International Journal of Academic Health and Medical Research (IJAHMR)
ISSN: 2643-9824
Vol. 6 Issue 2, February - 2022, Pages:43-53

Borderline Ovarian Tumors about 14 Cases

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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. 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 14 observations diagnosed and treated at the Gynecology and Obstetrics Service I of University Hospital Hassan II in Fez. -The average age of our patients was 33 years, 62% were nulliparous. -All our patient complain about abdominal pelvic pain. 38.5% of patientshave an increase abdominal volume. -82% of patients had clinically palpable pelvic tumors. -Pregnancy was the circumstance of discovery in one patient. - The suprapubic pelvic ultrasound was performed in all our patients. Theaverage size of the masse is 83mm. -Histological Study Shows borderline serous tumor in 62%, and mucinoustumors in22%. - 57 % patients underwent conservative surgery, and 43% patients underwent radical surgery. - 2 patients had regular follow-up in oncology with a favorable evolution. - one patient received adjuvant chemotherapy for the presence of invasive peritoneal implants. - 6 patients received regular follow the gynecology department with a favorable evolution. One patient, who benefited from a conservative treatment spontaneously fell pregnant after primary infertility of 7 years.*

Keysword: Borderline ovarian tumors, Diagnosis, Treatment

Introduction:

Borderline tumors of the ovary represent 15 to 20% of ovarian tumors and concern young women for whom fertility preservation is an important therapeutic issue.

This group of tumors was recognized by the International Federation of Gynecology and Obstetrics (FIGO) in 1961 and adopted by the World Health Organization (WHO) in 1973 (1).

The definition of borderline tumors of the ovary is anatomopathological.

Borderline tumors of the ovary are defined by the World Health Organization (WHO) as a category of tumors intermediate between morphologically benign and malignant lesions.

They are distinguished histologically (1) from malignant tumors by the absence of infiltration of the ovarian stroma by tumor cells.

They are also distinguished from benign tumors by the presence of one or all of the following histological features: epithelial proliferation, multi-stratification, and significant mitotic activity with nuclear atypia.

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

Table 1: Carcinogenesis of borderline ovary tumors and genomic alteration

BTO	Precursor	Progression to an invasive tumor	cytogenetic
Serous	Cystadenoma	Progression to a low-grade serous tumor	mutations in KRAS or BRAF
mucinous	Cystadenoma (precursor to intestinal mucinous TBO) Endométriosis, Endométriosic cysts (endométriomas); precursor of mucinous BTO)	Progression to intraepithelial carcinoma and then to mucinous carcinoma.	Mutations in the KRAS gene (codons 12 and 13)

Endometrioid	**Endometriosis,** **Endometriotic cysts (endometriomas) or endometrioid adenofibromas**	**Progression to intraepithelial carcinoma and then to low grade endometrioid carcinoma.**	**Mutations in the ß-Catenin gene; PTEN or LOH mutation;** **instability of microsatellites**
Clear cell	**Endometriosis,** **Endometriotic cysts (endometriomas) or clear cell adenofibromas**	**Progression to intraepithelial carcinoma and then to clear cell carcinoma.**	**Mutations in the ß-catenin gene; PTEN or LOH mutation;** **instability of microsatellites**
Brenner	**Benign Brenner's tumor**	**Progression to malignant Brenner's tumor**	**Not yet identified**

Clinical cases :

Our study is a retrospective review of 14 observations of borderline ovarian tumors diagnosed and treated at the Department of Gynecology and Obstetrics I of Hassan II University Hospital of Fez over a period of 6 years.

