

## Malignant phylliodes Tumours: Results of Breast Conserving Surgery and Immediate Reconstruction

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### Abstract:

**Background:** Malignant phylliodes tumour (MPT) is a rare breast tumor. Surgery is the mainstay in treatment but varies from local resection to modified radical mastectomy. In this study, we present our experience using wide local excision or subcutaneous mastectomy and immediate breast reconstruction in the management of MPT.



**Methods and Results:** Twenty-three recurrent MPT and ten patients with histological evidence of MPT were included. All patients with recurrent MPT (n=23) had subcutaneous mastectomy, tow centimeter wide excision of the scar and immediate breast reconstruction with either Latissimus Dorsi (LD) myocutaneous flap (n= 10) or Latissimus Dorsi muscle flap (n=13). Seven of the newly diagnosed patients had wide local excision of the tumor, reconstruction with LD muscle flap, tow had wide local excision and reduction of contra lateral breast, and one had subcutaneous mastectomy and silicon implant. The margin resection varied between five and fifteen centimeter in wide local resection group and subcutaneous mastectomy group respectively and the size of tumors varied between five and fifteen centimeters in diameter.

**Discussion:** During the follow up period, which ranged between twenty-four and eighty-four months one local recurrence, was recorded (3.03%) and none of the patients had distant metastasis or regional lymph nodes involvement. This approach has secured wider excision of MPT, offered breast reconstruction, and has reduced the chances of recurrence in our patients.

**Key words:** Latissimus Dorsi, myocutaneous, mastectomy.

Cystosarcoma phylliodes constitutes 0.3-0.9% of all breast tumors, the term "sarcoma" was initially used because of its fleshy appearance; a more modern term is Phylliodes tumour (PT). The behavior of PT constitutes a spectrum from benign and locally recurrent to malignant and metastatic. Other classifications have also been suggested<sup>1-3</sup>. Malignancy is determined by characteristics of the stroma. MPT constitutes between 6% and 30% of all PT<sup>4-10</sup>.

Malignant change of the epithelium in PT is a rare occurrence, the most frequent is infiltrating carcinoma of various types but lobular carcinoma in situ and ductal carcinoma in situ are much rarer and adenocarcinoma may also co-exist. Stromal differentiation has also been reported<sup>4,11-13</sup>.

The metastatic spread of MPT is mainly haematogenous to the lungs while lymphatic involvement is infrequent<sup>2</sup>. Metastasis to the interpectoral lymph node (Rotter's) was reported first in Japan<sup>14</sup>. Metastases to the bone and liver were also reported<sup>15</sup>.

The surgical management of MPT varies widely. Wide local excision (WLE) (at least 2 cm of histologically normal breast tissue margin and/or a clearly defined fascial boundary) remains the treatment of choice. Radical or modified radical mastectomy have been reported as an appropriate procedure in selected patients<sup>2,15</sup>. As lymph node metastases is rare occurrence, axillary dissection is not recommended in the absence of adenocarcinoma elements and in deep seated lesions excision must include fascia<sup>2,15</sup>. Although mastectomy is the treatment of choice in specific cases, sacrifice of the adolescent breast at the initial procedure was strongly discouraged. Hence preoperative diagnosis is important in planning the most appropriate type of surgery<sup>16,17</sup>.

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Breast conserving surgery, subcutaneous mastectomy and breast implants in management of MPT have been reported, and autologous tissue breast reconstruction following excision of MPT was also used<sup>18-26</sup>.

Although there is no known role for chemotherapy in the adjuvant setting, radiotherapy may be useful in selected cases<sup>5,17</sup>.

Recurrence rates following local excision of MPT ranges between 6% and 40%<sup>5,7,8</sup> and it may indicate development of metastases even in patients with "benign" disease). Recurrence following local and wide local excision was reported to happen between 5 and 237 months from the primary treatment and it was suggested that inadequate resection is the most important among other factors<sup>5,7,27-29</sup>.

#### Patient and Methods:

This study was carried out between June 1998 and June 2005. Twenty three consecutive patients with recurrent PT and 10 new patients with cytological and / or histological proof of MPT were enrolled. Two of the new patients had bilateral breast hypertrophy; these had wide local excision of the tumor via reduction mammoplasty pattern and had reduction of the contra lateral breast. Seven had wide local excision and immediate reconstruction using Latisimus Dorsi (LD) muscle flap and one had subcutaneous mastectomy and silicon implant.

All patients with recurrent PT had subcutaneous mastectomy, two-centimeter margin excision of the previous scar and all had immediate breast reconstruction with LD.

Patients were followed up over a period of sixteen to eighty eight months. The data of all patients were entered and analyzed using Excel computer program.

