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Phyllodes tumors: A retrospective study of 22 cases in the department of gyneco obstetrics 2 of the Hassan II university hospital

Abstract

Introduction: Phyllodes tumors (PTs) of the breast are rare fibro-epithelial tumors, which represent 1% of all primary breast tumors with an incidence of 0.3% to 0.9%, and they represent 2% to 3% of fibroepithelial neoplasms. Their diagnosis is based on histology. Our work aims to determine the epidemiological, clinical, histological and therapeutic aspects of PTs.

Materials and methods: This is a retrospective study conducted in the gyneco-obstetric II department at the hospital center Hassan II, between January 1st 2015, and December 31st 2020 of, on 22 patients histologically proved cases of phyllodes tumors.

Results: The study was conducted on 22 women, for whom the average diagnosis age was 35.6years old from 19 to 63years. 63.6% of the patients were nulliparous. The main clinical manifestation was a unilateral breast nodule measuring between 1 and 15.5cm (5cm on average). Mammographic exploration in the majority of cases revealed hyperdense opacity, roughly oval, well limited, often with regular outlines. The histological type was benign in 68.18% of cases, borderline in 18.18% and phyllodes sarcoma in 13.63%. The treatment was conservative in 86.37% of cases (lumpectomy), and radical in 13.63% of cases (mastectomy). After surgical treatment, 2 patients had insufficient resection limits and subsequently benefited from tumor bed revision. After follow-up, two tumors locally recurred with a huge mass that took up the entire breast. The two patients who had undergone a mastectomy and whose development was marked by the appearance of a second recurrence on the mastectomy scar, one of which was operable and the second had pulmonary metastases hence the indication of chemotherapy.

Conclusion: Out of this study, we noticed that Phyllodes tumors of the breast mainly affect young women. The diagnostic confirmation necessarily requires histological proof which is not often easy by only biopsy. The best management of this tumor remains adequate surgical resection with healthy margins, while emphasizing the need for monitoring because the risk of recurrence is always present. The prognosis is based on the histological characteristics of the tumor and the quality of tumor excision.

Keywords: breast, phyllode tumors, diagnosis, management

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Introduction

Phyllodes tumors (PTs) of the breast are uncommon fibro epithelial lesions that account for less than 0.5% of all breast tumors.[1–3] The World Health Organization (WHO) has classified PTs histologically as benign, borderline, and malignant.[4] They are also graded by WHO based on their histopathological characteristics including stromal hypercellularity and atypia, cellular pleomorphism, mitotic activity, and margin appearance.[5]

The essential treatment modality is by surgical intervention. Although the National Comprehensive Cancer Network (NCCN) guidelines recommend large local excision with a least surgical margin of 1cm, recent studies have reported the application of excisions with narrower surgical margins.[2,6]

In our department phyllodes tumors is most of the time a matter of differential diagnosis with benign fibroadenoma. We made this study to describe the epidemiological and clinical aspect and the management of PTs.

Methodology

This is a retrospective monocentric descriptive study that spanned a 6-year period from January 2015 to the end of December 2020. This study was carried out in the gynecology-obstetrics department of the Hassan II University Hospital in Fez. I

It involved 22 patients with phyllodes breast tumors who received care in the same facility.

All cases of phyllode breast tumors confirmed by pathological studies were included in the study, and we excluded all patients where the diagnosis of phyllode tumor is based on imaging without histological evidence.

The various data were collected through: The medical files in the archives of the Department of Gynecology and Obstetrics II; The register and pathological reports of the anatomical pathology department as well as the CPR records.

The various variables studied were noted on farm sheets including: age, parity, genital activity; circumstances of discovery, clinical features, paraclinical investigations, pathological features, therapeutic management and subsequent course.

The various parameters studied were integrated into the Excel 2016 software and exported into the SPSS version.

Bounds:

In our study we encountered some limitations, namely:

1) Difficult access to the archive.
2) Lack of detailed operating reports.
3) Lack of data on evolution and monitoring.
4) Therapeutic management not detailed.

Results

During our study period, we collected 22 phyllode tumors records managed in our department. This represented 1.36% of all mammary tumors treated in our department. The average age of our patients was 35.64 years, with extremes ranging from 19 to 63years. The 30-39 age group was the most represented with 31.81% followed by the 20-29 age group with 27.2%. Most of our patients were nulliparous, with a proportion of 63.6%. 19 patients were in the period of genital activity (86.3%), 2 were postmenopausal (9.09%) and 1 patient was perimenopausal (4.5%).

Regarding contraceptive use, 2 patients were on oral contraception (9.09%) based on estrogen-progestogen for a period of 2years for the first, and a duration of 6 months for the 2nd; Only 1 patient was on mechanical contraception (4.5%) while 19 patients never used contraception (86.3%).