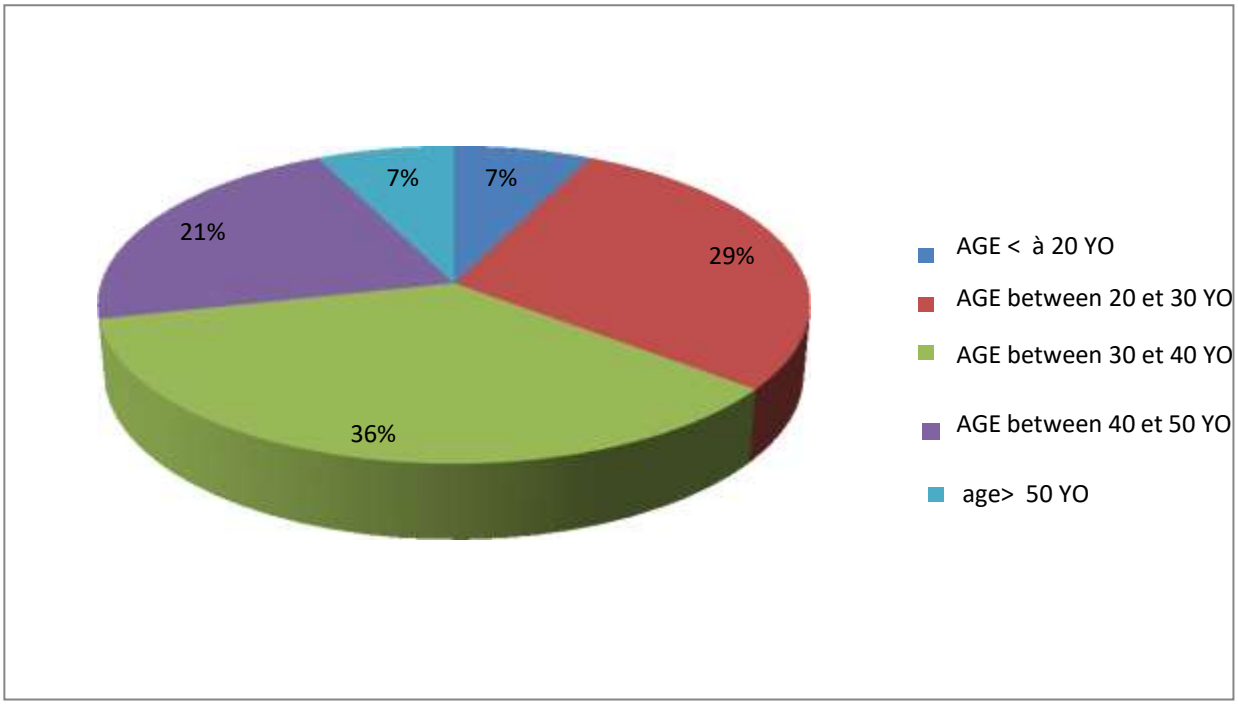

Diagram 1: Distribution of patients by age group

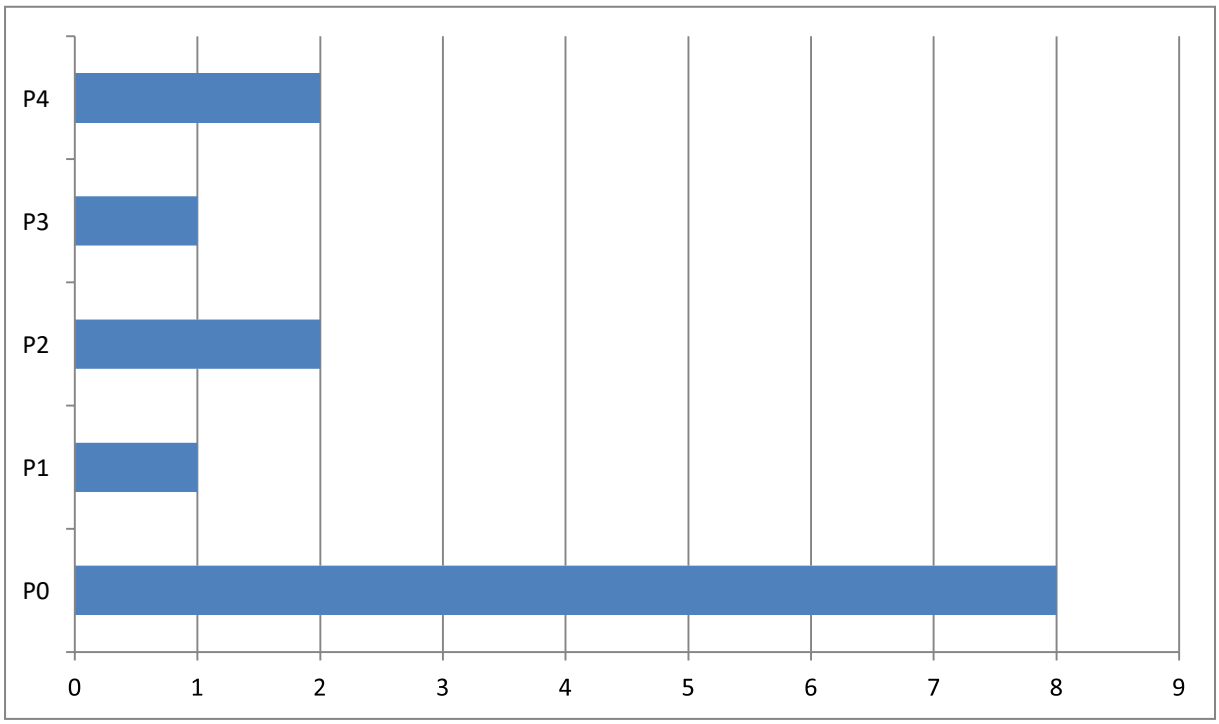

Diagram 2: Distribution of patients by parity

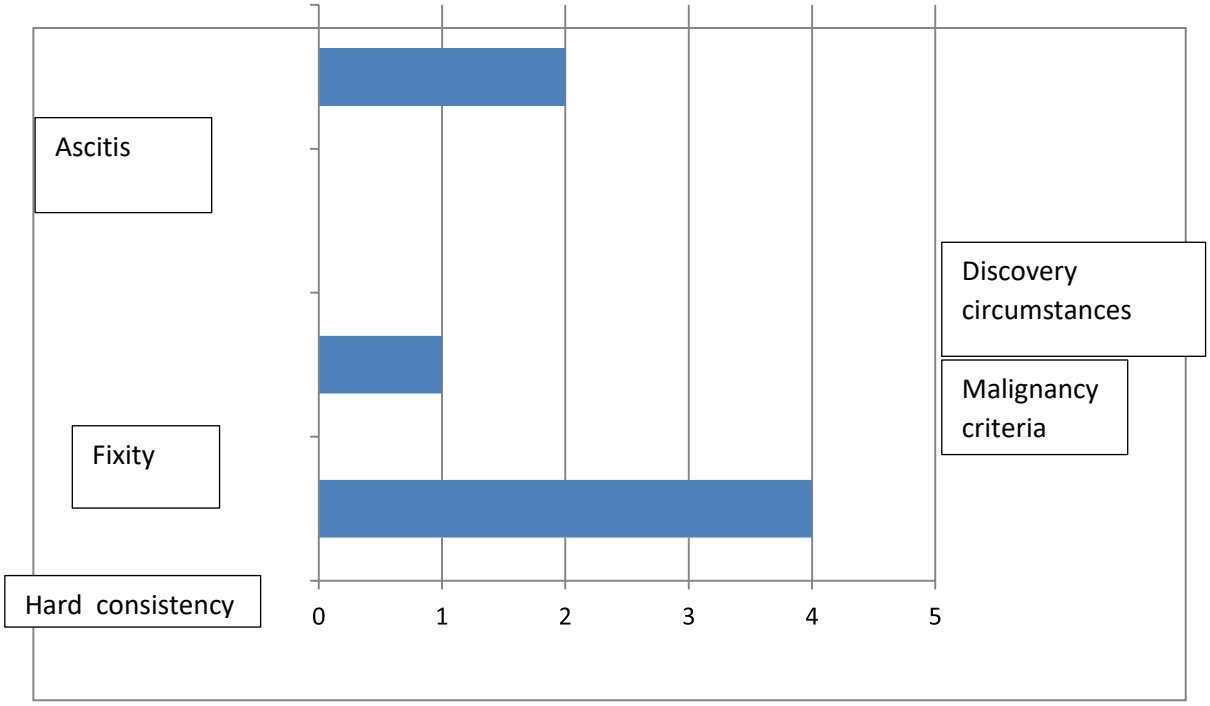

Diagram 3: Malignancy criteria on clinical examination

Malignancy criteria on ultrasound	Numbre of patients
Thickened walls	**3**
Vegetation	**5**
Bilateral localisation	**1**
Calcification	**1**
Multilocular	**2**
Peritoneal effusion -great abundance - low abundance	**6** (4) (2)

