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MANAGEMENT OF BORDERLINE OVARIAN TUMORS

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ABSTRACT

Borderline ovarian tumors represent 15 to 20% of ovarian tumors and affect young women for whom fertility preservation is an important therapeutic challenge. Radiological and biological examination oriented preoperative diagnosis. However, surgical exploration and histological examination make the diagnostic. The treatment for the early stages should be as conservative as possible for young patients. This is a retrospective study of 22 observations diagnosed and treated at the department of Gynecology and Obstetrics 1 of University Hospital Hassan II in Fes over a period of 8 years. The average age of our patients was 39 years, 50% were nulliparous. 95,5% of our patient complain about abdominal pelvic pain and 45.5% of patients have an increase abdominal volume. 73% of patients had clinically palpable pelvic tumors. Pregnancy was the circumstance of discovery in tow patients. The supra-pubic pelvic ultrasound was performed in all our patients. The average size of the masse is 114mm. Histological Study Shows borderlineserous tumor in 63,6%, and mucinous tumors in 27,3%. 45 % of our patients underwent conservative surgery, and 55% patients underwent radical surgery. Three patients had regular follow-up in oncology with a favorable evolution. Tow patients received adjuvant chemotherapy for the presence of invasive peritoneal implants. Eleven patients received regular follow the gynecology department with a favorable evolution. One of patients, who benefited from a conservative treatment spontaneously fell pregnant after primary infertility of 7 years. Seven patients had loosed from regular surveillance. Borderline ovarian tumors usually occur in young patients. The clinical presentation, the prognosis and the treatment are different from ovarian adenocarcinomas. They are often diagnosed at stage I of the FIGO classification. Their prognosis is excellent with a survival rate after 5 year of 95%.

Keyword : borderline ovarian tumors, giagnosis, conservative treatment, follow-up.

1. INTRODUCTION

Borderline tumors of the ovary (OBT) account for 15 to 20% of ovarian tumors and concern young women for whom the preservation of fertility is a major therapeutic issue. This group of tumors has been recognized by the International Federation of Gynecology and of Obstetrics (FIGO) in 1961 and adopted by the World Health Organization (WHO) in 1973. (2)

The definition of borderline tumors of the ovary is pathological (3). Preoperative, non-specific diagnosis is based on radiological and biological criteria. Surgical exploration and histopathological examination allow the diagnosis.

Interest in these epithelial tumors is justified by their age of onset, which is usually ten years earlier than invasive ovarian tumors, their relative frequency and their prognosis which is much better. (2)

2. MATERIALS AND METHODS

This is a descriptive retrospective study over a period of eight years.

It was established on the basis of twenty-two observations of patients treated in the Department of Gynecology and Obstetrics I of Hassan II CHU in Fez.

On our observations it was stated:

- ❖ The epidemiological profile of patients by describing their ages, parity and gynecological obstetric history.

- ❖ The circumstances of discovery
- ❖ Clinical parameters
- ❖ The various investigations carried out: radiological and biological
- ❖ Treatment initiated (conservative or radical)
- ❖ The anatomopathological aspect
- ❖ Monitoring and evolution of patients

The objectives of our study are:

- ❖ To expose the experience of the Gynecology and Obstetrics 1 department in the management of borderline ovarian tumors
- ❖ Focus on the difficulties of clinical, para-clinical, histological and therapeutic diagnosis of this type of tumor.
- ❖ And establish a therapeutic protocol according to the data of the literature.

3. RESULTS

The age of our patients is between 18 and 76 years old. The average age is 39 years with a peak frequency between 30 and 40 years. Dix of our patients were nulliparous (45%) of which three were nulligestes. Five of our patients were multiparous (23%). Seven patients were pauciparous (32%)

None of our patients had a family history of ovarian or colon cancer.

One patient had ovariectomy for ovarian tumor of undetermined nature, 15 years before her current symptomatology.

