that the genesis arose in the vessels of the hilus cells. This hypothesis was not confirmed for vasal and perivasal sclerosis and it was considered secondary to the chronic stasis due to the compact structure of the tumor and to poor vessel elasticity ([9]).

Other authors, between the end of the last century and the beginning of the present, have maintained that the origin was caused by inflammation, but this hypothesis did not receive much support, as in most cases the ovarian fibroma did not display characteristic inflammatory factors ([7, 8]). Other histogenetic theories are those of Rokitanski, who suggested a fibrous

Received 8-6-1994 from the
Chair of Gynecologic and Obstetric Pathology
(*) Human Pathology Department
University of Messina, Italy

Revised manuscript accepted for publication 8-10-1994.

corpum luteum origin ([10]); Novak, who thought the fibroma derived from an ovarian Brenner tumor ([11]) and Amin, who, on the basis of research with the electronic microscope, maintained a genesis similar to that of the tecoma ([12]).

The theory most accepted at present is the one proposed by Delle Piane and Selye who believe that the ovarian fibroma originates from an undifferentiated mesenchymal proliferation of the ovary, triggered by oncogenic stimuli of various kinds, even hormonal ([13, 14, 15]).

From a histologic point of view the ovarian fibroma is made up of connectival cells, collagenous fibres and sometimes smooth muscle fibres surrounded by interstitial matrix. In fibrous tissue the cellular component is usually well represented. Fibrocytes of various shapes and sizes are disposed in tightly bound bundles and present small fusiform nuclei. In some cases, the stroma is less tightly packed so that the connective cells seem to bathe in an abundant interstitial substance.

From a macroscopic point of view, the ovarian fibroma generally presents unique shape: spheroid, smooth or bumpy, of variable dimensions and of hard consistency, except for those cases in which the existence of degenerative phenomena can acquire entirely or partially a soft consistency.

The external surface seems smooth and shiny, of a whitish color, the transverse section is whitish-grey with sparse fibrous tissue.

At times, within the thickness of the neoplasia, it is possible to observe areas of colliquation which determine the appearance of pseudocystic cavities of various dimensions.

The neoplasia can involve both the gonads, but is very often monolateral and has no functional activity. It develops very slowly, only rarely reaching in adult and senile women, conspicuous dimensions ([1]); in adolescents, it may present a rapid growth and can often reach large dimensions ([16]).

The symptomatology is generally very poor. The signs, vague and inaccurate, are presented by a sense of weight in the lower abdominal quadrants which increases after an extended erect position.

In the case of peduncolated formations, secondary acute signs may appear if there is torsion of the peduncle. Very large fibromas may manifest mechanical problems due to compression, more frequently on the rectum and urinary apparatus.

In those subjects with ovarian fibroma, ascites and hydrothorax may appear. This association, which we have already mentioned, takes the name of the Meigs syndrome. In adolescents this ovarian neoplasia can present itself associated to the Gorlin syndrome, which is characterized by multiple basal cell skin nevi, skeletal abnormalities, of the nervous system and of the eyesight.

Due to the fact that the ovarian tumor manifests a limited incidence and that the bibliographical citations on the topic are rather remote in time, or limit themselves in most cases, to the description of single clinical cases, we have deemed it necessary to examine this pathologic problem on the basis of a number of cases which, in the circumstances, may be considered consistent.

CLINICAL CASE

Between the years 1968-69 and 1991-92, at the Institute of Gynecology of the University of Messina, we took in 17 cases of ovarian fibroma. The patients' ages ranged from 20 to 77 years, with an average of 52.2; in particular 3 of the patients (17.6%) were younger than 25 years old, 6 (35.3%) were between 37-49 years of age and 8 (47.1%) between 60-77.

Eight women were fertile (47.1%) and 9 (52.9%) had been in menopause for a period ranging between 4 and 29 years; 7 (41.2%) were nulliparous and 10 (58.8%) pluriparous with partiy between 2-6 (Table 1).

As to the clinical symptoms, we observed that 8 patients (47.1%) had localized pain of various types and intensity in the hypogastric

Table 1. – *Characteristics of the patients.*

Age	Between 20-70-years (mean age 52.2)
Fertile women	8 (47.1%)
Menopause	9 (52.9%)
Pluriparas (2-6)	10 (58.8%)
Nulliparas	7 (41.2%)

quadrant and sometimes lombosacral region (weight pain, of colic type, tension); in 2 cases it was associated with symptoms that involved the digestive and urinary tracts; 3 patients (17.6%) had menstrual abnormalities; 3 (17.6%) metrorrhagic episodes in menopause; 1 patient had presented herself to our attention for sterility problems and 2 patients had no symptoms and the presence of the pelvic mass was discovered during a routine clinical check-up (Table 2).