Table 2: Ultrasound malignancy criteria in our study

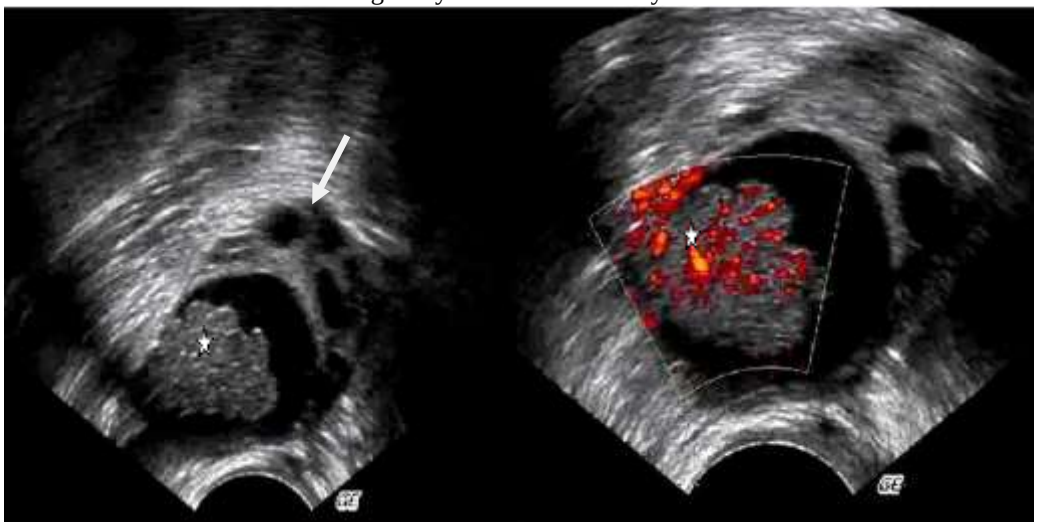

Figure 1: Endovaginal ultrasound showing a cystic lesion in the ovary with a crescent sign (white arrow) and containing vascularized vegetation on Doppler (star)

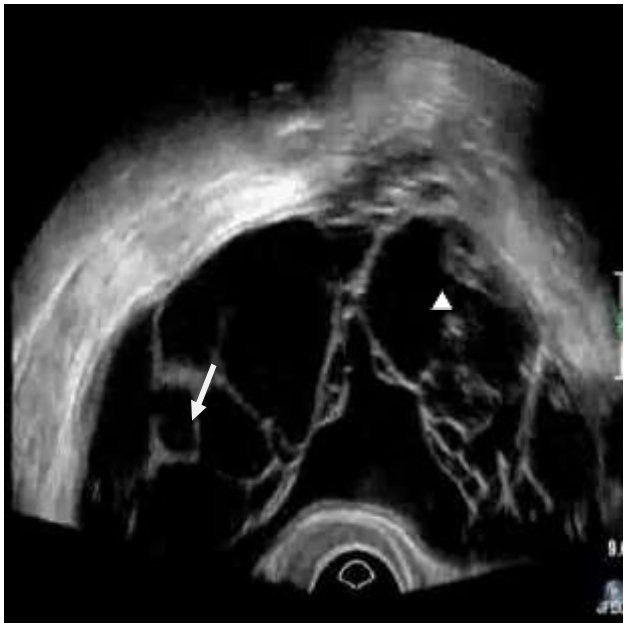

Figure 2: Endovaginal ultrasound showing a multilocular ovarian cystic lesion containing several partitions (white arrow) and some vegetations (arrowhead)