The consultation time of our patients was on average 10 months. The fortuitous finding was the circumstance of discovery in only two patients in our series. Eleven patients had isolated pelvic pain at 50%. Six patients (86%) had abdominopelvic pain associated with other symptoms. The increase in abdominal volume was described in 9/22 cases, an overall rate of 41%. A single patient had metrorrhagia. A patient had a constipation-type gastrointestinal sign six months after the onset of the initial symptomatology that was pelvic pain. No patient had a notion of associated urinary signs. Two patients had a notion of weight loss quantified

In our series, Pregnancy was the circumstance of discovery in two patients: The ovarian mass was fortuitously discovered during perioperative exploration at the time of caesarean section in the first. And in the second patient with an excessive increase of the abdominal volume during the first pregnancy and during recurrence during the second pregnancy (she initially benefited from a cystectomy and the recurrence was in the interval of 1 year). Only one patient had acute pelvic pain (twenty days) related to a torsion of the appendix.

Fourteen patients had clinically palpable pelvic tumors (63.6%), three of which were large.

The size of the palpated masses varied between 7 cm and 30 cm with a mean size of 14.7 cm. Masses difficult to objectify clinically in 6 patients, ie 27.3% (three patients had ascites of medium to large abundance)

The criteria of malignancy found are the ascites of great abundance found in three patients or 13.6% and the hard consistency found in four patients. One patient had a fixed mass in relation to the deep plane. No patient had a clinically bilateral mass

Suprapubic pelvic ultrasound was performed in 21 patients. It allowed to link the pelvic mass to its adnexal origin in 15 (68%) of our patients. The size of the masses was specified in eight patients, with an average size of 7.93 mm; variable between 40 mm and 180 mm. In six cases, the size was not specified because the masses exceeded the screen (enormous masses arriving in umbilical or even at the xyphoid level). CT was performed in eleven patients. The six patients with large masses difficult to characterize on ultrasound all benefited from CT. It allowed to specify the size of the masses (varying between 100mm and 300mm) and to specify the reports of the mass with the neighboring structures. Three of our patients received pelvic MRI. The three were performed for the purpose of characterization of the mass: one during her pregnancy which was 26 SA, the second for a mass of tissue aspect on ultrasound, and the other having a large mass of 16 cm. It was suggestive of malignancy in a single patient. Two patients underwent initial laparoscopic exploration with the intraoperative decision to convert to laparotomy. The need for laparoconversion was judged by the difficult handling of the cyst because of these multiple adhesions in one patient and the difficulty of operation and the accidental rupture of the cyst with the result of a mucinous thick fluid in the 2nd patient. The other twenty patients benefited from an exploratory laparotomy from the start. Seventeen tumors (77.2%) were classified as stage I (Eleven class Ia, three class Ib (bilateral), three class Ic. One tumor was class IIa stage IIa Four stage III tumors. No tumor was classified as Stage IV. Eleven patients underwent an extemporaneous examination during the surgical procedure, ie 54.5%. The extemporaneous examination made it possible to specify the borderline character in all the patients.

Eight patients underwent conservative treatment: Ovariectomy + multiple biopsies in one patient. One-sidedectomy + multiple biopsies in seven patients. Six of these patients who received conservative treatment were nulligestes. The other two were pauciparous and desiring subsequent pregnancies. Their ages were under 40; between 18 and 38 years old. Fourteen patients underwent radical treatment surgical treatment consisted of total hysterectomy + bilateral adnexectomy + infra-colonic omentectomy + peritoneal biopsies

Complementary appendicectomy was performed in four patients with a mucinous component. Two patients benefited from an iliac dissection supplement: In two operative stages, in one patient: after definitive anatomopathological result which showed a serous borderline tumor with presence of microinvasion center of grade I of silverberg. And in one operation time in the 2nd patient: considering the macroscopically suspect aspect to the surgical exploration.

Fourteen patients had a serous-type borderline tumor. Six patients had mucinous borderline tumors none of which had an intraepithelial carcinoma component.

