Pleomorphic adenoma of the breast

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Abstract

Pleomorphic adenoma, a common salivary gland tumor, is a rare benign breast tumor. It doesn't have specific features and its diagnosis can be made on the final histopathological examination. There have been reported few cases of malignant transformation and many recurrences, therefore it is required an adequate excision of this tumor with clear margins. We present the case of a woman of 47 years old, who was admitted in our Department for a right perimamelonar lump, with uncertain imaging features. A right mammary segmentectomy was performed and the routine histopathological and immunohistochemical examination led to the diagnosis of pleomorphic adenoma of the breast.

Keywords: *pleomorphic adenoma of the breast, rare benign tumor*

Introduction

Pleomorphic adenoma (PA) or benign mixed tumor (myoepithelial and epithelial cells embedded in chondroid stroma) [1] is a common salivary gland tumor, but a rare tumor type of the breast. Other uncommon sites of this kind of tumor are in the skin (chondroid syringoma), nasal septum, palate, larynx, paranasal sinuses and vulva [2, 3].

Clinically, PA presents as a palpable juxta-areolar breast lump which is difficult to differentiate from cancer [4]. The diagnosis of this type of tumor is made post operatively, on the final histopathological examination, because it has nonspecific features on ultrasound breast imaging and mammography.

PA has a pseudopod like extension into adjacent tissue and this is why it should be performed an adequate excision of the tumor with clear margins, so there would be no recurrence [4].

Three cases of carcinoma ex-pleomorphic adenoma of the breast associated with adjacent areas of pleomorphic adenoma, were reported by Hayes et al. [5], suggesting the potential of malignant transformation, but metastasis associated with the PA of the breast has not been reported, so far [4, 5].

Case report

We report the case of a woman of 47 years old, known with paroxysmal supraventricular tachycardia, atrial and ventricular extrasystoles, that presented to 1st Department of Surgery of the Regional Institute of Oncology Iasi, for a right breast tumor with an uncertain diagnosis on the ultrasound breast imaging and mammography.

By admission in our clinic, the patient had no significant biological anomalies. The measured tumor marker of the breast, CA15.3

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was 28.2 U/ML and a chest X-ray showed no progressive lesions at the pulmonary and pleural level.

The ultrasound examination (Figure 1) reveals in the right breast, at the union of both exterior quadrants and at 3-4 cm away from the nipple, a hypoechoic and heterogeneous mass (with hyper and anechoic areas), oval shaped and measuring 16x9x10 mm, lobulated, without Doppler Signal and with no visible right axillary adenopathy.

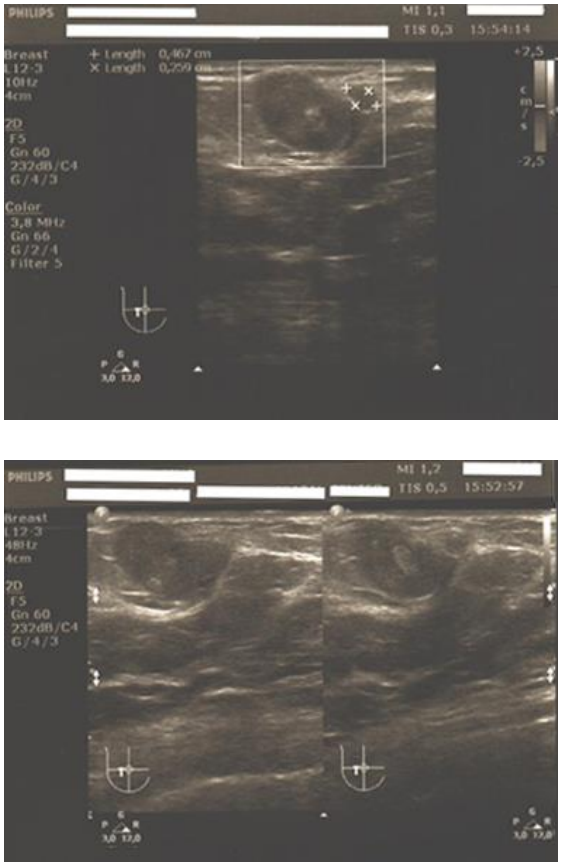

Fig. 1. Breast ultrasound: extensive pneumatosis, railroad tracks-like (arrows) and dilated bowel loops. No signs of pneumoperitoneum.

The mammography of the right breast showed an external perinipple nodular opacity of 15/10 mm, with partially net outline, with several amorphous calcifications (Figure 2).

