

MALIGNANT MYOEPITHELIOMA OF THE BREAST

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Abstract — A 41 year old woman was referred to our center because of a left breast mass lesion of about two months duration. Routine pathologic examination of the mass revealed a neoplastic tissue composed of large ovoid cells with clear cytoplasm arranged in broad sheets that were separated by thin bundles of connective tissue. Immunohistochemically tumor cells express smooth muscle actin, cytokeratin, and S100 protein. Also two axillary lymph nodes were positive for tumor involvement, hence the name malignant myoepithelioma was applied for definition. Because of rarity of this type of tumor and paucity of the reported cases worldwide, it appears to be an interesting case report. *Acta Medica Iranica* 35 (3 & 4): 90-94; 1997

Key words: Myoepithelial tumor, breast, malignant

INTRODUCTION

Myoepithelial tumors of the breast have been recognized as an entity only in the last decade. These neoplasms with mixed myoid and epithelial differentiation are very rare and few cases, about 7, were reported so far (1). They enclose a variety of lesions ranging from benign to locally invasive and recurring, to one involving regional lymph nodes. Other tumors have reported metastatizing to distant site with resultant poor outcome (2,3).

Histologically they appear either spindle shaped or as large ovoid cells, sometimes with clear cytoplasm (1,4). Immunohistochemically tumoral cells express cytokeratin, muscle specific actin and S100 protein.

Although these special stains may show mixed differentiation in many breast neoplasms, (keratin indicating epithelial and actin marking myoid differentiation), it is only when smooth muscle differentiation and growth pattern are dominant over purely epithelial, the diagnosis of myoepithelioma is appropriate (1).

CASE REPORT

A 41 year old woman, was referred to cancer institute because of a left breast mass lesion, of about two months duration. After lumpectomy the frozen section revealed a malignant neoplasm, chiefly composed of ovoid cells with abundant clear cytoplasm. A modified radical mastectomy was then performed and the specimen was further submitted examination.

Gross Findings

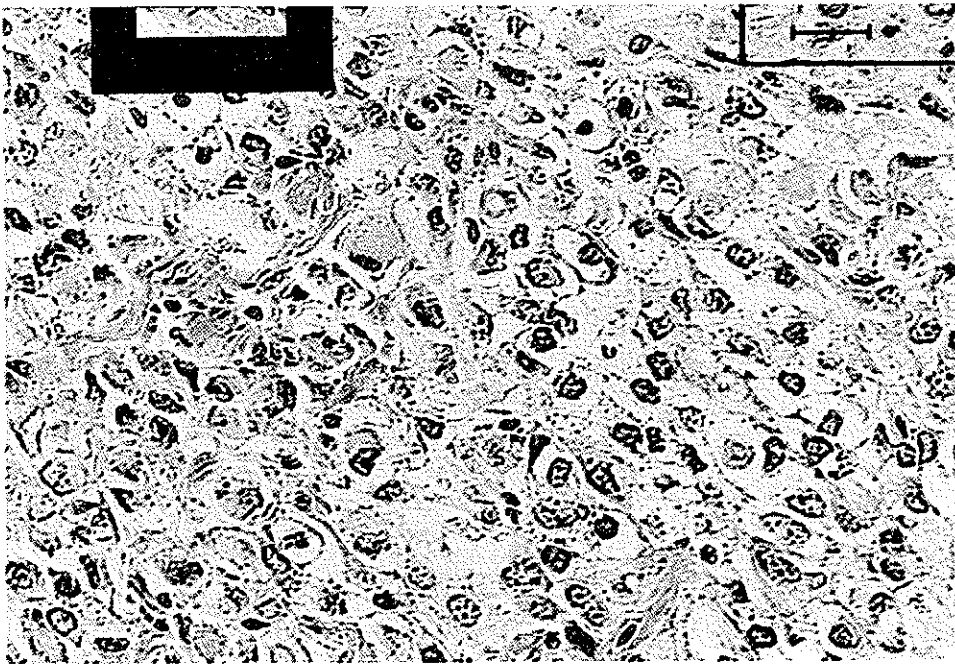
The specimen was first submitted for frozen section after lumpectomy and consisted of a 3 cm diameter nodule surrounded by breast tissue with indistinct borders and solid, cream cut surface that had a soft consistency. After modified radical mastectomy, dissection of axillary fat pad revealed 11 lymph nodes with maximal diameter of 2 cm.