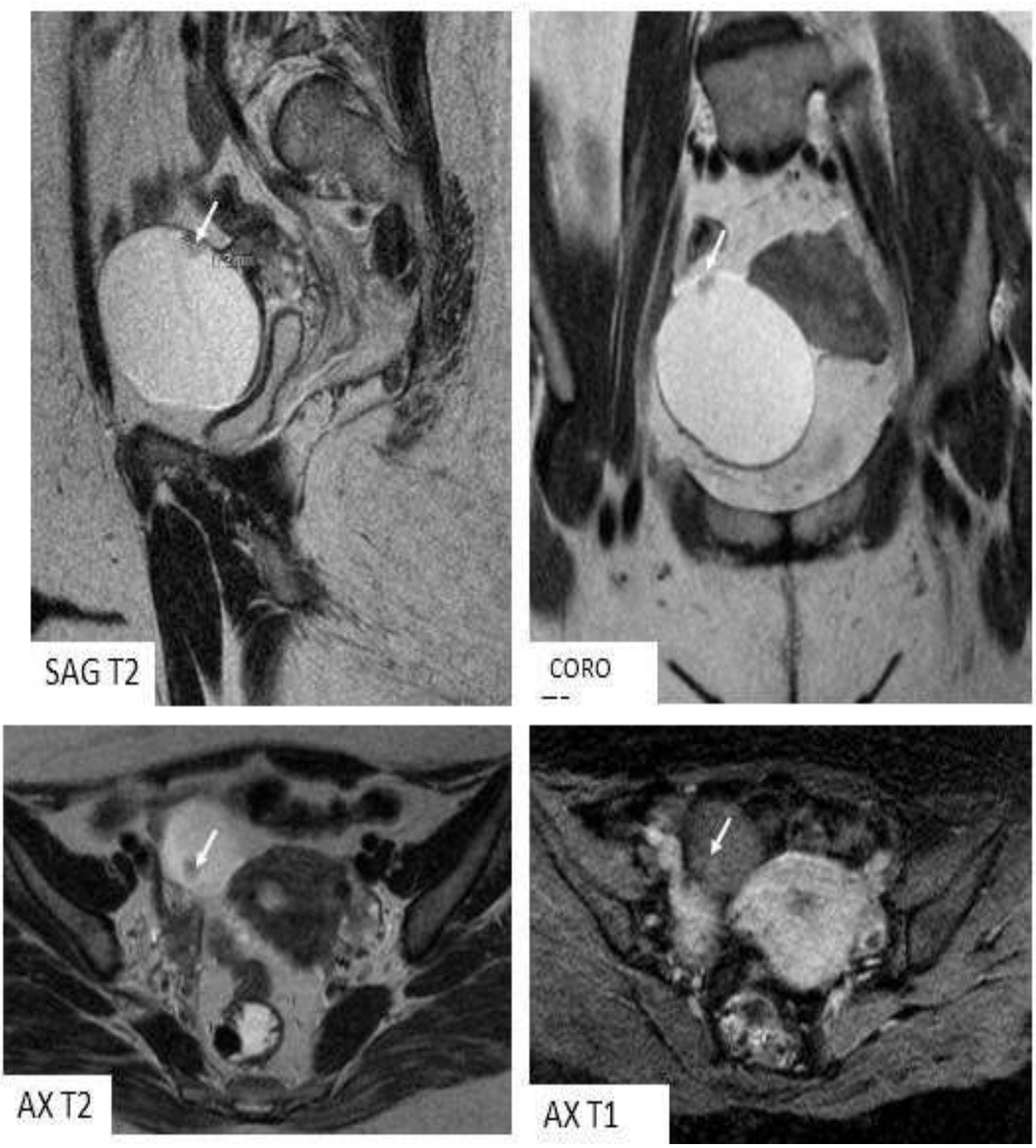

Figure 3: Pelvic MRI: right unilocular cystic mass, containing vegetation (white arrow) in T2 hypersignal, weakly enhanced after contrast, according to a type 2 curve. Aspect of a borderline ovarian serous cystadenoma