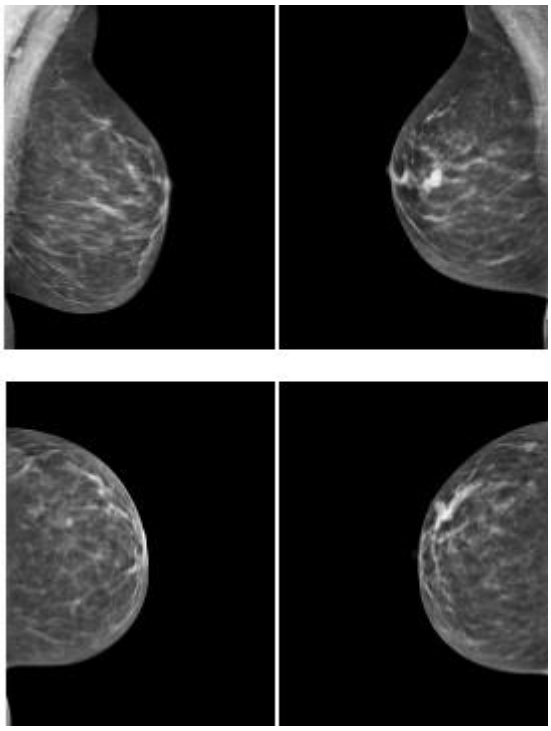

Fig. 2. The right breast mammography revealed a perinipple nodular opacity of 15x10 mm with partially net outline and several amorphous calcifications.

We performed a right mammary segmentectomy (at patient's request) and sent the specimen for intraoperative frozen section diagnosis, which revealed an intracystic papillary carcinoma. The surgical specimen was subsequently submitted for paraffin embedding protocol.

The postoperative course of the patient was uneventful.

The histopathological examination (Figures 3a and 3b) revealed a well differentiated tumor proliferation harboring a reduced cytonuclear atypia, with glandular, cribriform and trabecular architecture, and no obvious tumor necrosis. The immunohistochemical tests (Figures 4a-4e) confirmed both ductal and myoepithelial cells, hence the final histopathological diagnosis was pleomorphic adenoma. There were no extensions in the surrounding tissue and also no necrosis or lympho-vascular invasion were identified.

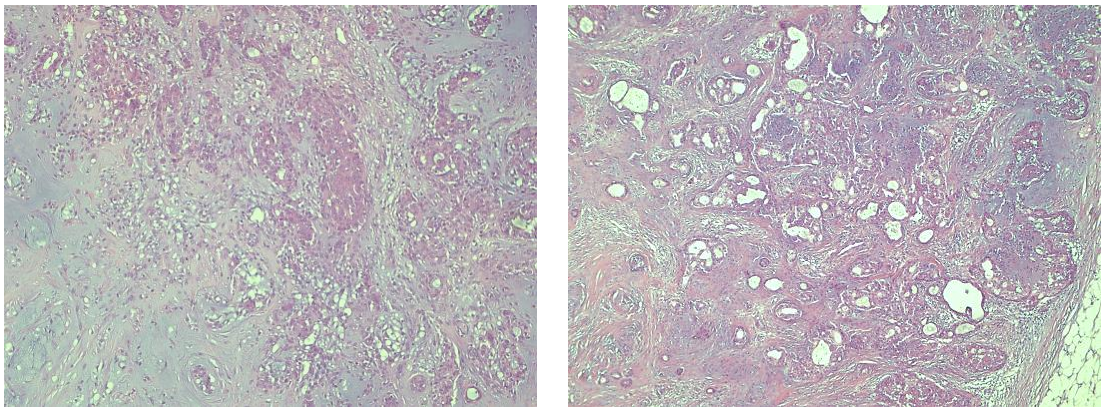

Fig. 3. Glandular, cribriform, and trabecular pattern of the tumor a) HE, x50 and b) HE, x100.