Microscopic Examination

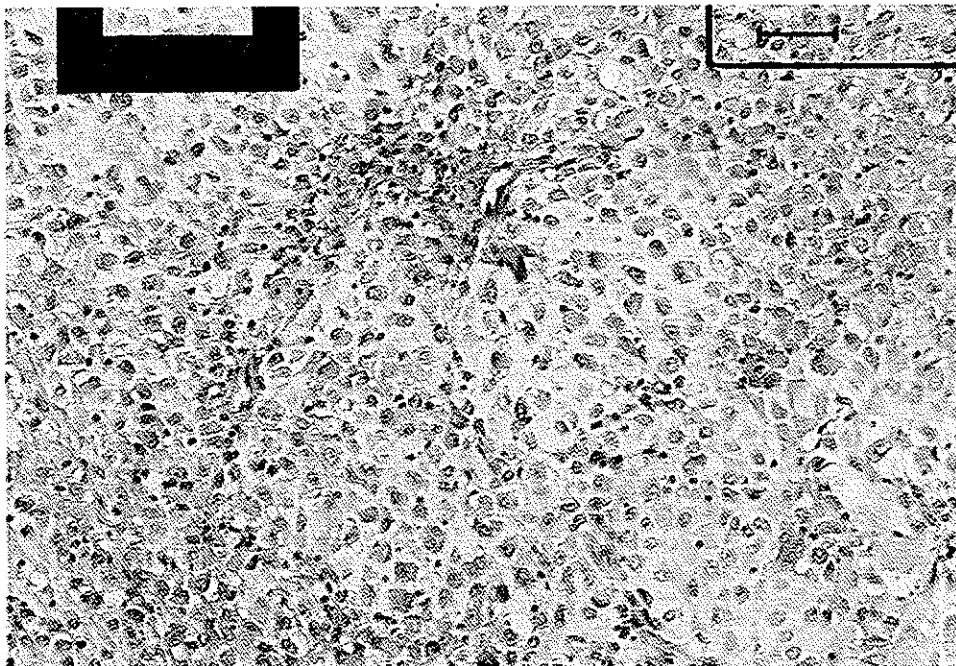
After routine processing of the specimen, several H and E stained slides were prepared, which revealed breast tissue with infiltration by a tumor composed of broad sheets of ovoid cells with abundant clear cytoplasm. The nuclei were large with prominent nucleoli. Somewhere they presume plasmacytoid appearance (Fig. 1a,b).

Necrosis and moderate mitosis were found. The same tumor was shown to infiltrate 2 axillary lymph nodes (Fig. 2).

Immunohistochemical findings were as follows: Cytokeratin stain (Monoclonal Mouse Antihuman MNF 116, DAKO, Denmark) (Fig. 3); Actin, Muscle Specific (Monoclonal Mouse Antirabbit, 1 A 4, DAKO, Denmark) (Fig. 4); S100 Protein, (Rabbit Anticow, Z0311, DAKO, Denmark) (Fig. 5), which were all positive. Electron Microscopic examination was omitted because of technical shortcomings.



(a)



(b)

Fig. 1a,b. Malignant myoepithelioma of the breast, sheets of neoplastic cells with abundant clear cytoplasm

