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# The first case of acinic cell carcinoma of the breast within a fibroadenoma: Case report

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ABSTRACT

A case of acinic cell carcinoma of the breast is reported in a 26-year-old woman. She presented a lump in her right breast, that seemed to be a fibroadenoma. The open biopsy revealed a well-bordered fibroadenoma, together with a proliferation of cells characterized by serous acinar differentiation and eosinophilic cytoplasmic granules. Tumor cells stained for amylase, lysozyme, α-1-antichymotripsin, epithelial membrane antigen, S-100 protein, pan-cytokeratin, cytokeratin 7 and E-cadherin. Estrogen receptor, progesterone receptor, human epidermal growth factor receptor 2 overexpression, CD10, P63, smooth muscle actin, cytokeratin 5/6 were negative. The sentinel node was negative. 8 months after surgery she is in good clinical conditions without recurrence or metastases.



## 1. Introduction

Acinic cell carcinoma (ACC) of the breast is a rare variant of mammarian neoplasm, occurring in less than 2% of cases of breast malignancies. The common embryologic origins of breast and salivary glands as tubuloacinar exocrine glands, led to similarities in pathological processes. ACC is a typical tumor of salivary glands, nevertheless other organs could be interested (stomach, pancreas, retroperitoneum, liver, lung, lacrimal glands). It is characterized by serous acinar differentiation with zymogen-type cytoplasmic granules. Immunoreactivity for amylase, lysozyme, epithelial membrane antigen (EMA) and S-100 protein can help to differentiate ACC from conventional invasive ductal carcinoma of the breast. Ultrastructural examination discloses electron dense granules similar to those seen in parotideal acinar cells. All breast ACCs described in literature since 1996 have affected women, most frequently in their 6th decade of life, and presented as palpable nodules, measuring 2–5 cm, with the right side being more commonly affected. The prognosis of ACC of the breast appears to be good, even if both recurrences and metastases were reported [1–3].

Previous cases of ACC have been associated to microglandular adenosis, invasive or intraductal carcinoma [4–10]. We report the first case of ACC of the breast arising in a fibroadenoma.

## 2. Case report

A 26-year-old Italian woman who had a lump in her right breast was admitted to our Department for further assessment. She had discovered the mass through self-palpation and felt very anxious. She did not have a familial history of breast or other cancers, and denied any relevant comorbidity. She had had two pregnancies, without breast-feeding. Physical examination revealed a well-demarcated, hard, smooth, mobile, indolent mass at the union of lower quadrants of the breast, approximately 2.5 cm in diameter, with regular margins. The nipple and the skin overlying the mass were normal. No dimpling or palpable axillary and supraclavicular lymph nodes were detected. Results of laboratory tests were all within the reference range. According to the young age she underwent breast ultrasonography, showing a nodular hypoechoic mass, with an ill-defined margin, measuring 2.3 × 2.1 × 1.3 mm, that seemed to be a simple fibroadenoma. We suggested to remove the lump in order to better define its nature. The open biopsy was performed after local anesthesia and the sample was sent to the definitive pathologic examination for diagnosis.

Macroscopically, the specimen was a 3 × 1.6 × 1.5 mammary tissue with a 1.6 × 1.2 × 1 cm, white-pink-colored and hard-elastic

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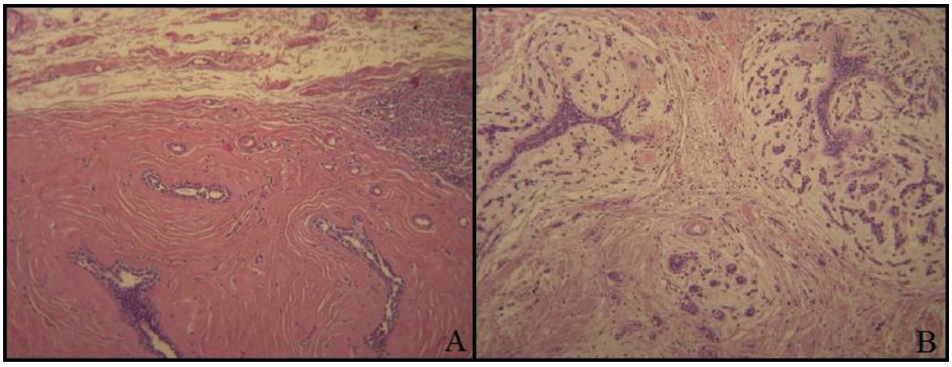


**Fig. 1.** Panoramic view showing in A. part of a well-bordered a partially capsulated fibroadenoma with fibro-sclerotic stroma and in B. a few acinic neoplastic cells growing within the fibroadenoma.

