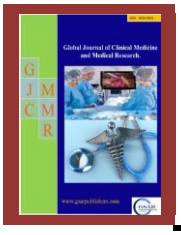

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Malignant phyllodes tumor in a 14-year-old girl.

By

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Abstract

Phyllodes tumors are rare fibroepithelial breast neoplasms with a characteristic leaf-like growth pattern observed under the microscope.It represents 0.3%–0.5% of all breast tumors, and in adolescents it is ultra rare, accounting for less than 4% of cases. They originate from both stromal and epithelial tissues and are classified as benign, borderline, or malignant based on histopathological features. In adolescents, phyllodes tumors usually present as rapidly growing, painless breast masses, often mistaken for juvenile fibro adenomas due to their similar clinical appearance. Although most cases in teenagers are benign, malignant forms can occur and have the potential to metastasize, most commonly to the lungs. Diagnosis is challenging because of the tumor's rarity in this age group and its resemblance to other benign breast lesions. Whether its appearance in teen age girls is associated with environmental pollution in the vicinity of oil excavation sites or genetic causes needs evaluation, if further similar cases present in the same or similar areas. Surgical excision with wide margins remains the primary treatment strategy to minimize recurrence risk and ensure optimal outcomes.

Introduction

Phylloid tumors, or phyllodes tumors, were first described in 1838 by Johannes Müller, a German pathologist, who referred to them as "cystosarcoma phyllodes" due to their sarcoma-like appearance and cystic spaces. The term "phyllodes" comes from the Greek word meaning "leaf-like," describing the tumor's characteristic leaf-like projections seen under the microscope [8]. Phyllodes tumors are rare breast neoplasms that account for 0.3%–0.5% of all breast tumors [1]. In adolescents, however, phyllodes tumors are ultra-rare, making up less than 4% of cases in this [3.] These tumors originate from both stromal and epithelial tissues and are characterized by a distinct leaf-like growth pattern [2]. Based on histopathological features, phyllodes tumors are classified as benign, borderline, or malignant [2]. They most commonly occur in women between the ages of 35 and 55. When they do arise in adolescents, they are typically benign. Despite their rarity in younger patients, phyllodes tumors can present similarly to those in adults, manifesting as rapidly growing, painless breast masses [4]. Due to their infrequency in teenagers, diagnosing these tumors can be challenging, and they are sometimes mistaken for more common juvenile fibroadenomas [5]. While benign phyllodes tumors are less aggressive, malignant variants have the potential to metastasize, most commonly to the lungs [6].The exact cause of malignant phyllodes tumors is unknown, but genetic mutations, hormonal factors, prior radiation exposure and a history of benign breast conditions like fibroadenomas may contribute to their development[3]. There is no strong evidence linking specific environmental factors to the development of malignant phyllodes tumors. While general environmental influences like exposure to radiation may slightly increase risk[3]. Immunohistochemistry (IHC) in malignant phyllodes tumors include Ki-67,p53,CD34,Vimentin , Hormone receptors(ER/PR) and alpha-smooth muscle actin[10] .Surgical excision with wide margins is the primary treatment to minimize the risk of recurrence [7]. Radiation therapy plays a limited but important role in the management of malignant phyllodes tumors of the breast. Radiation therapy for malignant phyllodes tumors is mainly used as an adjuvant treatment after surgery, especially when margins are positive or for larger tumors (>5 cm) to reduce local recurrence risk. It may also be considered for non-surgical candidates or palliative care in metastatic cases, but its role is limited due to

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the rarity of the condition and preference for surgical management [9].

Case description

A 14-year-old female presented to the clinic regarding an enlarging left breast mass after operation. It started as a gradual increase lump for 6 months. It was associated with mild intermittent breast pain not related to cycle. No relieving or exacerbating factors were noted. The patient denied any redness or thickening, nipple discharge, nipple inversion, or any noticeable changes on the contralateral breast. She denied additional symptoms, including bone pain, rib pain, headache, and shortness of breath, and was otherwise in her usual state of health. Her family history was negative for any breast tumor. The patient underwent menarche at the age of 12. There was no history of use of exogenous hormones to date. She did left breast U/S showed {huge well defined complex soft tissue mass involving the majority of breast contains solid and cystic components and it contains intra lesional blood flow, suggestive of growth probably benign} after that she did FNAC of left breast relived suspicion of borderline/malignant phyllodes tumor then she did excision biopsy of mass 13x13cm sent for histopathology which confirm malignant phyllodes tumor after that Ct scan for chest was done showed everything normal depict few left side axillary lymph nodes are seen the largest measures 1cm.

A physical exam revealed a scar in the left breast with no inflammatory skin changes or nipple-areolar complex abnormalities. There was no axillary, infra clavicular, or supraclavicular lymphadenopathy appreciated on exam.

Conclusion

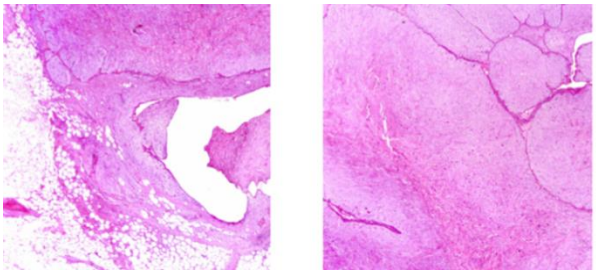
Phyllodes in this teen age population group is very common. She originates from a highly polluted city which has oil excavation sites nearby. The uncommon age of presentation may be related to genetical or environmental factors for which subsequent studies should be done if further cases present with similar tumors.

Disclosure

This study was conducted at Al-Thaqalyn Hospital Cancer Institute, Basrah, Iraq.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.



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