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Case Report

Case Report of Phyllodes Tumor in Early Pregnancy with Impact of Review a Molecular and Genetic Update

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ABSTRACT

Introduction: Phyllodes tumors (PT) are biphasic tumor consisting of epithelial and stromal components. It is rare fibro epithelium tumor which is 0.3–1% of all breast tumors. According to the World Health Organization, they are benign, borderline, and malignant, which are based on several histological features and grading of the tumor. The exact etiology of PT and its relation to fibroadenoma is still unclear. A 30-year-old female, 20 weeks of gestation, presented with painless right side breast lump for 4 months and involved all four quadrant of the breast. Her fine-needle aspiration cytology showed benign PT; then, we planned for lumpectomy with 1 cm away from the normal tissue. Local recurrences are associated with mitosis, tumor border, surgical margin, and type of surgery while age and tumor size are not associated with local risk. Some author had found molecular alteration in allelic loss in TP53 and D22S264 may be responsible for progression of FA to PT. I would like to say that a gestational PT even tumor has large we must consider for breast preserving surgery to maintained natural feeding as well as feeling of motherhood.

Key words: Cystosarcoma phyllodes, Huge fibroadenoma, Lactational tumor

INTRODUCTION

Phyllodes tumors (PT) are biphasic tumor consisting of epithelial and stromal components. It is rare fibroepthelium tumor which is 0.3–1% of all breast tumors.[1]

This tumors was first described in 1774 as giant type of fibroadenoma and named: as "cystocarcoma phyllodses" by Johannes Muller, in 1838, while the World Health Organization (WHO) has adopted the term "PT" in 1982 as classification of breast tumors.[2,3] It is derived from "Greek words" sarcoma it denote flesh appearance, while phyllon means leaf like. The classification of PTs proposed by the W.H.O. into benign, borderline and malignant which are based on histological features of stromal cellularity, nuclear atypia, mitotic activity, stromal over growth, and tumor margin appearance.[2]

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The incidence of benign PT has 34.5% of benign, 24.1% of borderline, and 39.7% malignant PT and mean tumor size was 3.5 cm in benign PT, 5.6 cm borderline, and 4.6 cm in malignant tumor.[4] The exact etiology PTs and its relation to fibroadenoma are still unclear. Noguchi *et al.* showed[5] that fibroadenoma has polyclonal elements behave like as hyperplastic rather than neoplastic lesion, whereas PT made up a both monoclonal and polycolonal cells components due to this it content both epithelial and stromal component it behave like neoplasma of the stromal cells.

They have suggested local recurrence (LR) and progression of the tumor supported by clonality of PT, while somatic mutation occurred due to monoclonal analysis and its histological indistinguishable from the polyclonal elements.

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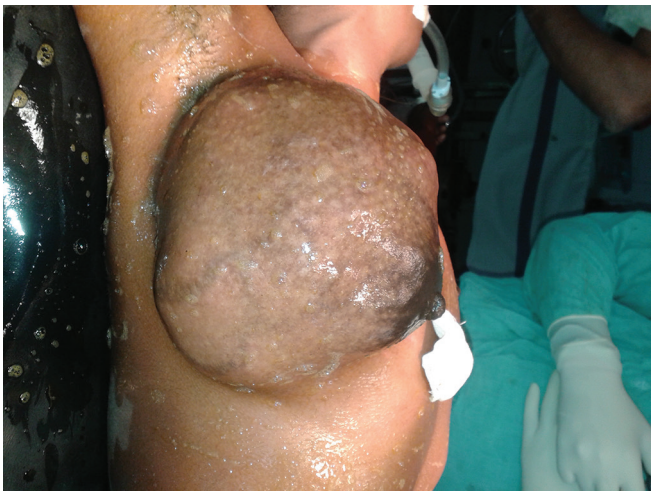
They also revealed that estrogen activity increase in trauma, pregnancy, and lactation so stromal overgrowth occurring in PT.

CASE STUDY

A 30-year-old female, 20 week of gestation, presented with painless right side breast lump for the past 4 months which was rapidly growing. On physical examination, she had massive swelling which involved four quadrant of the breast about 10 × 10 cm. size, boselated surface, well defined mobile, and cystic consistency with nipple areola complex-shifted medially and down ward. There was dilated vein over the lump and skin was free from underlying lump, as well as pinched out all over the lump. There was no axillary lymphadenopathy. Now her personal history, she attained menarche at 14 year of age, she has one miscarriage and one alive child. There was no history of trauma, previous breast disease, and no history of breast cancer of first grade relative in her family.