The size of the tumor varied: in 5 cases the diameter was over 10 cm, in 2 it was over 20 cm. In 8 patients (47.1%) the fibroma developed in the right ovary, in 6 cases (35.3%) in the left one, in 3 cases (17.6%) it was bilateral (Table 3).

In 2 patients (11.8%) ascites was present; the analysis of the fluid through paracentesis presented the characteristic transudate with absence of neoplastic cells.

In some subjects, in association with the ovarian fibroma, we observed other forms of gynecologic pathology. In particular we observed 3 cases of uterine fibromatosis (17.6%), 4 cases (23.5%) of pathology of the opposite ovary (1 endometrial cyst, 1 serous cyst, 2 cases of micropolycystosis). The urographic exam revealed 2 cases of ureteral compression (Table 4).

Table 2. – *Symptomatology.*

Hypogastric pain	8 (41.2%)
Menstrual disorders	3 (17.6%)
Metrorrhagia during menopause	3 (17.6%)
Sterility	1 (5.9%)
Absence of symptoms	2 (11.8%)

Table 3. – *Site of ovarian fibromas.*

Right ovary	8 (47.1%)
Left ovary	6 (35.3%)
Bilateral	3 (17.6%)

As to the therapeutic aspect, 9 patients (52.9%) underwent total hysterectomy with bilateral salpingo-oophorectomy, 1 (5.9%) underwent total hysterectomy with preservation of one ovary, 2 patients (11.8%) underwent bilateral surgical removal of the adnexa, 3 (17.6%), had monolateral removal of the uterine appendages and finally in 2 cases (11.8%) the neoplasia was enucleated (Table 5).

Table 4. – *Associate gynecologic pathology.*

Uterine fibromatosis	3 (17.6%)
Endometriosic cyst	1 (5.9%)
Serous cyst	1 (5.9%)
PCO	2 (11.8%)

Table 5. – *Therapy.*

TAH+SOB	9 (52.9%)
TAH+SOM	1 (5.9%)
Bilateral adnexectomy	2 (11.8%)
Monolateral adnexectomy	3 (17.6%)
Simple miomectomy	2 (11.8%)

In three cases surgery revealed technical problems because of the presence of adherences between the pelvic tumor and the abdominal organs.

The anatomopathologic exam confirmed the macroscopic diagnosis; in 8 cases the ovarian fibroma showed regressive phenomena (more pronounced in 6 cases); two fibromas had high cellular density that did not, however, match mitoses.

In most patients the fibroma had completely changed the ovarian structure; in only three women the gonadal tissues remained in part unaltered (in 2 cases the fibroma was small, in 1 case pedunculated). The neoformation had an irregular shape in 6 cases, while in the others its aspect was regular. In 11 cases the tumor had a completely solid structure with a hard consistency. In 4 cases it had alternative solid and cystic zones in relation to the existence of regressive phenomena. In 2 cases the consistency was soft because of the predominence of pseudocystic cavities.

DISCUSSION

Some details observed during our investigation offer us the possibility of making a few considerations.

The ovarian fibroma had among the ovarian neoplasias an incidence of 2.52%. Our data agree with those of various authors [3, 4] but are lower than those reported by literature in the '70s which attributed an incidence of over 5% to this neoplasia [5, 6]. This induced various researchers to believe this increase to be due to the improved diagnostic and histopathologic techniques.

It is our opinion that the improved diagnostic technqiues have rendered possible an easier and earlier diagnosis of the ovarian neoformations.

However, it is possible that the lower frequency of the ovarian fibroma may be due to the higher number of patients having undergone demolitive surgery on the reproductive apparatus at an earlier age, and previous to the appearance of this neoplasia.

This assertion can be further confirmed by the fact that in the second decade considered in this study, the incidence of the neoplasia is lower in respect to the first (2.1% vs 3.1%).

The ovarian fibroma is more frequent in the age range over 50 years (47%) however, and we should like to point out that, due to its slow development and its slight symptomatology, it is possible that diagnosis is delayed to a later period than when it first appears.

It has not been possible to reveal any relationship with parity since nulliparous and pluriparous women were present in our study in almost equal numbers. However, in this respect, opinion in literature is not uniform: in fact some authors maintain that this tumor prevails in nulliparous [18], others in pluriparous [19], women.

From a symptomatologic point of view, the ovarian fibroma did not present any special aspects the most frequent symptom was represented by pain associated to the dimension or its development, to abdominal tension with digestive and urinary trouble.

It is well to point out how difficult it is in some circumstances to distinguish the origin of the symptoms, especially when other abdomino-pelvic organs are involved.

The presence of ascites has been evaluated in literature as between 10-39% [1, 20].

In our study it was present in only two patients (11.8%). These cases analyzed in detail, did not present analogies.

The results of our study, therefore, seem to differ from those theories which connect the appearance of ascites fluid with plasma secretion from the vessels and from the peduncle of the pelvic tumefaction secondary to phenomena of stasis due to torsion and/or compression.