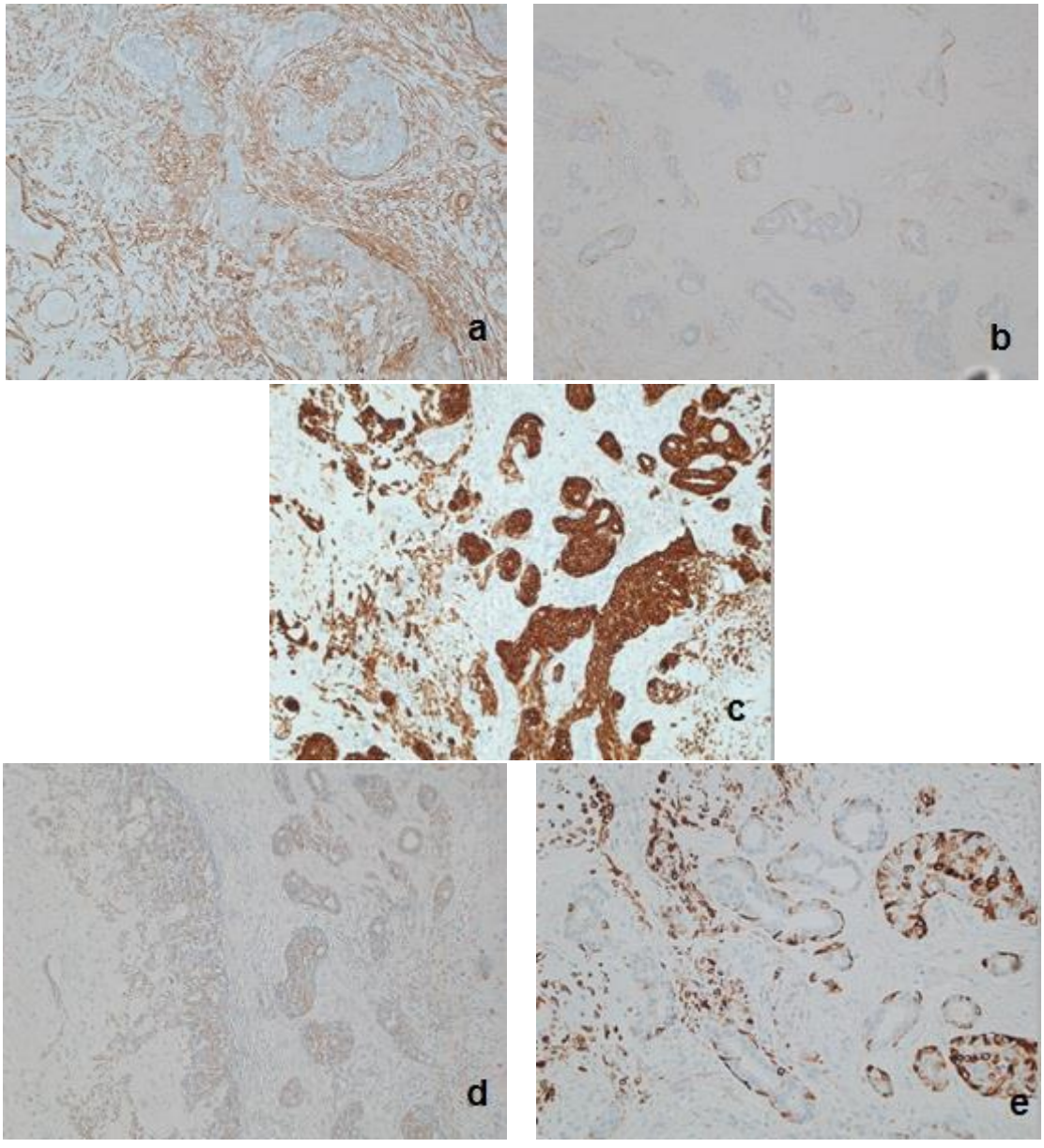

Fig. 4. Immunohistochemical expressions of the tumor cells for: a) Ab anti-H-caldesmon, x100; b) Ab anti-Smooth Muscle Actin, x100; c) Ab anti-CK7, x100; d) Ab anti-S100, x100; e) Ab anti-GFAP, x200.

Discussions

Pleomorphic adenoma is a rare tumor of the breast. It presents as a palpable juxta-areolar breast mass and it has nonspecific features on imaging examination. The final diagnosis is made on the histopathological findings.

There are many recurrences reported and few malignancies, based on the behavior of this kind of tumor and on its pseudopod like extension in the adjacent tissue. It is necessary to take into account the excision of the tumor with adequate margins, avoiding the radical mastectomy, because pleomorphic adenoma is not a malignant tumor. However, it is quite difficult to differentiate a pleomorphic adenoma from breast carcinoma using only the imaging findings that is why the final diagnosis is given by the histopathological examination.

Some papers suggest that the juxta-areolar location of the tumor and the circumscription could be the result of a large breast duct origin of the tumor [6].

So far, we could not find any reported metastasis of pleomorphic adenoma of the breast [2].

The main recommended treatment in the literature for PA is the excision of the tumor with clear margins, but there are also 3 cases of inevitable mastectomy reported, as far as we know [7].

Based on the histopathological findings (small tumor size, well defined, with reduced nuclear atypia, without obvious tumor necrosis), there are few differential diagnosis of pleomorphic adenoma of the breast, such as: adenocarcinoma with cartilage/osseous metaplasia, stromal sarcoma, phyllodes tumor and fibroadenoma [2, 8].

There are also some diagnostic difficulties on frozen section because these tumors differentiate along epithelial and myoepithelial lines in different amounts, from case to case [9].

Even though there are less than 100 cases of pleomorphic adenoma of the breast declared, we should take into account this kind of tumor when we have a palpable juxta-areolar breast mass with uncertain imaging features. The best surgical treatment is to avoid radical mastectomy and to excise enough so there would be no recurrences or malignant transformation [10].

Conclusion

The particularity of our case consists in the differences between the imaging diagnosis that could not rule out a malignant tumor, the intraoperative frozen section diagnosis of a intracystic papillary carcinoma and the final histopathological diagnosis that revealed a pleomorphic adenoma.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Conflict of interest

The author(s) declare that they have no competing interests.

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