Total mastectomy for phyllodes malignant tumor in an elderly patient

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ABSTRACT

Phyllodes tumors are rare neoplasms accounting for less than 1% of all breast malignancies. Under this generic name more histopathological subgroups are included. Malignant phyllodes tumors represent less than a quart of all phyllodes tumors and are associated with a more aggressive biological behaviour with a higher tendency to both local and distant metastases. One of the most important prognostic factors in order to increase the overall survival in these cases remains a wide excision of the primary tumor. We present a case of a 69 years old patient diagnosed with a large tumor deforming the left breast in whom the results of the puncture-biopsy revealed a Phyllodes malignant tumor. A total mastectomy was performed.

Key words: Phyllodes malignant tumor, elderly, total mastectomy

INTRODUCTION

Phyllodes tumors are rare neoplasms accounting for <1% of all breast tumors [1], while malignant phyllodes tumors represent less than 25% of all phyllodes tumors. [1-3] Phyllodes tumors are formed by epithelial and stromal components bordered by mesenchymal cells; the malignancy of these tumors is given especially by the stromal elements.[4-7] Malignant transformation of a phyllodes tumor was first described in 1774 and fully classified in 1838 by Muller. [8, 9] Pathological aspects range from grade I to grade III malignant tumors, for the last category the stromal component displaying a clear pattern of sarcoma. These kind of tumors are associated with a higher risk of recurrence and evolution towards an aggressive disease. [10, 11] We present the case of a 69 year old patient who presented for the apparition of a large mass deforming the left breast in whom a total mastectomy was performed. The histopathological findings revealed a malignant Phyllodes tumor.

CASE REPORT

A 69 year old patient presented for the apparition of a large tumor deform-

ing the left breast associated with nipple retraction. The tumor was first observed by the patient 3 months before and presented an accelerated growth associated with the presence of local pain. (*figure 1*) The fine needle aspiration revealed the presence of atypical spindle cells with up to 8 mitoses per 10 high power fields. The local clinical exam and the imagistic exams excluded the presence of enlarged axillar or intra-thoracic lymph nodes. Surgery was performed and consisted in a total mastectomy due to the large volume of the tumor involving the central area of the breast. (*figures 2, 3*) The histopathological findings confirmed the results of preoperative fine needle puncture; the resection margins of the specimen were free of tumoral invasion. The postoperative course was uneventful.

DISCUSSIONS

Although the highest proportion of breast malignancies is represented by adenocarcinomas originating from the mammary gland, tumor degeneration can occur in any kind of tissue present at the level of the breast giving birth to various kinds of tumors like angiosarcomas or leiomyosarcomas.[4] Phyllodes tumors (PT) are usually benign tumors which do not metastasize but might present a high rhythm of growth and a high capacity of recurrence. In rare cases they can develop a malignant transformation capable of producing both local recurrence and distant metastases. [5-7, 9] Initially recognised and diagnosed by their macroscopic fleshy aspect, in fact PT comprises a wide variety of tumours with mixed epithelial and benign or malignant mesenchymal proliferation. Malignant PT represents a specific sub-type of breast malignancies which is formed by both epithelial and connective tissue stroma. [4]

Due to the fact that sharp distinction between benign, borderline and malignant PT is sometimes difficult to be obtained, predictive factors for local recurrence or distant metastases are hard to be well established. [11] However, the gold standard in treating these tumors remains a complete surgical resection. [4] In different studies local recurrence is seen in 8-40% of cases while distant metastases are reported in 0-21% of cases, depending on the proportion of aggressive histopathological types of tumors comprised in each study. [12,13]

Histopathological studies classified PT in 3 groups, from grade I to grade III tumors –the last group being represented by malignant PT in which the stromal component displays a clear pattern of sarcoma. [4]

Figure 1 - large tumor entirely deforming the left breast

Figure 2 - the specimen of total mastectomy

Figure 3 - the specimen presenting areas of fleshy tumor associated with necrosis and haemorrhagic areas