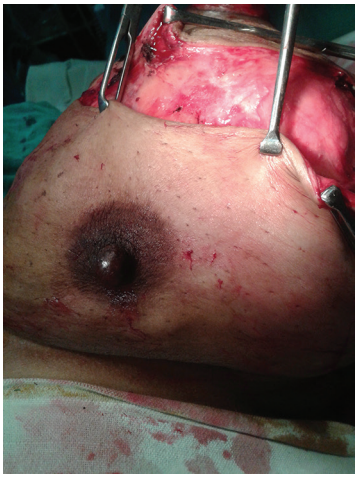
Preoperative picture of case study

We did work up of the patients an ultrasonography of the right breast reveled a large well define solid heteroecohic predominantly hypoechic lobulation of mass lesion. Fine-needle aspiration cytology showed fibro epithelial lesion suggestive of benign PT.

Hence, we plan for lumpectomy that consist of excision of lump through transverse elliptical incision was given over the upper outer and inner quadrant of breast which excised whole of the lump 1 cm away from the normal tissue, nipple areola complex had not involved, and its vascularity intact so we had not removed.

The patient had uneventful recovery and comfortable after the surgery. She was discharged on 10th post-operative day with advised for proper follow-up.

Her delivery was normal vaginal delivery. She had fed both side of breast her baby after delivery. There was no recurrence after 5 years.



Intraoperative picture of case study

DISCUSSION

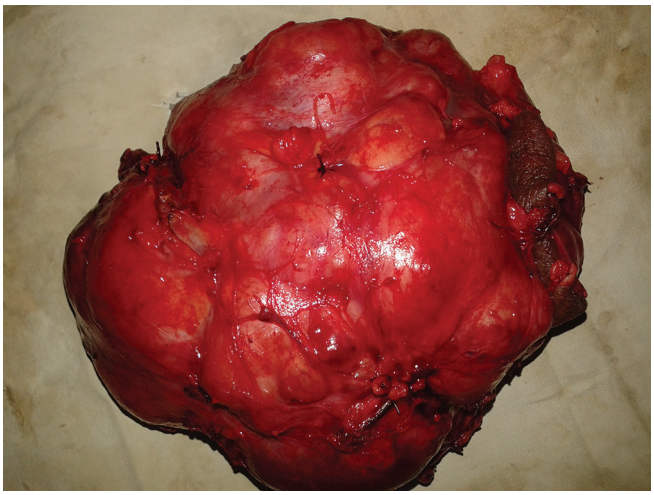
PT usually presents as a breast mass which is painless and rapidly growing tumor. The treatment of surgical excision or a wide local excision of tumor with adequate margin of at least 1 cm is necessary for benign PT, while radiotherapy and chemotherapy are controversial, but clinical and radiological follow-up is mandatory.[4] Grossly, tumor showed multinodular mass with relatively smooth margin, grayish on cut surface, with small cystic degeneration.

Histopathologically shown as benign stromal proliferation, this is lined by cubodial epithelium with no atypia and <5 mitosis/10 HPF. Benign PTs are well circumscribed, atypia and heterogeneous elements were not observed.

Alipour *et al.*[4] did systemic review and polled 43 cases with gestational PTs of these 37 patients had unilateral while six patients at bilateral gestational PT. They also review method of surgery in benign PT of this they found that seven cases were operated for mastectomy and five operated for lumpectomy and follow-up of the patient minimum 27 months and maximum 5 years. They were found no recurrence and also we have not found in our case. They also reviewed USG findings and revealed most of the tumor has either heteroechoic and hyperechoic and lobulation of mass lesion. The same USG finding occurred in our case.

Lu *et al.*[5] They had also reviewed a cause of LR rate and were found 8% for benign, 13% for border line, and 18% for malignant PT. The risk factor for LR was mitoses,

tumor border, stromal cellularity, stromal atypia, stromal over growth, tumor necrosis, type of surgery, and surgical margin status may be risk factor for LR in PT, while age and tumor size not associated with local risk. So same in our patients, she was a huge tumor size.



Gross pathology of case study

Advancement of genomic land scape and sequencing provides insight in to molecular pathogenesis/histogenetic relation between fibroadenoma and PT with its tumor grading which helps to improve diagnostic accuracy. Hence, we have provided an update overview of the some molecular alteration found in PT. Nowadays, many literature are available according to Hodges *et al*.[6] They suggested that fibroadenoma and PT are clonally related and allelic loss TP53 and D22S264 may be responsible for progression of FA to PT. The most recent genomic sequencing studies have been identified frequent MED12 early somatic mutation in fibroadenoma and phyllodes because they have involved same origin and genetic etiology and mutation found 59–67% in fibroadenoma and 45–60% in PTs and 50–70% in uterine leiomyomas.[7]

CONCLUSION

New genomic landscape sequencing would be advantage for planning of surgery, especially in gestational PT. The patient has to be maintained her motherhood feeling as well as natural feeding of child after delivery of baby, for which we need further study that enrolled large series of gestational PT.

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