Case Report

Intracystic Adenomyoepithelioma of the Breast — Case Report and Review —

Hajime Hikino*1, Koji Kodama*2, Kiyoshi Yasui*1, Nobuhiro Ozaki*1, Saburo Nagaoka*3, Hiroshi Miura*4

Departments of *1Surgery, *2Radiology and *3Pathology, Shimane Prefectural Central Hospital, Shimane, Japan
Departments of *4Pathology, Matsue Red Cross Hospital, Shimane, Japan

A case of an intracystic adenomyoepithelioma of the breast mimicking intracystic carcinoma is described. Preoperative examination with mammography, sonography, computed tomography, and magnetic resonance imaging showed an intracystic tumor with an indistinct margin and several swollen lymph nodes in the ipsilateral axilla. Because the results of fine-needle aspiration cytology of the tumor were interpreted as carcinoma, partial mastectomy with dissection of the axillary nodes was performed. Histopathologic and immunohistochemical examination revealed an intracystic adenomyoepithelioma without nodal involvement. The imaging features of this rare tumor may vary widely, which may result in an incorrect diagnosis of breast carcinoma. Indeed, adenomyoepithelioma has metastatic potential; however, lymphatic spread is rare and axillary intervention may be over-treatment for most cases. While the imaging descriptions of intracystic adenomyoepitheliomas are very limited, this tumor should be considered in the differential diagnosis to avoid unnecessarily aggressive treatment.


Key words: Breast neoplasm, Adenomyoepithelioma, Myoepithelial cells, Intracystic tumor

Introduction

Hyperplasia and neoplastic lesions in the mammary glands usually arise from atypical proliferation of luminal epithelial cells. However, several breast neoplasms composed of conspicuous proliferation of myoepithelial cells have been reported. Among myoepithelial-rich tumors, adenomyoepithelioma was first described by Hamperl in 1970.10 This tumor has a balanced biphasic structure, consisting of epithelial and myoepithelial elements.

A review of the literature indicates that adenomyoepithelioma of the breast usually forms a solid tumor, and presentation as an intracystic tumor is a rare clinical manifestation.10 This report describes an additional case of intracystic adenomyoepithelioma misdiagnosed as an intracystic carcinoma on preoperative workup, including computed tomography (CT), magnetic resonance imaging (MRI), and fine-needle aspiration cytology. We discuss the imaging and cytological features of this rare variant of adenomyoepithelioma and correlate them with histology.

Case Report

A 56-year-old woman was referred to our hospital with complaints of a left-sided breast lump. There was no history of constitutional symptoms and no family history of breast malignancy. Physical examination revealed a round, non-tender, freely movable mass measuring 30 mm in the central region of her left breast. Neither axillary nor supraclavicular lymph nodes were palpable. Cranio-caudal and mediolateral-oblique mammography (Senographe DMR+, General Electric Company, CT, USA) demonstrated a round, lobulated tumor with a focally indistinct border and no calcification (Fig 1). Sonographic examination (LOGIQ 500 MD, linear-array transducer, 11 MHz, GE Healthcare, Berkshire, UK) revealed an intracystic tumor exhibiting wide-based morphology with an...
irregular margin, suggesting tumor invasion into surrounding breast tissue (Fig 2). Two swollen lymph nodes measuring $30 \times 10$ mm and $10 \times 6$ mm were observed in the ipsilateral axilla.

Sonographically guided fine-needle aspiration cytology of the solid lesion was performed (Fig 3). The aspirated specimens showed rich cellularity in the form of large cell clusters composed of dual cell elements. One component consisted of rounded cells with no double cell layer, and the other consisted of loosely adhesive, irregular, spindle-shaped cells with marked nuclear pleomorphism. Few isolated single cells or bipolar naked nuclei were recognized in the background. In light of these findings, breast carcinoma with atypical features was initially diagnosed.

Helical CT imaging (Aquilion TSX-101A, TOSHIBA, Tokyo, Japan) with contrast medium, using 3-mm-wide sections, in addition to gadolinium-enhanced MRI (Signa Horizon, 1.5 Tesla, GE Healthcare, Orlando, USA), revealed a solid tumor in a cyst (Fig 4, 5). The solid lesion demonstrated heterogeneous enhancement and an ill-defined margin. Serum carbohydrate antigen 15-3 and carcinoembryonic antigen levels were within the normal ranges. Based on the results of the presurgical diagnostic workup, intracystic breast carcinoma with stromal invasion and axillary node involvement was diagnosed. After adequate discussion, the patient elected to undergo partial mastectomy along with dissection of the axillary lymph nodes, in order to avoid a false-negative