Confavreux et al conducted a study on 70 patients with primary breast sarcomas and PT. All patients excepting one were submitted to surgery first, the main performed procedures being mastectomy (46 cases) or wide excision (2 cases). The main histopathological

types were primary breast sarcoma (44 cases), grade I PT (5 cases), grade II PT (5 cases) and grade III PT (16 cases). Axillary lymph node dissection was performed in 26 cases while only 2 cases presented positive lymph nodes at the microscopic evaluation. Postoperatively 17 patients underwent adjuvant chemotherapy- the main therapeutic protocol including anthracycline and alkylating agents while in 23 cases adjuvant radiotherapy was performed. At the end of adjuvant therapy complete response was achieved in 60 cases. When it comes about long term survival, it seems that the most important factors associated with long term survival were complete resection and histopathological type of tumor: patients who underwent R0 resection reported a 3 year survival rate of 72% while this parameter significantly decreased in cases in whom R1-R2 resections were performed ($p=0,036$). Lower histopathological grades of PT (I and II) reported a 3 year survival rate of 100% while in cases with PT grade III or with primary breast sarcomas the 3 year survival rate was only 57,6% ($p=0,001$). The overall survival rate at 5 years was 49%. Half of the patients presented recurrent disease, 22 of them being diagnosed with recurrent tumors during the first 12 months. When it came about the site of the recurrence, 22 cases relapsed locally while 11 presented systemic disease and 2 experienced both types of relapse. The risk of recurrence could not be linked to the type of surgery or with the association of adjuvant oncologic treatment. This study revealed important similitudes between malignant PT and primary breast sarcomas and established significant prognostic factors but it was limited by the inclusion in the same study group of different histopathological types. (4)

While in Confavreux's study there were no significant factors in order to predict tumoral recurrence, Eroglu et al demonstrated that tumour necrosis, stromal overgrowth, number of mitoses, stromal cellularity and atypia represent important factors in order to predict recurrence and Asoglu et al concluded that stromal overgrowth is the only relevant aspect in order to predict tumor recurrence. [13, 14]

Although Confavreux et al failed to demonstrate any improvement of the overall survival in cases in which adjuvant radiation therapy was associated, some other authors sustain the benefit of this oncologic adjuvant treatment. [15, 16]

The benefits of complete R0 resection at the time of surgery has been widely demonstrated in clinical studies and remains one of the most important factors which increases the overall survival. [16-19]

In Popescu's study conducted between 1960 and 1989 in Fundeni Clinical Hospital, 19 cases with benign (15 cases) and malignant (4 cases) PT were included. Two of the cases initially diagnosed with benign tumors developed malignant recurrences. The authors concluded that in cases with malignant PT the treatment of choice is total mastectomy with wide resection of the tumor and surrounding tissues while in cases with initial benign disease a less extensive surgery (quadrantectomy) associated with an adequate follow-up is the treatment of choice. [19]

In order to improve the long term results, some authors proposed association of neo-adjuvant chemotherapy and irradiation for patients diagnosed preoperatively with tumors larger than 5 cm, but unfortunately only a increased disease free survival was obtained, while the overall survival remained the same. [20]

Ben Hassouna et al conducted a study on 106 patients diagnosed with PT, which were classified in 3 groups: benign (62 cases, 58.4%), borderline (16 cases, 15%), and malignant (28 cases, 26.4%). Patients with malignant tumors underwent conservatory surgery in 9 cases and radical surgery in 19 cases. 5-year overall and disease-free survivals were 28.5% and 15.6% for patients with malignant PT who underwent conservative surgery versus 72.7% and 73.6% when the surgery was radical (mastectomy with or without axillary dissection) ($p=0.12$, $p=0.022$ respectively). After a mean follow up of 43 months, local recurrence was diagnosed in 17.8% cases (5/28) with malignant PT, 31.2%

(5/16) with borderline and 4.8% (3/62) with benign PT. In four cases modifications of the initial histopathological type appeared: 3 benign tumors transformed into borderline tumors (in 2 cases), or into malignant tumor (1 case) while in a case initially diagnosed with borderline tumor a malignant PT was discovered at the moment of recurrence. Local recurrence was significantly increased in larger tumors, borderline and malignant forms presenting cytonuclear atypia, necrosis and hemorrhage, a higher number of mitosis or stromal overgrowth. As in the other mentioned studies, one of the most important factors for prolonged disease free survival was R0 resections ($p=0.01$). When studying the apparition of distant metastases, they were seen in 8 cases: 7 patients were initially diagnosed with malignant PT while in the eighth case a borderline tumor had been found at the moment of primary surgery. The main sites involved in developing distant metastases were bones (87,5%) and lungs (12,5%) [21].

CONCLUSIONS

Under the general name of PT various histopathological types can be found, each category in part presenting different biological behaviour. Due to the rarity of these tumors there are no standard therapeutic protocols yet, but it is widely accepted that a complete R0 resection is one of the most important factors associated both with prolonged disease free survival and overall survival. However further studied involving each histopathological subtype are still needed in order to establish which cases could benefit most from the association of adjuvant or neo-adjuvant oncologic treatment.

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