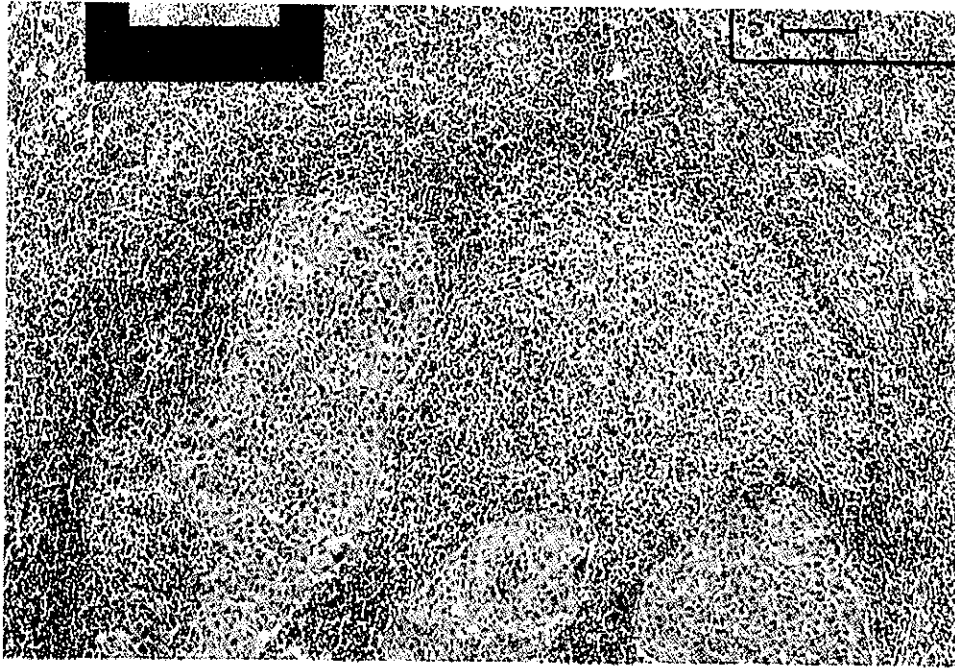


Fig. 2. Metastasis of malignant myoepithelioma in axillary lymph node

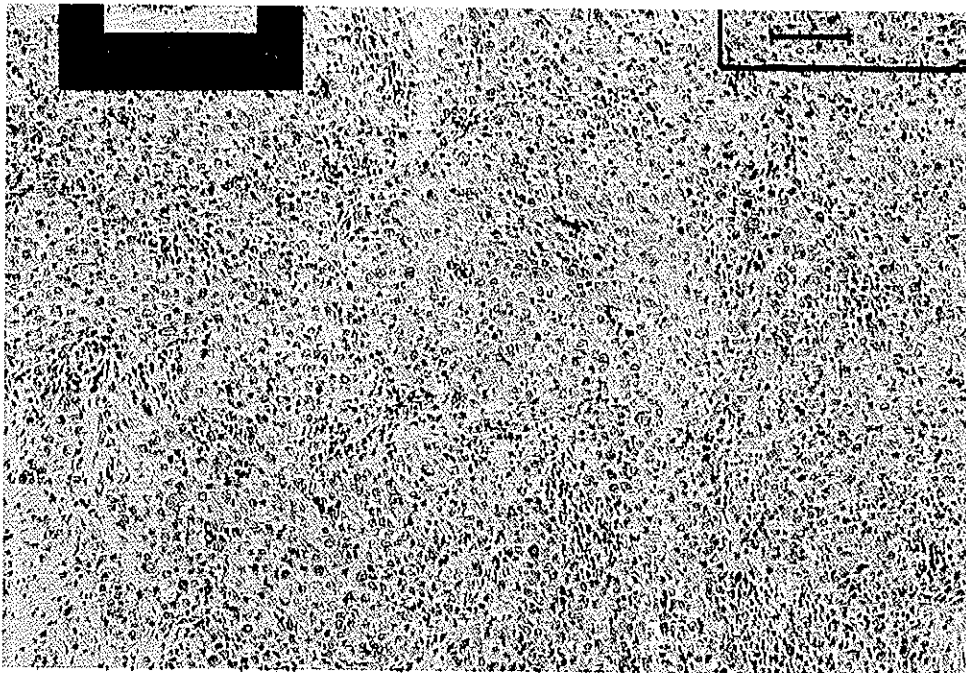


Fig. 3. Immunohistochemical stain for cytokeratin showing positive reaction of tumor cell

