Difficulties in diagnosing and treating phyllodes tumor of the breast - case report

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Summary

A phyllodes tumor is a rare breast neoplasm, and in the majority of cases is benign. Its diagnosis is difficult because many characteristics of this neoplasm are also typical for other changes within the breast, especially for fibroadenoma. Palpable examination and imaging diagnostics are obviously very important in the process of establishing a diagnosis. However, histopathological examination is the most important one. Currently, the treatment process boils down to surgical removal of this tumor. It is essential to keep a sufficient margin of healthy tissues, which reduces the risk of local recurrence. In the described case the patient was admitted to hospital due to single tumors in both breasts. Mammosonography allowed us to pre-exclude changes of a malignant character. The right breast tumor was removed during mammotomy. Histopathological examination showed a phyllodes tumor, which is why the mass on the other side was removed surgically. In the period of an 18-month-observation no local recurrence was revealed.

Key words: Phyllodes tumor; Differentiation; Surgical treatment.

Introduction

A phyllodes tumor is a rare breast neoplasm. It accounts for only 0.3-0.9% of all breast tumors [1]. It occurs at all ages. However, the highest incidence of disease applies to patients between 45 and 49 years of age [2]. No dependencies between its occurrence and hormonal changes of the pre- and postmenopausal period or hormonal treatment have been determined. In the majority of cases this tumor is revealed incidentally because it gives no symptoms for a long time. Usually it is painless, hard, well limited and has mobile changes that can grow quickly. In some cases, when the tumor is large, the neoplastic process can include skin and the areola of the nipple. This is caused by pressure on the skin covering the tumor, which leads to ischemia and secondary ulcerating changes.

From the histopathological point of view, the following types of phyllodes tumors have been distinguished: benign, border and malignant. Malignant tumors account for 25-35% of all phyllodes tumors [3]. The presence of atypical cells, mitotic activity, hypertrophy of the stroma and the character of the margin of the change were assumed to be the criteria of such division [4]

Despite the fact that the morphological and histopathological structure is well known, the differentiation process, especially with fibroadenoma is still a problem. History taking, subject examination, breast ultrasonography and mammography can reveal a similar diagnosis in both cases. A fine-needle biopsy is considered to be essential for establishing diagnosis. Sometimes an unambiguous diagnosis is difficult to establish on this basis. Usually this is due to the lack of epithelium or stoma in the sample [2]. In differential diagnoses the following should also be taken into account: breast gland inflammation, abscess, inflammatory cancer, radiological scars, fibrocystic degeneration or fat necrosis [5].

A typical treatment process includes surgical removal of the change with a 1-2 cm margin of healthy tissues, which helps to reduce the risk of local recurrence. Mastectomy is only performed in extraordinary cases as it would cause significant breast deformation. It is advisable only in case of very large tumors when the possibility of obtaining a sufficient margin of healthy tissues is limited [6]. A phyllodes tumor spreads in a hematogenous way [7]. The most frequent metastases include lungs (76.6%), bones (28%), brain (9%) and less frequently the mediastinum and liver [7]. Metastases to lymph nodes apply to 5% of patients which is why removal of axillary lymph nodes is performed rarely [1]. Complications include infections of postoperative wounds and more rarely abscess or hematoma [2].

Radiotherapy does not play a significant role in standard treatment. It can be useful in the instances of local recurrence, remote metastasis and postoperationally as neoplasm prevention. Efficiency of chemotherapy has not been proved either. Hormonal therapy is not efficient either although 20-40% of phyllodes tumors have estrogen receptors and nearly all of them have progesterone receptors [1].

Local recurrence happens in 15-20%. The risk equals 21% for a benign type and 43% for a malignant type. It is estimated that remote metastases account for 5% of incidences and 33% of cases are preceded by local recurrence [1]. Totally a 5-year-survival concerns 90% of patients [8].

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The scope of changes that can develop in breasts with which a phyllodes tumor should be differentiated is large. That is why this paper is aimed at demonstrating a case which underlines how important a detailed diagnostic process is in order to choose the correct treatment.