One patient had a bilateral mixed borderline tumor. One patient had an endometrioid borderline tumor. Peritoneal biopsies were performed in all our patients

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Two patients were proposed for chemotherapy on the basis of a definitive pathological examination in favor of a borderline serous tumor of the ovary with presence of invasive peritoneal implants. They received six courses of chemotherapy based on Carboplatin and Paclitaxel. None of our patients received radiotherapy.

Two patients underwent regular monitoring in oncology for the presence of micro papillary component, and two others after initiation of adjuvant chemotherapy. Regular monitoring, after chemotherapy, clinical, radiological (CT TAP) and tumor markers (Ca125) every 3 months was established: A good evolution was observed.

Twelve patients underwent follow-up in the gynecology department with a favorable evolution, of which one patient, having benefited from a conservative treatment, became spontaneously pregnant after a primary sterility of 7 years. Adherence to follow-up was partial. The other seven patients were lost to follow-up.

4. DISCUSSION

TBOs are defined by WHO as a category of intermediate tumors between morphologically benign lesions and those that are obviously malignant.

They are histologically distinguished (3) from malignant tumors by the absence of infiltration of the ovarian stroma by the tumor cells. And they are distinguished from benign tumors by the possession of one or all of the following histological characters: epithelial budding, multiple stratification, and significant mitotic activity with nuclear atypias.

Three terms are currently used to refer to these tumors: borderline tumor, tumor with low malignancy potential, and atypical proliferation tumor.

They account for about 15% to 20% of all ovarian epithelial tumors with an incidence of 1.8 to 4.8 per 100,000 women per year (4).

Patients with borderline ovarian tumors are usually ten years younger than women with epithelial ovarian cancer (45 versus 55) In a French retrospective study comparing the epidemiological factors of serous and mucinous TBO, they reported that the rates of incidental discovery were respectively 21.1% and 13.9%. The fortuitous finding was the circumstance of discovery in only two patients in our series. The consultation time for all histological types combined was 10 months. Abdominal signs (pain, discomfort, over-distension or tension) are the most common sign of call, which can reach up to 80% (7) In our series it is the main circumstance of discovery that it is isolated. An increase in abdominal volume is present in 13 to 26.2% of cases. (1,8). Meno-metrorrhagia is observed in 3.7 to 13% of patients according to series. (6,8) Pregnancy is a circumstance of discovery in 2% of cases (8) It does not seem to either promote the occurrence of OBT or worsen the prognosis; however, the therapeutic implications can be tricky.

Although not very specific, clinical examination remains crucial in the case of ovarian tumors. Clinically, borderline ovarian tumors have a non-specific symptomatology that remains common to all ovarian tumors, however the presence of a fairly large pelvic mass often silent in a relatively young and often healthy woman should attract the attention to this category of tumor. TBOs usually have a large volume. Gokcu et al. (5) report in their series an average diameter of 11.2 cm (5mm to 34cm).

The benign, borderline or malignant differentiation of an injury is fundamental. A borderline or benign lesion in a young woman should anticipate the possibilities of preservation of ovarian function before any surgical procedure.

To achieve this condition, the clinical study will necessarily call for imaging, and lead ultrasound for diagnostic purpose, CT for possible extension assessment and MRI for tumors difficult to characterize by ultrasound. ultrasound.

As part of TBO, Valentin et al. demonstrated that tumors remaining undetermined after ultrasound performed by an experienced operator were largely represented by border tumors (10). However, the correct classification of TBOs in terms of specific diagnosis based on ultrasound images is difficult Border epithelial ovarian tumors are single- or multilocular cystic tumors typically presenting vascularized endocystic vegetations with often a crescent of residual healthy ovarian parenchyma. (9)

It seems that CT and MRI are more efficient for looking for pejorative signs, such as: The presence of peritoneal implants, the invasion of the abdominal-pelvic wall, the presence of lymphadenopathies, and the exploration of large lesions incompletely studied by abdominal ultrasonography (2). In the presence of a complex or indeterminate adnexal lesion, a recent meta-analysis has demonstrated the value of pelvic MRI to optimize the characterization of these ovarian tumors (18).