In terms of family history, one of our patients reported endometrial cancer in her mother at the age of 60, and the occurrence of a malignant breast tumor in a maternal cousin of 1st degree at the age of 36.

The mode of revelation was clinical in all our patients, dominated by the discovery of a breast nodule on self-palpation in 15 patients (68.18%), by the increase in breast volume in 5 patients (22.72%) and the discovery of a breast nodule during a medical consultation in 2 patients (9.09%) The average consultation time was 11 months with extremes ranging from 1 month to 4years.

On palpation, the presence of a single nodule was noted in 81.81% of patients allowed us to determine the characteristics of tumors, the average clinical tumor size was 5cm with extremes of 1 to 15.5cm. All of these tumors were firm in consistency.

The tumors were well limited and mobile in 20 women (90.9%) and poorly limited and adherent in 2 patients (9.09%). 86.36% of patients had painless tumors versus 13.63% with painful tumors. Only one patient had palpable homolateral lymphadenopathy.

Mammography was performed in 14 patients with an age >29years and made it possible to determine the radiological characteristics of the tumor lesions as hyperdense opacity, coarsely oval in 13 patients or 59.09% of cases. These opacities had a size of 2 to 15cm with an average of 6cm. Microcalcifications were observed in 2 women (9.09%).

The breast ultrasound was performed in all our patients, it highlighted a tissue mass with the following ultrasound features: The size of the images was between 2 and 15cm with an average of 6cm; Tissue masses were polylobed, hypoechoic and heterogeneous in 20 women (90.9%), with regular contours in 18 women while in 2 women, the masses had poorly limited irregular contours without a posterior shadow cone.

Mammography coupled with ultrasound concluded 15 lesions classified ACR4 (68.18%), 3 ACR 2 lesions (13.63%), 3 other ACR3 lesions (13.63%) and 1 ACR5 lesion (4.54%).

None of our patients have had breast MRIs.

All our patients benefited from a microbiopsy whose anapath results were in favor of fibroepithelial proliferation that could be compatible with either adenofibroma or phyllode tumor in 15 patients or (68.18%); in favor of adenofibroma in 3 patients (13.63%); high grade phyllode tumour in 3 patients (13.63%) and intermediate grade phyllode tumour in 1 patient (4.54%).

Immunohistochemistry was performed in a single patient and confirmed diagnosis of benign phyllode tumor. (The proliferation index Ki67 was expressed by rare cells estimated to be less than 5% of tumor proliferation).

The extension assessment was carried out in 4 patients: 2 had a high-grade histological lesion, the 3rd had an intermediate grade lesion, while the 4th is a 40-year-old patient, with an ulcero-budding mass of the left breast;

A Thoracic CT scan performed in three patients without secondary lesions.

All our patients have received surgical care. The type of surgery was based on clinical presentation and histological classification of tumours. Surgical management is summarized in Table 1.

Table 1 Surgical management of PTs

Type of surgery		Effective	Percentage (%)
Conservative surgery	Simple tumorectomy	3	13,63%
	Large tumorectomy	13	59,09%
	Tumorectomy + histology of the limits	3	13,63%
Radical surgery	Mastectomy	3	13,63%

On the postoperative anapath level of the 22 operating pieces collected, we note macroscopically the presence of 15 pieces of whitish color, or 68.18%, 4 pieces of grayish color, or 18.18% and 3 pieces of grayish-white color, or 13.63%. The size of the tumor varied between 1 and 18cm with an average of 6.5cm.

Tumors of firm consistency were found in 19 patients, or 86.36% of cases, and elastic consistency in 3 patients in 13.63% of cases.

A lobulated appearance was observed in 13 patients, or 59.09% of cases, and a nodular appearance in 9 patients, or 40.90% of cases.

The Microscopic study found that the mitotic index was less than 3 in 20 patients or 90.90% of cases, while in 9.09% of cases it was greater than 10. The margin of excision of tumors was clear in 20 patients or 90.90%, while the infiltration of the margin of excision was described in 2 patients or 9.09%.

Histological grade was specified in all cases and there were 15 WHO grade 1 phyllode tumours (68.18%), 4 WHO grade II phyllode tumours (18.18%) and 3 WHO grade III phyllode tumours (13.63%).

Radiotherapy irradiation after tumor resection has been indicated in two patients: one for a recurrent grade 3 phyllode tumor with a history of mastectomy plus resection of the pectoralis major and the second for a grade 3 phyllode tumor with phyllode sarcoma.

Palliative chemotherapy has been indicated in a patient with phyllode sarcoma with pulmonary metastasis and invasion of the pectoral muscle and intercostal muscles of the 4th, 5th and 6th ribs without bone lysis.

In our study, no hormone treatment was initiated. The modalities of surveillance in our training vary according to the histological classification of the tumor and the treatment adopted. The rhythm

of surveillance in our series was as follows: a consultation after 10 days post-operative in the day hospital and then a mammographic and ultrasound controls every 6 months.