We may sustain, as Meigs did, in a study subsequent to the one in which he described the syndrome, that the presence of ascites in some patients is connected to reactive phenomena of the peritoneal serosa under the stimulus of the tumoral mass, or of its tendency to form adherences.

In none of the cases examined, was hydrothorax observable, thus confirming that the triad described by Meigs is rather rare.

As to the site of the ovarian fibroma, in our study we noticed a slight predominance of cases in the right gonad; as has already been observed in literature, there is no preference regarding the gonad.

As to the incidence of bilateral forms, of which we had only 3 cases in our study, there is no agreement in literature. In fact there are authors who report bilateral fibromas as a rarity [18, 21], and others who sustain that the involvement of both gonads is fairly frequent [4].

Our data agree with the latter, because our incidence was almost double the traditional one for this type of ovarian neoplasia [1].

One important aspect is that the bilateral forms are present in every age group creating problems as to therapy.

The last point regards the therapy of the ovarian fibroma. Considering its benign nature the treatment is individualized, depending on the age of the patient and the anatomic situation of the reproductive apparatus. Taking into account that the mean age in which it manifests itself is 50, and that there is a certain bilateral incidence, the surgical removal of the uterus and of the adnexa is advisable.

There are two categories of patients to be excluded from this kind of therapy. First, those patients of a certain age who may present a complex surgical situation due to adherences or who have clinical conditions that do not allow long surgery. In these cases it is preferable to choose a salpingo-oophorectomy.

In the second category are those young patients whose fertility must be guaranteed. In this case too it is important to limit surgery as much as possible (after having examined the opposite ovary) by simply enucleating the tumor or effecting a monolateral salpingo-oophorectomy.

REFERENCES

1) Grosieux P.: "Le fibromes de l'ovaire". *Rev. Franc. Gynec.,* 1970, *65,* 95.
2) Meigs J. V.: "Fibroma of the ovario associated with ascites and hydrothorax. New syndrome". Thomas Ed. Springfield, 1940.
3) Barzilai G.: "Atlante dei tumori dell'ovaio". Maccari Ed., Parma, 1949.
4) Bompiani A., Remotti G.: "Trattato italiano di ginecologia". Cap. LIV. Ed. P.E.M.. Roma, 1968.
5) Reitano C., Lanza G.: "Trattato di anatomia patologica". Piccin Ed., Padova, 1969.
6) D'Aquino S., Pullé C., Rigano A.: "L'ovaio, struttura e funzione, patologia e clinica dei tumori". Tipolito Zona Ed., Messina, 1973.
7) Peasler E. P.: "Ovarian tumors". New York, 1872.
8) Kroemer: "Die Stromatogenen Neubildungen". J. Veit's Handbuck Gynak, Bergmann, 1908.
9) Potenko W. W.: Z. Akus, 1906, *8,* 12.
10) Rokitansky: "Lebzbuch". *Path. Anat.,* Wicn Braumuller, 1861.
11) Novak E. R., Woodruff J. D.: "Gynecologic and obstetric pathology". W. B. Saunders Co. Philadelphia, 1967.
12) Amin H. K., Okagaki T., Richarti R. M.: "Classification of fibroma and tecoma of the ovary. An ultrastructural study". *Cancer,* 1975, *27,* 438.
13) Delle Piane G.: "Sulla istogenesi di particolari tipi di fibroma dell'ovaio". *Rass. Med. Sarda,* 1939. *39,* 327.
14) Selye H.: "Ovarian tumors". Enc. of Endocrin. Section IV Richardson, Bond and Wright. Montreal, 1946.
15) Prat J., Scully R. E.: "Cellular fibromas and fibrosarcomas of the ovary: a comparative study clinicopathologic analysis of seventeen cases". *Cancer,* 1981, *47,* 2663.
16) Gilardo G., Giannone E., Pomili G., Baldoni A.: *Giorn. It. Ost. Gin.,* 1986, *5,* 403.
17) Burket R. L., Rauh J. L.: "Porlin Syndrome: ovarian fibromas at adolescence". *Obst. Gyn.,* 1976, *47,* 435.
18) Gatti M. G.: "Sui fibromi dell'ovaio". *Ann. Ost. Gin.,* 1943, *5,* 327.
19) Quinto P.: "Contributo allo studio dei fibromi dell'ovaio". *Riv. It. Gin.,* 1943, *26,* 202.
20) Arrotta U., Fagnani M., Sideri L.: "Un caso di fibroma ovarico. Clinica ed anatomia patologica". *Min. Gin.,* 1975, *27,* 889.
21) Luisi M.: "Il fibroma ovarico considerato specialmente dal punto di vista della funzionalità". *Riv. It. Gin.,* 1939, *22,* 557.

Address reprint requests to:
A. MANCUSO
Gynecologic and Obstetric Pathology
University of Messina
98100 Messina (Italy)