Case Report

A 22-year-old patient was admitted to the Clinic of Gynecological Surgery at the University of Medical Sciences in Poznan due to a tumor in the right breast for further diagnosis and treatment. On admittance, the patient did not report any ailments. During the physical examination, a mobile and slightly painful tumor 2-3 cm in diameter was detected in the right breast and a little bit smaller and mobile change in the left breast. The surrounding lymph nodes were not enlarged. Results of laboratory tests were normal. The ultrasonographic examination that was carried out on the day of admission revealed a solid, hypoechogenic change of a 2.3 cm in diameter in the upper internal quadrant of the right breast and a tumor of the same character of 1.5 cm diameter on the boundary of quadrants of the left breast. The image of the armpits was bilaterally unchanged. Results obtained allowed us to establish an initial diagnosis indicating bilateral breast tumors at a low-risk of malignant changes, which qualified the patient for removal of the tumor by means of mammotome biopsy.

The procedure was carried out on the same day under ultrasound and proceeded without any complications. The mass in the right breast was removed entirely and the samples drawn were passed on to for histopathological examination. The next day after removing a pressure dressing and checking the wound the patient in generally good condition was discharged with a recommendation of a control check by her attending physician.

Seven and 14 days after the procedure the patient underwent control consultations. Examinations showed regular healing of the wound, and no bleeding was detected. The following diagnosis was taken on the basis of the histopathological examination: “phyllodes tumor-benign form”. Another consultation was recommended in order to remove the mass in the left breast. One month later tumorectomy of the left breast was carried out. The sample of the entirely removed mass was passed on for histopathological examination which revealed fibroadenoma.

Six months later the patient underwent the first ultrasound breast control. The examination showed no focal changes in the site of the tumor and medium intense changes of a mastopathic character in the right breast, as well as a visible scar of 7.6 cm as a result of the left breast tumorectomy. The armpits were found regular. Further control mammography/sonography carried out 12 and 18 months after the procedure revealed no pathological changes.

Discussion

Phyllodes tumor is a rare but clinically significant breast neoplasm. The features of the tumor on examination or mammography/sonography are misleading and can cause many problems in the diagnostics and treatment process. This is due to the fact that they are not only specific for phyllodes tumors. Thus the most important problem in the diagnostic process is the differentiation with other breast tumors. The biggest similarity was observed in relation to a fibroadenoma [1, 5, 6]. This is the main problem as far as the diagnostic process of phyllodes tumors is concerned, as proved by numerous clinical reports [1, 2]. The case presented here seems to support the essence of this problem. The patient did not report any ailments and clinical indexes did not correlate with the histopathological results obtained later. Like fibroids, phyllodes tumors are palpably solid structures, well limited and mobile [2, 5]. Also, radiologically the change is well limited and ultrasonographically it may respond to a hypoechogenic area with outbreaks of cystic degeneration [2]. There is another problem related to the diagnostic process of this tumor, namely the determination of the degree of malignancy. It is considered that neither clinical tests nor imaging results can make such a distinction possible or define the risk of recurrence or metastases [1]. The majority of authors claim that the most important criteria differentiating benign tumors from malignant ones include: high mitotic index, stromal hyperplasia, pleomorphis of cell nucleus and infiltration of the margins. However, these are the criteria available after the removal of the tumor and histopathological examination [4]. Some papers report on the significance of the size of the tumor in the process of determining its character [3]. It is suggested that tumors of 10 cm in diameter and more involve a higher malignancy variant and a higher risk of local recurrence [3]. In the case of our patient the changes were 2-3 cm in size and after two years of treatment no recurrence has been reported. This may prove the relation between the size of the tumor and its malignancy and local recurrence. However, not all authors are of that opinion [1]. As was described in the introduction, surgical removal of the mass is the most appropriate solution. The effectiveness of this treatment differs from one case to another because this type of tumor is likely to recur in the original location or near it. Mammographic/sonographic imaging in our patient suggested a benign change. That is why the tumor from the right breast was removed by means of mammotome biopsy. Despite the fact that a non-standard treatment was used, no recurrence was reported. The frequency of recurrence depends mainly on histopathological criteria and reaches 15-20% [1]. In their paper Guerrero, Ballad and Grau determined the risk of recurrence taking into account malignancy grade of tumors - 21% risk in the instance of benign changes and 43% in the instance of malignant changes [1]. The risk of recurrence arises also when the tumor is removed without a margin of healthy tissue. The majority of authors agree that the most suitable margin should be 1-2 cm [1, 6, 8]. The average recurrence time described in the literature amounted to 12 months [3]. This indicates that it is very difficult to forecast whether surgery will be successful. The risk of local recurrence depends on many factors that are difficult to determine.

In conclusion a phyllodes tumor is a significant diagnostic and therapeutic problem due to its low clinical specifity, which is why special attention should be drawn to differentiate this neoplasm from other changes. This will allow therapeutic mistakes to be avoided and the correct treatment to be chosen.

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