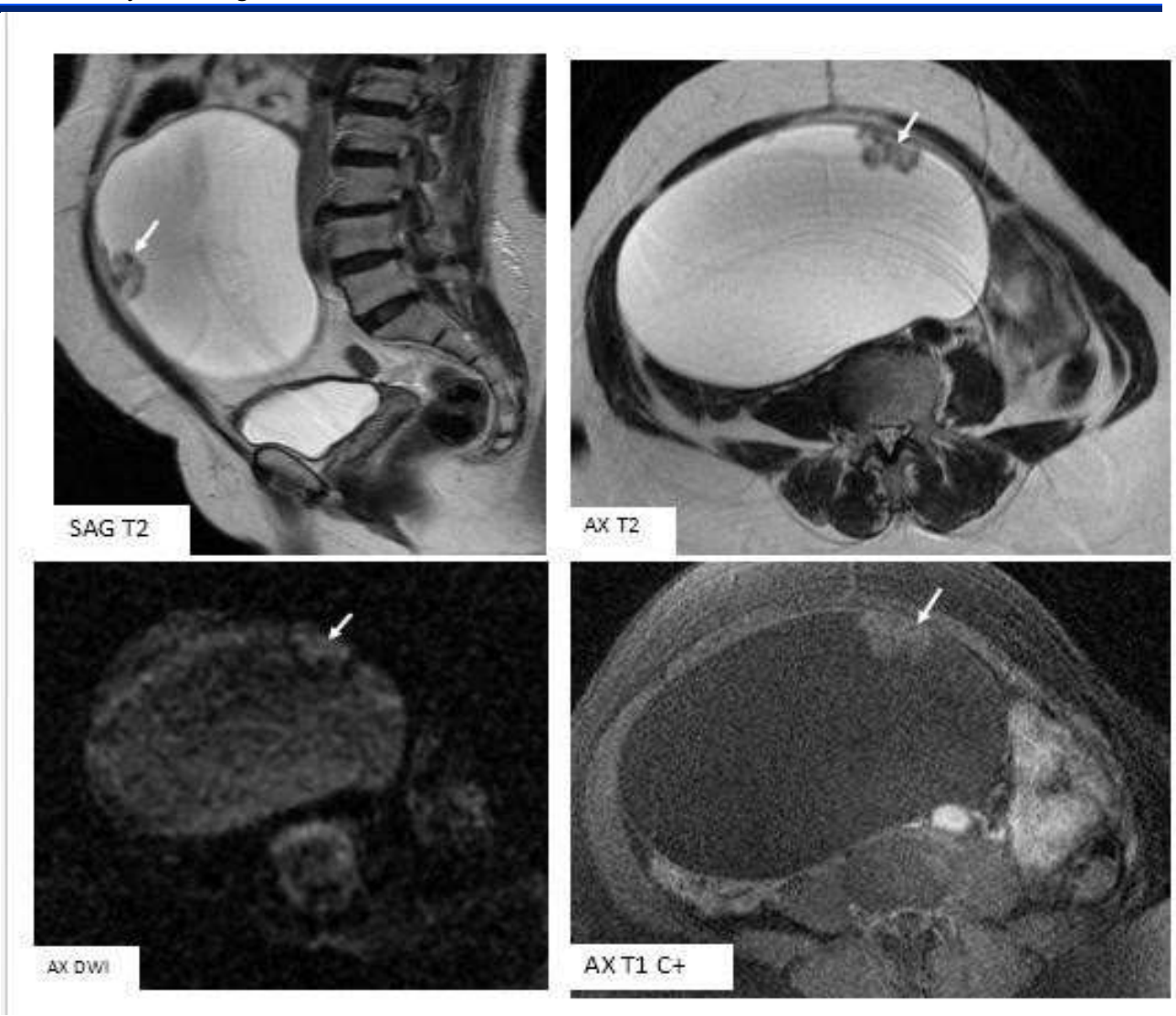

Figure 4: Pelvic MRI: right unilocular cystic mass, containing vegetation (white arrow) in T2 hypersignal, restrictive in diffusion, and weakly enhanced after contrast, according to a type 2 curve

Aspect of a borderline ovarian serous cystadenoma

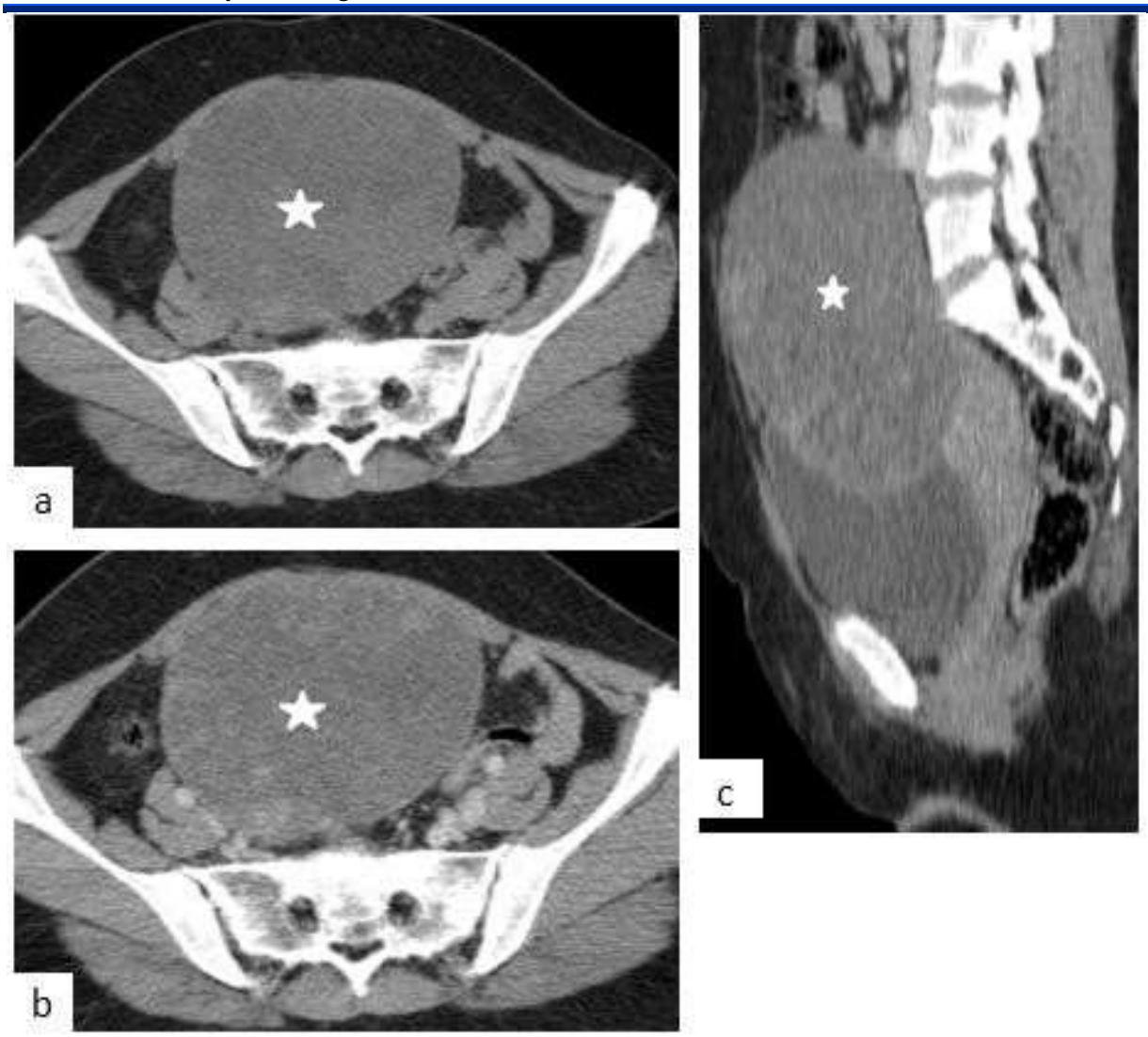

Figure 5: Abdominal-pelvic CT in C- (a), C+ (b) and C+ sagittal reconstruction (c): right pelvic ovarian mass (star) unilocular, containing several contrast-enhanced vegetations

Aspect suggestive of a borderline serous cystadenoma

Stadification:

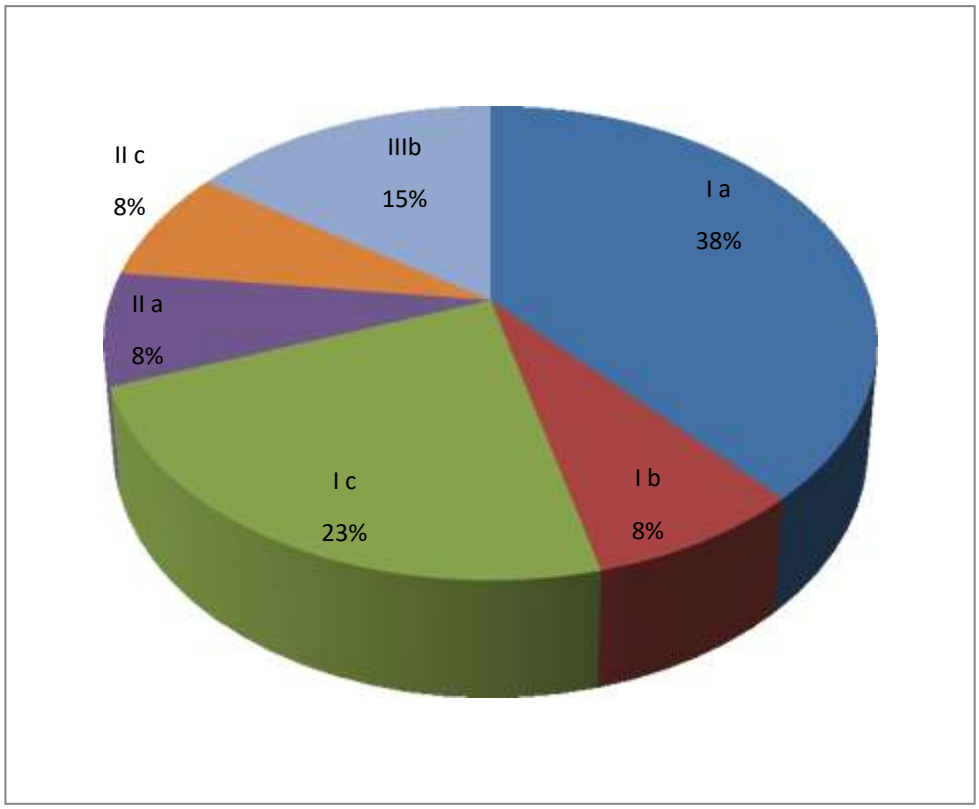

Diagram 4: Stadification of ovarian tumors in our study

Anatomopathology:

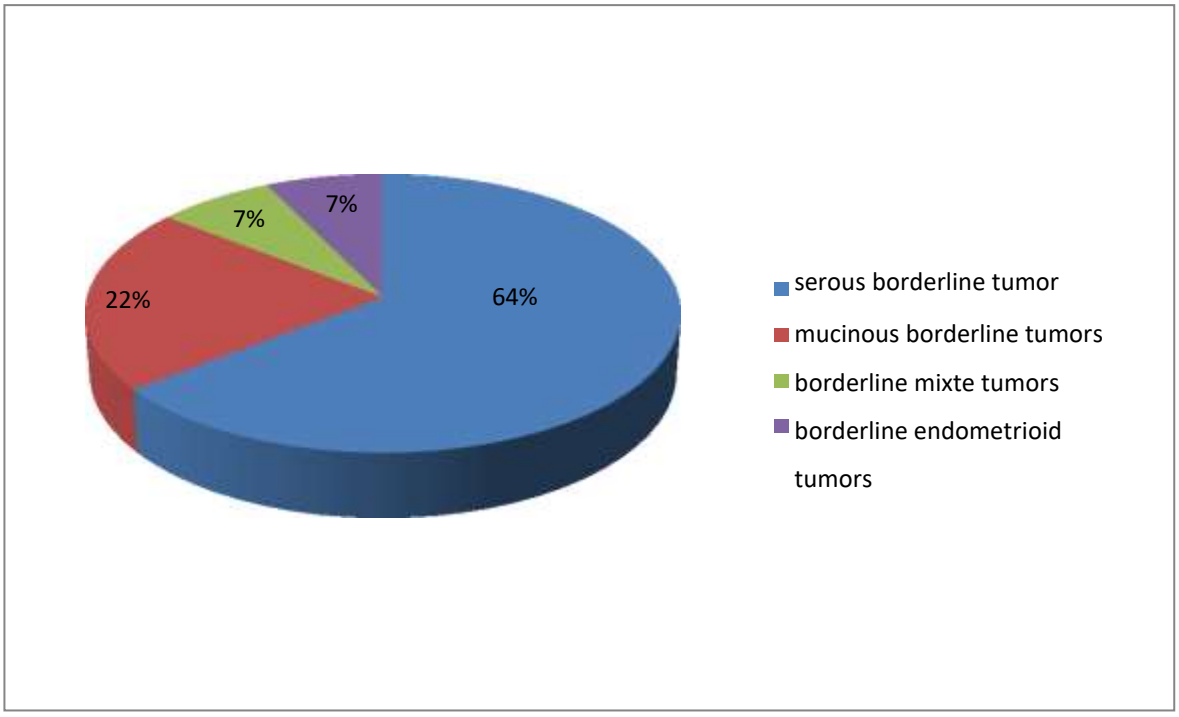

Diagram 5: Histological types in our study

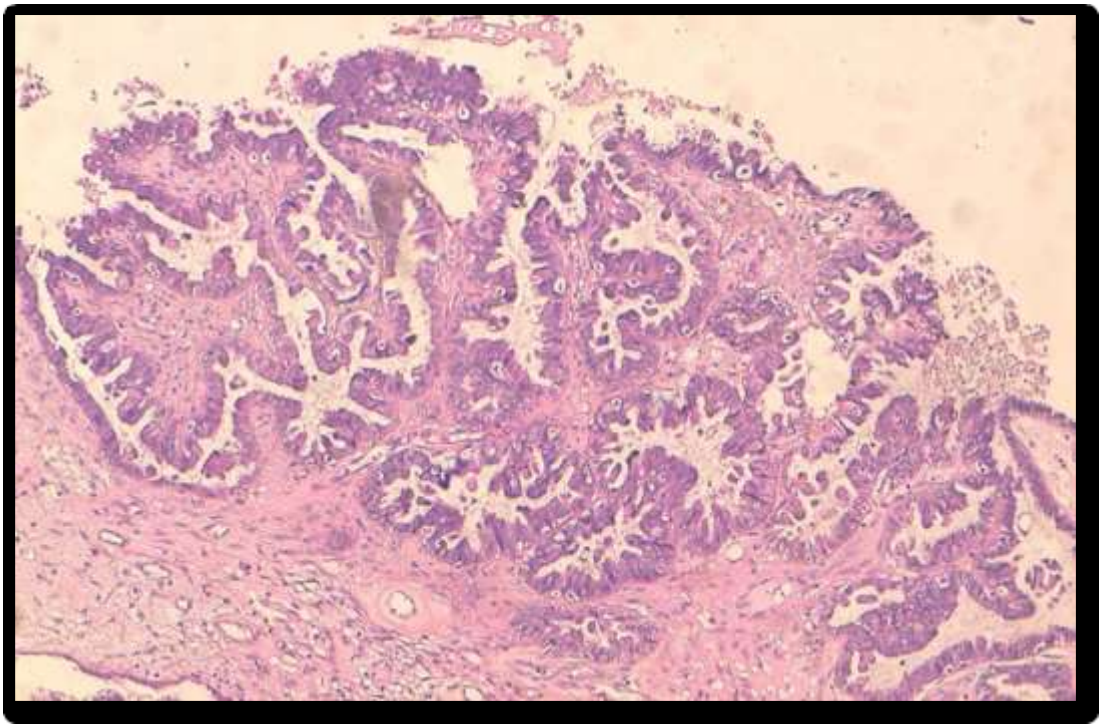

Figure 6: Borderline serous tumor of the ovary (HES x 20)

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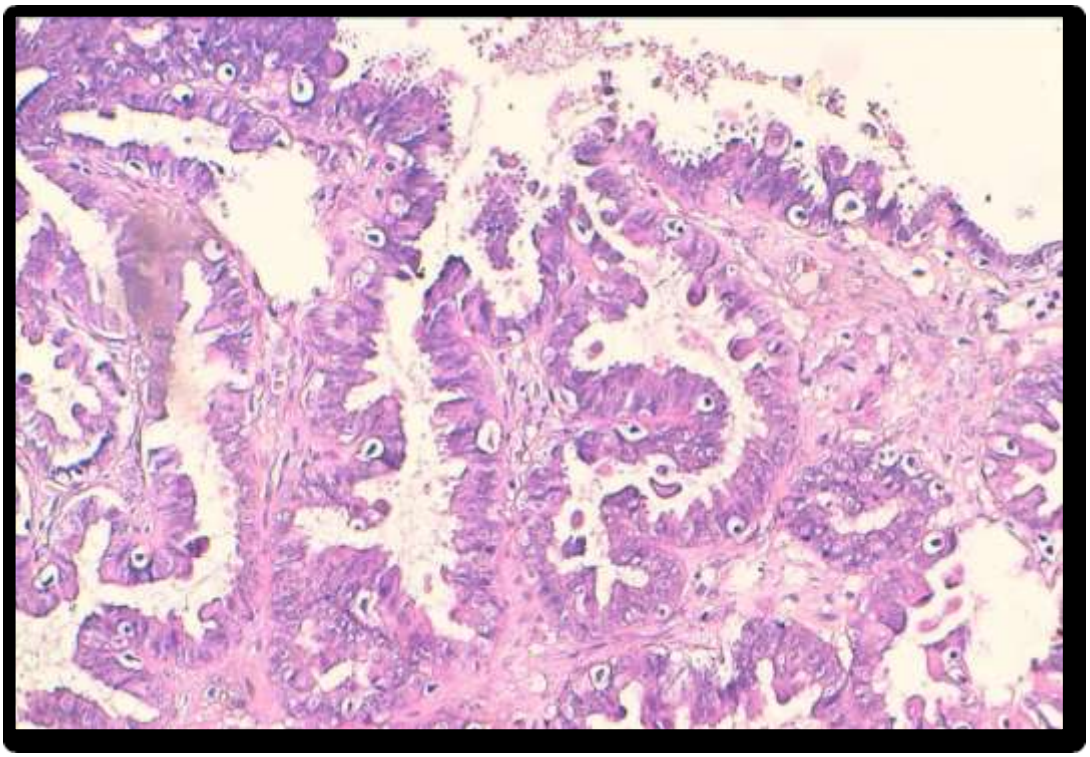

Figure 7: Borderline serous tumor of the ovary (HES x 20)

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DISCUSSION:

Borderline tumors of the ovary represent approximately 15% -20% of all ovarian epithelial tumors (2) with an incidence of 1.8 to 4.8 per 100,000 women per year (2).
The increase in the incidence of borderline tumors of the ovary has been observed over the past decades worldwide with a small decrease in the incidence of ovarian cancer.
The majority of BTOs are serous tumors (53.3%), followed by mucinous tumors (42.5%) and then the less common histological types (4.2%).
Patients with borderline ovarian tumors are generally younger than women with epithelial ovarian cancer (45 years versus 55 years) (3)

In contrast to ovarian malignancies, diagnosis of borderline tumors of the ovary is usually made at an early stage in 80% of cases. (4)

The most common symptom is pelvic pain followed by an increase in abdominal volume with or without a perceived abdominal mass.
Clinical examination is essential for ovarian tumors.
Borderline tumors of the ovary are usually large in volume. BOSTWISK (5) reports in his series a median diameter of 11.5cm (5mm to 34cm).

