Intracystic Mucinous Carcinoma of Breast – Case Report with Review of Literature

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Abstract

Cystic breast mass is one of the common conditions seen presented in any breast clinic. Evaluating such cystic breast lesions is very important. Malignant cystic tumors like mucinous carcinomas and papillary carcinomas have to be differentiated from common benign cystic lesions of the breast like fibrocystic lesions and papillomas. Malignant breast cancers that present as cystic lesions are seen to have a good prognosis regardless of histologic type. Among other malignant breast lesions that present as cystic masses, mucinous carcinomas are quite rare. Diagnosing cystic mucinous tumors is essential because of its prognostic significance. Also, typing mucinous tumors is important too, as pure type of mucinous carcinomas have been found to have an excellent prognosis when compared with mixed variant. Here we present a case of intracystic mucinous carcinoma in a 31-year-old patient along with a short review of facts about mucinous breast tumors.

Keywords: Cystic mass; Mucinous carcinoma; Breast

Introduction

Cystic breast mass is one of the common conditions that a female patient presents within any breast clinic. Carcinomas that commonly present as cystic lesions are papillary carcinomas, cystic degeneration of ductal carcinomas and very rarely mucinous carcinomas. Regardless of histologic type, breast carcinomas that present as cysts have a very good prognosis. So, evaluating cystic lesions of breast to diagnose intracystic cancers at an early stage plays an important role in the prognosis of the patient [1,2]. Here we present a case of intracystic mucinous carcinoma in a 31-year-old patient.

Case report

The patient came with the complaint of having noticed a mass in her left breast for the past one month. On examination, the mass was located in the upper outer quadrant of left breast measuring about 3 x 2 cm. The mass was found to be soft to firm in consistency and was not attached to the overlying skin or the chest wall. No other masses or axillary lymph nodes noticed. FNAC had done revealed in conclusive report. The mass was then excised and sent for histopathological examination.

On gross examination, the breast lump specimen was a cystic nodule measuring about 3.2 x 2 cm. On cut section, there was a well circumscribed cystic lesion measuring about 3 x 1.8 cm. Excised margins were free [Figure 1]. On microscopy, the lesion was a well-circumscribed mucinous cystic lesion containing

mucinous pools suspended within which well-differentiated malignant ductal component distributed in the form of solid nests and occasional glandular configuration [Figure 2]. A diagnosis

Figure 1: Cystic Nodule.

Figure 2: Solid nests and occasional glandular configuration.

of mucinous pools suspended within which well differentiated malignant ductal component distributed in the form of solid nests and occasional glandular configuration [Figure 2]. A diagnosis of intracystic, grade I, mucinous carcinoma of the breast was made with Modified bloom Richardson's grading of 4/9.

Review of Literature

5.5 percent of all malignant breast tumors constitute mucinous carcinomas [4]. Owing to the histological variability of mucinous carcinomas, some is being pure and others being mixed with other variants, incidence of this tumor in literature remains variable.

Although, the defining cut off point of amount to mucin present to be diagnosed as mucinous carcinoma is 50% or more [3,5], some consider tumors with only 33-50% of mucinous component also as mucinous carcinomas [3].

Histologically, the neoplastic cells are seen in clusters floating in pools of extracellular mucin [6]. WHO classified them into two types, pure and mixed, pure type being composed only of tumor tissue producing mucin whereas mixed type has mucin producing cells mixed with infiltrating ductal epithelial cells [4]. Most of the mucinous carcinoma cases reported is of mixed type. Pure mucinous carcinomas are rare and contribute only 2-3 % of all invasive cancers.

Distinguishing pure from mixed mucinous carcinoma is of prognostic significance. Studies show that pure types have lesser metastatic potential and longer survival rates when compared to mixed types [7]. Intracystic mucinous carcinomas might also have good prognosis just like other intracystic tumors (intracystic papillary carcinoma). Hence, identifying intracystic mucinous carcinomas may help to determine prognosis of the patient and to device management plan accordingly.

Age of occurrence is variable but usually females of 55-60 years old are affected most [3,8]. They have variable clinical presentations. One study showed that most pure mucinous carcinoma lesions are palpable clinically, among which 1/3rd were not visible on mammogram [7]. On imaging, they look smooth contoured, resembling benign lesions rather than having infiltrative margins like any other malignant lesion. Our case, being intracystic, looked benign both in clinical examination and imaging studies.

Treatment includes surgery followed by chemotherapy and hormone therapy. Local excision or mastectomy with sentinel node mapping is usually done. Adjuvant radiotherapy is advocated in case of breast conserving surgery. Anthracycline based drugs are considered as drug of choice for chemotherapy.

Mucinous breast cancers generally have good prognosis especially when they are of pure mucinous type. Ten year survival rate for pure mucinous cancers is more than 90% [9]. Mucinous cancers usually present at lower grades, have low possibility of lymphatic spread and lesser recurrence rate when compared to ductal carcinomas. The overall age, stage and grade adjusted prognosis of mucinous cancers were found to be better than ductal carcinomas [10,11].

Lymph node status is being considered as one of the significant prognostic factors for mucinous carcinomas [12]. Tumor size as a prognostic factor is still under debate mainly because tumor size is influenced by mucin content. There are studies showing controversial results both approving and disapproving tumor size as a significant prognostic factor [13]. However, mucin content is found to possibly influence prognosis by being HER 2 negative and therefore rendering the tumor resistance to Trastuzumab [5]. Positive nodal status is related to bad prognosis but lymph node involvement is considerably rare in mucinous tumors accounting for only 12 to 19% [3]. Therefore, it is not suggested to consider lymph node clearance when treating mucinous tumors surgically [13].

Intracystic breast carcinomas are not only of diagnostic curiosity, but are also of prognostic significance.

Conflict of Interest

The authors declare that there is no conflict of interest of any kind for publishing this paper.

Authors Contribution

All authors had access to the data and an important role in writing the paper.

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