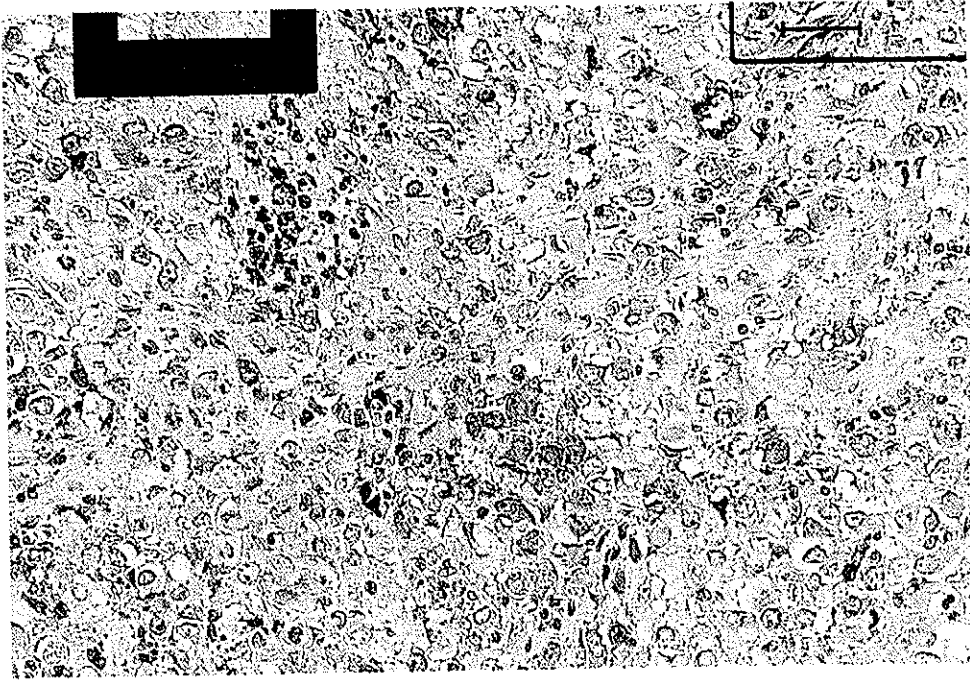


Fig. 4. Positive immunoreactivity of tumor cells for smooth muscle actin

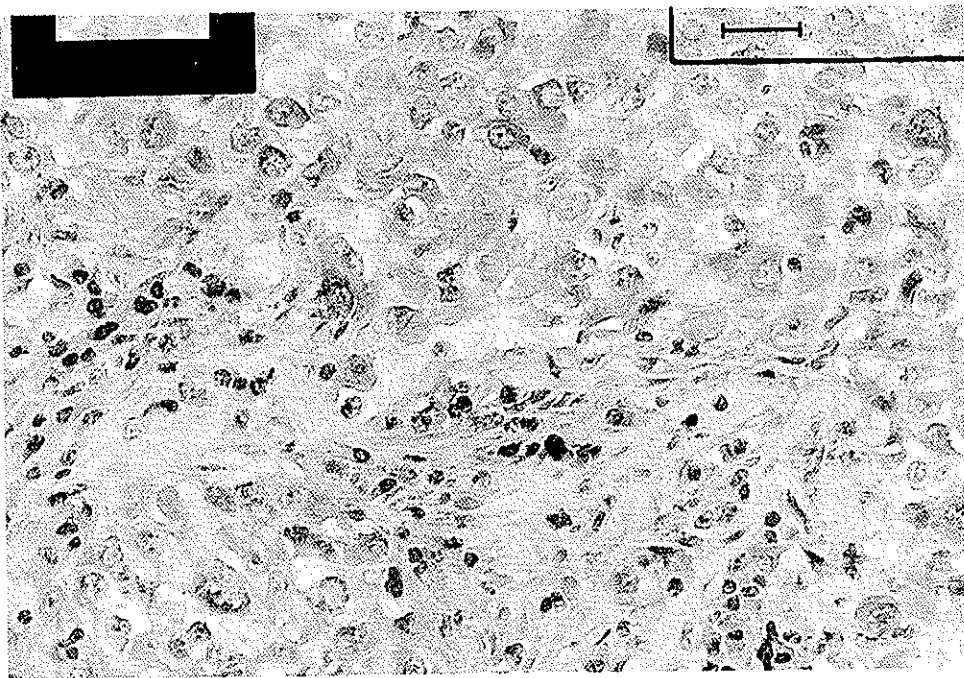


Fig. 5. Positive immunoreactivity of tumor cells for S100 protein

DISCUSSION

We confronted with a left breast tumor in a 41 year old woman, that was composed solely of sheets of large ovoid clear cells with immunohistochemical characteristics of both myoid and epithelial cells. Myoepithelial lesions of the breast are rare and according to Tavassoli these lesions are classified into three major groups (6).

- Myoepitheliosis
- Adenomyoepithelioma, (7) and
- Myoepithelial carcinoma

In many reports malignant myoepithelioma appears as haphazard proliferation of spindle cells (1,8) which display atypia and readily apparent mitotic figures malignant myoepithelioma consisted of large ovoid cells with clear cytoplasm are also mentioned in few reports (1,4). Immunohistochemically these tumors express cytokeratin, muscle specific actin, and S100 protein. Because of rarity of this tumor, broad based studies have not yet been performed, thus prognosis and clinical course of these neoplasms are as yet obscure (9). Further studies need to reveal the mysteries pertaining to these types of neoplasms.

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