The clinical impact of the benign, borderline or malignant differentiation of a lesion is fundamental: an ovarian cancer must necessarily be managed by a team specialized in gynecological oncology.
In the case of a borderline or benign lesion in a young woman, the ovarian function must be preserved before any surgical procedure.
Ultrasound is the examination to be performed in the first instance for primary screening of any adnexal mass. It allows confirmation of the organic nature of a lesion and orientation towards its benign nature or not.
However, ultrasound is most often insufficient to effectively guide patients towards appropriate management.
If the abnormalities are localized in the pelvis, the second-line examination is magnetic resonance imaging (MRI).
If advanced ovarian cancer is suspected, an abdominopelvic CT scan is performed to assess the possibility of complete removal.
The IOTA classification is based on 2 main criteria (uni or multilocular lesion, solid or liquid) and allows the use of a universal nomenclature outlined in Table 3.

Table 3: Ultrasound classification according to IOTA group.

Criteria 1	Criteria 2	Criteria 3	Definition
Unilocular	Liquid	Pure	Anechogenic without particles, without echogenic area ou slid area
		Impure	Non anechogenic liquid
	Solid		Sold area ou vegetation ≥ 3mm
Multilocular	Liquid	Pure	Anechogenic with at least a partition
		Impure	Other echogenicity with at least a partition
	Solid		Solid area or vegetation ≥ 3 mm with at least a partition
Solid			Solid area ≥ 80% of the lesion
undefined	Unclassable		Poor visualization or difficult echogenicity

Table 4: Caracteritics of the vegetations according to IOTA (6)

	Size	Number	Doppler score	Calcification
Benign	<7 mm	<4	1	present
Suspect	>7mm	≥ 4 mm	2,3,4	absent

The IOTA group has also proposed (and validated) exclusive ultrasound criteria to guide the clinician to a malignant or benign lesion:

- If one or more M criteria apply in the absence of B features, the mass is classified as Malignant.
- If one or more B criteria apply in the absence of M features, the mass is classified as benign.
- If both M and B criteria apply, the mass cannot be classified.

If none of the criteria apply, the mass cannot be classified.

Treatment of borderline ovarian tumors is surgical:(7,8,9)
Surgery allows:
- Confirm the diagnosis (with the help of extemporaneous histological examination if necessary)
- To evaluate the extension of the disease
- To carry out the treatment adapted to the per operative findings.

There are 3 stages in the surgical procedure:
- Careful exploration of the entire peritoneal cavity (pelvic and abdominal)
- Performance of an intraoperative extemporaneous examination when the tumor is macroscopically suspicious

The performance of a surgical extension assessment: known as "staging surgery".
The majority of studies agree that adjuvant treatment (chemotherapy or radiotherapy) does not improve patient survival in borderline ovarian tumors.
Some publications have shown that its toxicity may be greater than its effectiveness.
The response to standard cytotoxic agents is poor, probably due to the slow proliferation of these tumors.
More than 90% of borderline serous ovarian tumors are estrogen receptor positive, but there are only rare reports of response to tamoxifen, leuprolide and anastrozole.

Conclusion

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 years of 95%.

References:

(1) Neeraj Lalwani1,Alampady K. P. Shanbhogue1,Raghunandan Vikram2,Arpit Nagar3,Jaishree Jagirdar4, Srinivasa R. Prasad1 Current Update on Borderline Ovarian Neoplasms AJR:194, February 2014

(2) P Kamina ,X Demondion ;JP Richer ;M Scépi ;JP FaureAnatomie clinique de l'appareil génital Féminin encyclopedie medico-chirurgical ; Editions Scientifiques et Médicales Elsevier SAS : 2003

(3) Philippe Morice, Catherine Uzan, Raff aele Fauvet, Sebastien Gouy, Pierre Duvillard, Emile Darai Lancet Oncol ; Borderline ovarian tumour: pathological diagnostic dilemma and risk factors for invasive or lethal recurrence 2012; 13:e103–15

(4) Tavassoli FA, Devilee P. World Health Organization classifi cation of tumours: pathology and genetics—tumours of the breast and female genital organs.
Lyon: IARC Press, 2003

(5) Bell DA, Weinstock MA, Scully RE. Peritoneal implants of ovarian serous borderline tumors: histologic features and prognosis. Cancer 1988; 62: 2212– 22

(6) DANIELA FISCHEROVA,a MICHAL ZIKAN,a PAVEL DUNDR,b DAVID CIBULAa aGynecological Oncology Center, Department of Obstetrics and Gynecology, bDepartment of Pathology, First Faculty of Medicine and General University Hospital, Charles University, Prague, Czech Republic ; Diagnosis, Treatment, and Follow-Up of Borderline Ovarian Tumors The Oncologist 2012;17:1515– 1533

(7) Widschwendter M, Fiegl H, Egle D et al. Epigenetic stem cell signature in cancer. Nat Genet 2007;39: 157–158.

(8) Fiegl H, Windbichler G, Mueller-Holzner E et al. HOXA11 DNA methylation: A novel prognostic biomarker in ovarian cancer. Int J Cancer 2008;123:725–729

(9) Alejandra Abascal-Saiz, Laura Sotillo-Mallo, Javier de Santiago, and Ignacio Zapardiel .Management of borderline ovarian tumours: a comprehensive review of the literature . Ecancermedicalscience. 2014; 8: 403