After surgical treatment, 2 patients had insufficient resection limits and subsequently benefited from a tumor bed resumption, with clip placement.

In our study, we observed two cases of recurrence or 9.09% of patients. In the remaining 20 patients, monitoring was favorable without metastasis or recurrence during the study period. In addition, no cases of death have been described.

Discussion

Phyllodes tumors (PTs) of the breast are uncommon fibro epithelial lesions that account for less than 0.5% of all breast tumors.[1–3] PTs are a rare diagnosis among breast tumors. In our study we found that PTs was representing 1,36 % of all breast tumors in our department during the period of the study. This frequency is different from one study to another. In a study[7] made in a country from west Africa, the frequency of phyllodes tumors was 2.7% among benign and malignant breast pathologies. Yuniandini A et al(3) reported only 69 cases in the 5-year study period. Hassouna JB et al.[8] reported over a period of ten years 106 cases of PTs. Another study made over a period of 7 years found 26 cases of PTs. The mean age of patient was 35,64 years with extremes of 19 and 63years old. Our result agrees with the one reported by Yılmaz et al.[2] who found in their study that the mean age of patient diagnosed with PTs was 35.07 years. As it was a case in our study, certain authors[7,9,10] found that nulliparous are more affected by PTs. It looks like that PTs is frequent in premenopausal period, In some studies[2,11] there were more patients in premenopausal status affected by PTs without scientific explanation.

The mode of clinical revelation in all our patients was dominated by the discovery of a breast nodule on self-examination and by the increase in breast volume. PTs usually present clinically as a benign breast mass, with rapid growth sometimes.[4] PTs vary greatly in size[4,9,12] from 1cm to 30 cm. In our study, the average clinical tumor size was 5 cm with extremes of 1 to 15.5cm However. Some association can also be noticed such as axillary lymph nodes,[9] skin fixation, nipple retraction, ulceration of the overlying skin.[12] This description of the clinical aspect is not enough to think about the diagnosis of PTs. Its mandatory to complete the investigation by imagery and biopsy. Triple assessment including clinical, radiological, and histopathological evaluations of suspected breast lumps are the standard of care.[4] The mammography carried out in our study showed in most cases a hyperdense, roughly oval opacity and the breast ultrasound showed in almost all cases polylobed, hypoechoic and heterogeneous tissue masses. Despite the description of these imaging exams There is no clear indicator of malignancy observed on either ultrasounds or mammography, most of the time they have features like fibroadenoma on mammography and ultrasonography, however, with a higher mammographic density for PTs.[4] On mammography, a PT typically appears as a well circumscribed, hyperdense or isodense, round or oval mass.[13] By ultrasound, it appears as a solid mass, inhomogeneous, with a radiolucent halo, lobulated border, and sometimes coarse microcalcifications. The presence of a solid mass with multiple or single, round or cleft like cystic spaces with posterior acoustic enhancement suggest the diagnosis of PT, but Intra mural cysts with the absence of posterior acoustic enhancement can also be present. High vascularity is usually present in solid components.[4]

Only the histology can make a clear diagnosis of PTs. But Major diagnostic challenges may also be encountered with the cytological diagnosis of PT.[13] It is also reported that cytological diagnosis of PTs by biopsies is usually unreliable[4] as it was the case in our study where the diagnosis was not evident with the microbiopsy. The results did not allow to distinguish between fibroadenoma and PTs of grade 1. But we noticed at the final histology after surgery that PTs of grade 1 was the most frequent followed by the grade 2 with the frequency of 68,18% and 18,8% respectively. This result was concordant to the one reported by Diallo B in their study where they found that the PTs of grade 1 was the most frequent followed by the grade 2.

All the patient of our study underwent surgery, and the surgery was conservative in 75% of cases. Some authors[14] proposed an algorithm for the management of suspected and unsuspected Phyllodes tumors of the breast and suggest the following : The NCCN guidelines advocating a 1 cm margin for surgical therapy for Phyllodes tumours is overtreatment, Surgeons should request that pathologists classify the Phyllodes tumours as benign, borderline or malignant breast tumours in their reports, Patients with a microscopically negative margin following a lumpectomy for Phyllodes tumours require no adjuvant therapy and can be followed up with annual surveillance. Patients with a positive margin can be treated with margin reexcision or close surveillance if they have benign or borderline histology. Patients with a positive margin and malignant histology should undergo further surgery to obtain clear margins.

Conclusion

Out of this study, we noticed that Phyllodes tumors of the breast mainly affect young women. The diagnostic confirmation necessarily requires histological proof which is not often easy by only biopsy. The best management of this tumor remains adequate surgical resection with healthy margins, while emphasizing the need for monitoring because the risk of recurrence is always present. The prognosis is based on the histological characteristics of the tumor and the quality of tumor excision.

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Conflicts of interest

There is no competing interests between the authors.

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