nodular lesion. Histologically it was a very particular and surprising discovery (Figs. 1 and 2). The most of the lesion was a well-bordered and partially capsulated fibroadenoma with fibro-sclerotic stroma. The near tissue showed several aspects. The first interesting evidence was a proliferation of cells characterized by serous acinar differentiation, polygonal shape, round and often eccentric nuclei with granular chromatin and small nucleoli, large, coarse and bright red cytoplasmic granules resembling zymogen granules of the acinar cells of the salivary gland. These cells were organized in an acinic-glandular or ductal-like pattern, rounded by a fine strip of collagen, or they followed an infiltrating growth pattern with solid and trabecular features in the surrounding stroma and mixoid tissue. Part of the acinic cells showed a more clear and sometimes vacuolar cytoplasm that seemed to form an acinic cell adenocarcinoma, more frequent in salivary glands. The second finding in the smaller part of the tumor was composed by less differentiated cells, organized in cords and aggregates, with atypical and pleomorphic nuclei, focal adeno-squamous metaplasia. These cells showed a wide infiltration of surrounding sclerotic stroma. In addition to these components a lymphoid infiltration of the stroma characterized the tumor, with the spreading of plasmacells. The tumor was present focally on the excision margins. Immunohistochemically, most of the tumor cells stained strongly for amylase, lysozyme, α-1-antichymotripsin (α-1-ACT), epithelial membrane antigen (EMA), S-100 protein, pan-cytokeratin, cytokeratin 7 (CK7) and E-cadherin. Estrogen receptor, progesterone receptor and human epidermal growth factor receptor 2 overexpression (HER2/neu) were negative. Myoepithelial markers

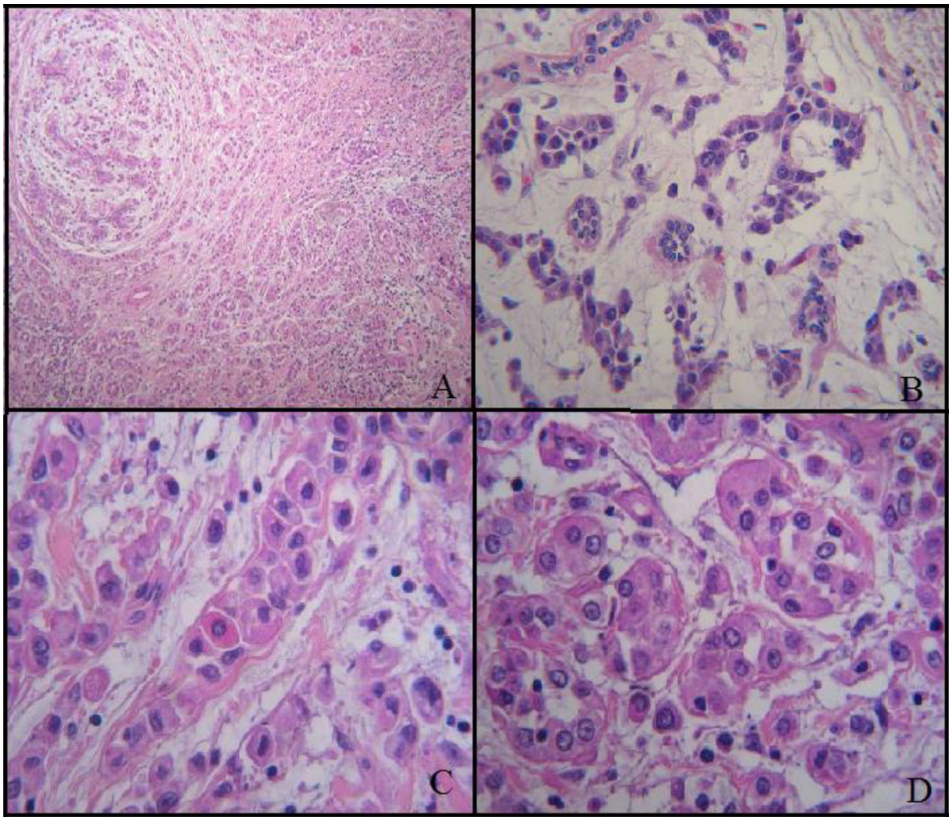


**Fig. 2.** Hematoxilin and eosin stain showing in A. 200× and B. 400× acinic cells organized in glandular or ductal-like pattern, rounded by a fine strip of collagen, occasionally infiltrating the surrounding stroma; in C-D. 600× ma proliferation of cells characterized by serous acinar differentiation, polygonal shape, round and often eccentric nuclei with granular chromatin, coarse and bright red cytoplasmic granules.