CASE REPORT

Recurrent phyllodes sarcoma of breast with complete chest wall invasion; a multidisciplinary approach for radical resection

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SUMMARY

Phyllodes tumour of the breast is a relatively uncommon condition, and rarely invades the chest wall. We report a case of young women who had recurrent large phyllodes tumour invading the chest wall, following mastectomy, chemotherapy and radiotherapy. A multidisciplinary approach was used for radical resection of the tumour, chest wall and reconstruction.

BACKGROUND

Phyllodes tumours are rare biphasic fibroepithelial breast neoplasm, which was first described by Johannes Muller in 1838.¹ Malignant phyllodes tumours of breast are uncommon and if not treated by wide surgical excision, recurrence rate of 20–50% have been reported in literature.² Phylloides tumour rarely invade the chest wall, a very few cases of chest wall invasion has been reported in medical literature.³

CASE PRESENTATION

A 30-years-old lady presented with history of growing painless left breast mass which rapidly increased in size during the last 3 months. Previously, in early 2010 she underwent total mastectomy for malignant phyllodes tumour (figure 1A,B), followed by 20 cycles of hypofractionated 45 Gy of radiation. She also received one cycle of chemotherapy (doxorubicin, dacarbazine) which she did not tolerated well and refused further treatment and did not show up till early 2011. Physical examination revealed 15 cm×10 cm hard non tender mass fixed to the chest wall with no palpable lymphadenopathy. CT scan of chest and upper abdomen revealed a breast mass fully invading the chest wall as shown in (figure 1C). Ultra sound guided biopsy revealed recurrent malignant phyllodes tumour.

INVESTIGATIONS

- ▶ Ultrasound-guided biopsy
- ▶ CT scan thorax

DIFFERENTIAL DIAGNOSIS

- ▶ Recurrent phyllodes tumour
- ▶ Chondrosarcoma

TREATMENT

After multidisciplinary meeting, including breast surgeon, radiation oncologist, thoracic, plastic surgeon and pathologist it was decided to proceed

for radical resection and reconstruction of the chest wall.

Elliptical incision was given around the tumour as shown in figure 2A. Radical resection of mass with full thickness of chest wall including a normal rib above and a rib below and part of sternum, with 4–5 cm free margins including pericardial fat, was excised enblock (figure 2B).

Chest wall defect was reconstructed using a methyl methacrylate cement marlex mesh sandwich using 2/0 prolene as showed in figure 2C, soft tissue coverage was provided by latissimus dorsi myocutaneous flap (figure 2D). Postoperative recovery was uneventful.

Histopathological examination of the mastectomy showed fibroepithelial tumour formed of clefts lined by bland epithelium and a cellular stroma, stromal cells were spindle-shaped featuring elongated nuclei showing high mitotic activity with 12 mitoses/10 high-power fields. Epithelial components showed florid hyperplasia diagnosis was malignant phyllodes tumour with posterior tumour-free margin was 8 mm. Histopathology of the chest wall mass was consistent with phyllodes tumour of the breast. And all margins were free of tumour.

OUTCOME AND FOLLOW-UP

After the complete chest wall resection and reconstruction she made uneventful recovery. A health education and social worker team were involved for her regular future follow-up as an outpatient. Fourteen months after surgery, a follow-up CT scan of chest showed no signs of recurrence (figure 1D).

DISCUSSION

Phyllodes tumour represents less than 1% of all female breast tumours with incidence of 2.1/million. They are classified as benign, intermediate and malignant depending on the differentiation of the stromal component, mitotic activity and tumour borders.⁴

Histological diagnosis can be achieved with core tissue biopsy which has high yield as compared with fine needle aspiration which has poor result.⁵

Surgery is the gold-standard treatment of phyllodes tumour. Mastectomy is recommended for tumours greater than 10 cm in diameter or less than 10 cm in patient with small breasts. Routine axillary exploration is not recommended in phyllodes tumour, because axillary nodes are involved in only 10% of the cases.⁵ However, with the

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Figure 1 (A) Premastectomy CT Thorax showing large phyllodes tumour, (B) postmastectomy CT thorax (C) 1 year postmastectomy showing recurrence of the tumour, (D) 14 follow-up after surgical resection and reconstruction showing methacrylate cement marlex mesh sandwich.

breast conserving surgery and inadequate local excision recurrence rate of 8.2% has been reported.^{6 7} Wide excisions with negative margins can provide a good local control 87.8%. After a local excision the incidence of positive resection margins is 18.3%. Recurrence rate of 4% has been seen in patients with negative surgical resection margins after wide excision.⁸ After total mastectomy the local recurrence of the phyllodes tumour is rare. It has been reported in few patients after total mastectomy; hence the disease can only be controlled by full thickness chest wall resection and reconstruction. Reinfuss *et al* reported 2.4% invasion of pectoralis major muscle and an extended chest wall resection was recommended. The tumour should be

completely excised with at least 2–3 cm free margins to achieve long-term survival. Azzopardi and Salvalori *et al* described a histological criteria which showed that type of histology was an independent prognostic factor for 5 years survival of benign, borderline and malignant tumours being 95.7%, 73.7% and 61.1%, respectively.⁹ Metastasis occurs in 4% of phyllodes tumour as compared to 25–31% malignant breast tumours. The role of adjuvant chemoradiotherapy is not clear, though some trials suggest that it improves disease-free survival.¹⁰ Radical full-thickness resection of chest wall and reconstruction for recurrent phyllodes tumour invading the chest wall has rarely been reported in medical literature.^{11 12}

Figure 2 (A) Surgical incision marked around the tumour, (B) tumour excised, (C) chest wall defect reconstructed, arrow indicating the area to be covered by the myocutaneous flap, (D) myocutaneous latissimus dorsi flap used to provide soft tissue cover.

Learning points

- For recurrent phyllodes tumour invading the chest wall after mastectomy, chemotherapy and radiotherapy, we recommend a wide excision of full thickness of chest wall including a healthy rib above and below and part of lower sternum followed by coverage of the defect by myocutaneous flap to achieve curative resection. Patient health education is very important for a regular follow-up.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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