The interest of the determination of tumor markers in the diagnosis of borderline ovarian tumors is not demonstrated. The main marker used is the CA 125 although its elevation remains inconstant.

The majority of patients with OBT are young women. For this type of patient, therapeutic decisions in terms of preservation of fertility as a major issue, treatment of infertility or early ovarian failure, per and postoperative morbidity, and indication of adjuvant chemotherapy will be decisions that are as relevant and delicate as legitimate.

Conservative or radical, surgery is the gold standard in the therapeutic PEC of TBO. It must allow a diagnostic confirmation of the adnexal mass (with the help of the need for extemporaneous histological examination), a staging of the disease and the achievement of a treatment adapted to the intraoperative findings when it is justifiable.

We distinguish 3 times in the surgical act: (12) Careful exploration of the entire peritoneal cavity, performing intraoperative extemporaneous examination when the tumor is macroscopically suspect and performing a surgical extension assessment: called "staging surgery" "

Being the essential first pathway for benign presumed tumors, the benefit of laparoscopy in terms of OBT surgery is widely debated. The risks associated with laparoscopy are (13,14): cyst rupture, insufficient staging and possibly the tumor residue in case of cystectomy. In addition, it remains a feasible and safe approach. The sensitivity and specificity of the extemporaneous examination are better for benign and malignant tumors (94% and 98% respectively) than for borderline ovarian tumors that do not exceed 70%. (11) Pelvic and lumbar-aortic dissection is a subject of debate. Currently it is indicated only in TBO-S with micropapillary component and in advanced stages of the disease (16,17) The majority of studies agree that adjuvant therapy (chemotherapy or radiotherapy) does not improve patient survival in borderline ovarian tumors (18). However, it is proposed for peritoneal invasion in the majority of specialized centers and should be discussed on a case-by-case basis. (15)

5. CONCLUSION

TBOs mostly affect young women. The majority of them are diagnosed at an early stage (stage I). The prognosis is excellent and the overall survival rate of OBT is much higher compared with ovarian carcinomas. Choosing the right treatment for each patient is a big challenge for the practitioner. The use of conservative treatment is recommended for young women who have not completed their desire for procreation and who are complicit in close and regular supervision. the preservation of fertility in OBTs is expanding as the number of pregnancies contracted in patients undergoing OBT with a low risk of recurrence. However, each case must be analyzed by a multidisciplinary team.

