Case report

Mucinous cystadenocarcinoma of the breast

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Introduction

Mucinous cystadenocarcinoma (MCA) of the breast is an unusual primary malignancy of the breast which bears a striking resemblance to mucinous cystadenocarcinoma of the pancreas and the ovary. To our knowledge, only 6 cases have been reported[1-3] A case of a 65 year old woman with a unilateral mucinous cystadenocarcinoma of the breast is reported.

Case report

A 65 year old postmenopausal woman presented with a painless breast lump in the upper outer quadrant of left breast for 1 year. On palpation there was a firm mass with a palpable axillary lymph node. It is measured 3x2.7 cm sonographically.

A modified radical mastectomy was performed. The specimen of the left breast with nipple and areola measured 17x11x5.5cm. There was a solid and cystic area in the upper outer quadrant measuring 4x3x1.5cm. Cut section showed mucinous secretions with whitish solid areas. Five lymph nodes were identified and the largest lymph node measured 1.2 cm in maximum dimension. On microscopy, sections from the breast revealed dilated mucin filled cystic spaces (Fig.1) lined by tall columnar cells with abundant intracytoplasmic mucin, basally located nuclei and inconspicuous nucleoli. (Fig.2) Sections from the lymph node revealed cystic structures with papillary infoldings having tall columnar cells with abundant cytoplasm. This indicated a lymph node metastasis from the primary in the breast. Immunohistochemistry showed tumour cells to be negative for oestrogen and progesterone receptors with a high Ki67 labeling index. WT1 and CK19-9 performed to exclude a possible primary from ovary and pancreas were negative.

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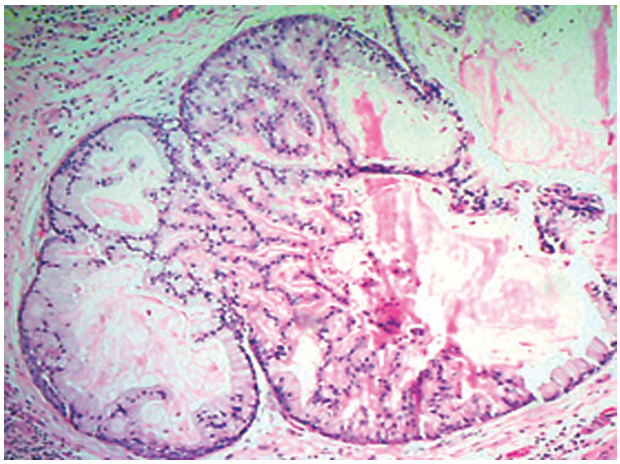

Fig.1. A dilated cystic space filled with mucin. The cyst was lined by tall columnar cells with abundant cytoplasm & basally located nuclei. H&E x 100

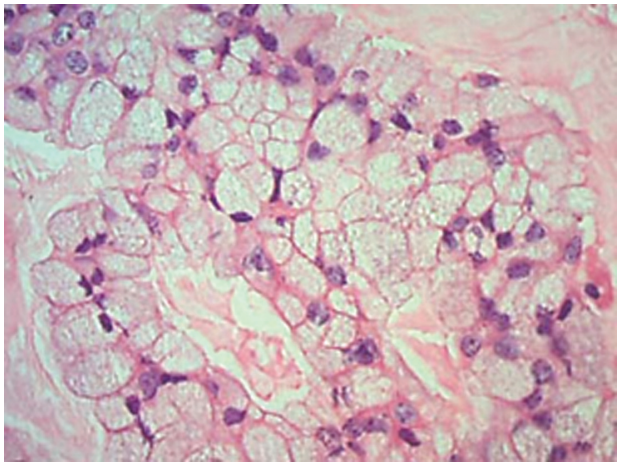

Fig.2. Cyst lined by columnar cells with intracellular mucin & pools of extracellular mucin. (H & E x 400)

Discussion

Mucinous cystadenocarcinoma of the breast is an unusual primary entity which bears a striking resemblance to mucinous cystadenocarcinomas of the ovary and pancreas. Only 6 cases have been reported to date.[1-3] It comes under the broad umbrella of mucinous carcinomas of the breast. Other mucinous carcinomas being mucinous carcinoma (colloid carcinoma), signet ring cell carcinoma and columnar cell mucinous carcinoma. Only mucinous cystadenocarcinomas produce intracellular as well as extracellular mucin; mucinous carcinomas produce extracellular mucin whereas columnar cell mucinous carcinoma and signet ring cell carcinoma produce only intracellular mucin[4].

A review of the literature reveals that the age at diagnosis of mucinous cystadenocarcinoma ranges from 49 to 96 years, with a mean of 68 (Table 1). Most of the cases were in postmenopausal women and 2 cases were in women older than 70 years. Similar to what Koenig and Tavassoli[2] previously reported, we found that the tumour cells were negative for ER and PR, suggesting that MCA of the breast develop independently of oestrogenic stimulation. This may partly account for the average age at diagnosis being higher for MCAs than for usual invasive ductal carcinomas. MIB-1 index was found to be high in the present case. Axillary lymph nodes were positive both in the present case and two of the six previously reported cases (Table 1).

Table 1: Summary of clinical features of previous cases & present case.						
Case no	**Age, years**	**Presenting symptom(s)**	**Treatment Size (cm)**	**Lymph node Treatment**	**Follow up metastasis**	**data**
1	79	Palpable mass & skin retraction	6.0	M,LND	-	9y†
2	54	Large ulcerated mass	19	M,LND	+	ANED, 24mo
3	67	Palpable mass	2.3	M,LND	-	ANED, 22mo
4	49	Palpable mass	8.5	M, LND, Chemo+Radio	-	ANED, 11mo
5	61	Mammographic	0.8 mass	Lumpectomy, LND	-	Unknown
6	74	Palpable mass	10	M,LND	-	ANED,2y
Present case	65	Palpable mass	3.0	M,LND	+	ANED, 28mo

M- mastectomy; LND- Lymph node dissection; Chemo- chemotherapy; Radio- radiotherapy; ANED-Alive with no evidence of disease. † - Died of disease other than carcinoma.

Ordinary mucinous carcinomas are also described more frequently in elderly women (mean age, 65 years).[5] ER and PR are frequently expressed in mucinous carcinomas.

The gross appearance of MCA resembles that of cystic hypersecretory carcinoma.[1] Abundant, intensely stained, orange to gray-green secretions can also be seen in cytologic preparations from cystic hypersecretory carcinomas.[7,8] However, the tall columnar cells with abundant cytoplasm found in MCAs are not a feature of cystic hypersecretory carcinomas Moreover, ER and PR are frequently expressed in cystic hypersecretory carcinoma.[9]

Finally, the age at diagnosis is higher for MCAs (mean, 68years) than for cystic hypersecretory carcinomas (mean 56 years).[10]

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