#### Results:

Types of operation for all the patients were show in table 1. The ages of patients ranged from 15 to 40 with a mean of 24.06 years. 93% of the patients were less than 30 years old (table 2). Out of the twenty three patients with recurrent disease two had second recurrence and their histology revealed MPT. However, in nine of them the original tumour was benign PT. The time between primary surgery and recurrence ranged between five and twenty three months. In patients with recurrent disease the previous local excision

was for what was thought clinically to be fibroadenoma (n=9), giant fibroadenoma (n=6) and histologically proven MPT(n=8). Of the patients presenting for the first time (n = 10), seven had cytological evidence of MPT, three had histological evidence of MPT and one of them had co-existing ductal carcinoma in situ.

Table 1 shows different procedures

| Procedure                    | Number | %    |
|------------------------------|--------|------|
| WLE to Quadrectomy           | 7      | 21.2 |
| Subcutaneous Mastectomy      | 24     | 72.8 |
| Mammoplasty pattern excision | 2      | 6    |

Table 2 Age Distribution of patients

| Age         | %    |
|-------------|------|
| 15-20 years | 21 % |
| 21-30 years | 72%  |
| 31-40 years | 7%   |

Of the twenty-three patients with recurrent tumors who had subcutaneous mastectomy and wide scar excision, ten were reconstructed with LD myocutaneous flap (Fig 1) and thirteen with muscle only (Fig 2).



A

B

Figure 1A show a patient presenting with recurrent MPT following local excision (Supra-areolar). Figure 1B shows the same patient following wide excision of the scar, subcutaneous mastectomy and breast reconstruction with LD myocutaneous flap.



Figure 2 shows a patient with recurrent MPT of right breast (Left). The picture on the right shows the same patient following subcutaneous mastectomy and LD myocutaneous flap reconstruction of the breast.

The remaining ten patients who presented for the first time with breast lump, seven had wide local excision and LD muscle reconstruction to correct the deformity, two had reduction mammoplasty pattern wide excision (fig 3A & B) and one had subcutaneous mastectomy and silicon implant as the tumor was occupying most of the breast



3A

B

Figures 3A and 3B Shows a patient with MPT before and after reduction mammoplasty pattern wide excision.

The size of the tumors ranged from five to fifteen centimeter in diameter and the resection margin ranged from five centimeters in the wide local excision group to twelve centimeter in patients who had subcutaneous mastectomy (mean 7.9 centimeter).

During the period of the follow up, which ranged between twenty- two and twenty- four months, local recurrence was detected in one patient who presented originally with recurrent disease (3.03%). None of the patients developed distant metastasis or regional lymphadenopathy.

#### Discussion:

MPT is rare and surgery is the mainstay of its management. Breast conserving and local excision have been widely practiced and the recurrence reported in the literature following

local excision in MPT was up to 40%. It has also been suggested that free- resection margin reduces chances of recurrence and positive resection margins are associated with higher chances of local recurrence<sup>5,7,8,26,30,31</sup>. Mastectomy on one hand has been discouraged in young patients and sacrifice of nipple/areola complex and skin envelope on the other hand is not relevant in this condition especially in young patients and adequate resection is the most important factor in controlling this disease<sup>2, 5, 15,16, 26</sup>.

In this study, the ages of patients have ranged between 15 and 40 years with an average of 24.06 years (Table 2). This is strikingly different from the literature where the average age ranged between 38 and 52 years<sup>5,7- 9,28, 32</sup>. This is difficult to explain but it makes mastectomy a more difficult option in younger population of patients . In this study 23 patients (75 %) had recurrent disease, this was attributed to the diagnosis of fibroadenoma in 15 and to local excision of phyllodes tumor in the rest .This matches the explanation reported in the literature and stresses the difficulty in differentiation of PT from fibroadenoma<sup>5,33</sup>.

All patients with recurrent MPT had subcutaneous mastectomy and wide excision of the previous scar and all new patients with MPT had wide local excision up to quadrantectomy depending on the size of the tumor in relation to the breast size. Resection margins have ranged between five and 12 centimeter and none of the tumors was incompletely excised.

Immediate reconstruction of the breast was performed in thirty patients using LD flap and silicon implant in one and two patients had reduction mammoplasty pattern wide resection of the tumor.

The literature on subcutaneous mastectomy and breast reconstruction in the management of PT is scarce, few papers have been published addressing a small number of patients and to our knowledge their outcome has not been substantiated<sup>21-23</sup>.

The accessibility and reliability of LD flap in breast reconstruction in general and in PT are well documented in the literature and cannot be stressed any more<sup>20</sup>. In this study, although the number of patients is small, no distant metastasis

was have encountered during the follow up period and local recurrence was seen in only one (3.03%) patient who had subcutaneous mastectomy for recurrent MPT. This is much less when compared with the reports in the literature where recurrence ranged between 6% and 40 % following local and wide local excision but there are few reports on immediate breast reconstruction following excision of MPT<sup>5-7, 26-28, 32</sup>.

Excision and immediate reconstruction in management of MPT allows wider clearance as deformity is no longer a concern. It was suggested that this approach in the management of MPT offers wider excision, reduces chances of recurrence, offers reconstruction and protects patients from psychosexual disturbances associate with mastectomy.

Long-term follow up of this approach in young patients will declare its effectiveness in management of MPT.

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