REFERENCES

- [1] Fauvet R, Demblocque É, Morice P, Querleu D, Gondry J, Daraï É. Comparaison des facteurs épidémiologiques des tumeurs frontières séreuses et mucineuses de l'ovaire : implications thérapeutiques. *Bull Cancer (Paris)*. mai 2012;99(5):551-6.
- [2] Tulpin L, Rouzier R, Morel O, Malartic C, Daraï E, Barranger E. Tumeurs borderline de l'ovaire : état des lieux. *Gynécologie Obstétrique Fertil*. avr 2008;36(4):422-9.
- [3] Taïeb S, Fauquet I, Narducci F, Baranzelli M-C, Leblanc É, Ceugnart L. Tumeurs borderline de l'ovaire. *Imag Femme*. févr 2009;19(1):21-7.
- [4] Skírnisdóttir I, Garmo H, Wilander E, Holmberg L. Borderline ovarian tumors in Sweden 1960–2005: Trends in incidence and age at diagnosis compared to ovarian cancer. *Int J Cancer*. 15 oct 2008;123(8):1897-901.
- [5] Gokcu M, Gungorduk K, Aşıcıoğlu O, Çetinkaya N, Güngör T, Pakay G, et al. Borderline ovarian tumors: clinical characteristics, management, and outcomes - a multicenter study. *J Ovarian Res*. 1 déc 2016;9(1):66.
- [6] Cibula D, Gompel A, Mueck AO, La Vecchia C, Hannaford PC, Skouby SO, et al. Hormonal contraception and risk of cancer. *Hum Reprod Update*. 1 nov 2010;16(6):631-50.
- [7] Morotti M, Menada MV, Gillott DJ, Venturini PL, Ferrero S. The preoperative diagnosis of borderline ovarian tumors: a review of current literature. *Arch Gynecol Obstet*. 1 avr 2012;285(4):1103-12.
- [8] Bonnamy L, Fignon A, Fetissof F, Berger C, Body G, Lansac J. Tumeurs borderline de l'ovaire. [Httpwwwem-Premiumcomscd-Rproxyu-Strasbgfrdatarevues0368231500300003272](http://www.em-premium.com.scd-rproxy-u-strasbg.fr/article/114183/resultatrecherche/1) [Internet]. 8 mars 2008 [cité 16 mai 2017]; Disponible sur: <http://www.em-premium.com.scd-rproxy.u-strasbg.fr/article/114183/resultatrecherche/1>
- [9] Bazot M, Cortez A, Daraï É, Froment-Leonetti V, Nassar-Slaba J, Haouy D, et al. Imagerie des tumeurs ovariennes épithéliales frontières. *Imag Femme*. mars 2012;22(1):4-11.
- [10] Valentin L, Ameye L, Jurkovic D, Metzger U, Lécuru F, Van Huffel S, et al. Which extrauterine pelvic masses are difficult to correctly classify as benign or malignant on the basis of ultrasound findings and is there a way of making a correct diagnosis? *Ultrasound Obstet Gynecol*. 1 avr 2006;27(4):438-44.
- [11] Seong SJ, Kim DH, Kim MK, Song T. Controversies in borderline ovarian tumors. *J Gynecol Oncol*. oct 2015;26(4):343.
- [12] Uzan* C, Gouy S, Balleyguier C, Zareski É, Lhomme C, Pautier P, et al. Tumeurs borderline de l'ovaire. [Httpwwwem-Premiumcomscd-Rproxyu-Strasbgfrdatarevues116319610019000137](http://www.em-premium.com.scd-rproxy-u-strasbgfrdatarevues116319610019000137) [Internet]. 10 mars 2009 [cité 13 mai 2017]; Disponible sur: <http://www.em-premium.com.scd-rproxy.u-strasbg.fr/article/203449#N1004B>
- [13] Daraï E, Tulpin L, Prugnotte H, Cortez A, Dubernard G. Laparoscopic restaging of borderline ovarian tumors. *Surg Endosc*. 1 nov 2007;21(11):2039-43.
- [14] Camatte S, Morice P, Thoury A, Fourchotte V, Pautier P, Lhomme C, et al. Impact of surgical staging in patients with macroscopic « stage I » ovarian borderline tumours: analysis of a continuous series of 101 cases. *Eur J Cancer*. août 2004;40(12):1842-9.

- [15] Chen X, Fang C, Zhu T, Zhang P, Yu A, Wang S. Identification of factors that impact recurrence in patients with borderline ovarian tumors. *J Ovarian Res* [Internet]. 2017 [cité 3 mai 2017];10. Disponible sur: <https://www.ncbi.nlm.nih.gov/scd-rproxy.u-strasbg.fr/pmc/articles/PMC5379723/>
- [16] Ahmed ASM, Lawton FG. Borderline ovarian tumours: Current concepts and management. *Rev Gynaecol Pract*. sept 2005;5(3):139-51.
- [17] Burger CW, Prinssen HM, Baak JPA, Wagenaar N, Kenemans P. The management of borderline epithelial tumors of the ovary. *Int J Gynecol Cancer*. 7 mai 2000;10(3):181-97.
- [18] Faluyi O, Mackean M, Gourley C, Bryant A, Dickinson HO. Interventions for the treatment of borderline ovarian tumours. *Cochrane Database Syst Rev*. 2010;(9):CD007696.