

## **A Rare case: Mucinous Cystadenocarcinoma of Breast**

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### **I. Introduction**

Mucinous cystadenocarcinoma of the breast is an unusual primary malignancy of breast which bears striking resemblance to mucinous cystadenocarcinoma of the pancreas and the ovary. To our knowledge, only 6 cases have been reported<sup>1-3</sup> A case of a 65 year old woman with an unilateral mucinous cystadenocarcinoma of breast is reported and the literature is reviewed.

### **II. Case Report:**

A 65 year old postmenopausal woman presented with a painless breast lump measuring (3x2.7)cm<sup>2</sup> clinically over upper outer quadrant of left breast for 1 year. On palpation there was a firm mass. An axillary lymph node was enlarged and measured (1x0.5)cm<sup>2</sup> clinically.

A modified radical mastectomy was performed. The specimen of the left breast with nipple and areola measured 17x11x5.5cm with a solid and cystic areain the upper outer quadrant measuring 4x3x1.5cm. Cut section showed mucinous secretions with whitish solid areas. Five lymph nodes were identified. Sections from the largest lymph node measured (1.2x0.7x0.5) cc.

On microscopy, sections from the breast revealed dilated cystic spaces lined by tall columnar cells with abundant cytoplasm, basally located nuclei and inconspicuous nucleoli. The cystic spaces were dilated with mucin pools (Figure 1 & 3). Sections from the lymph node revealed cystic structures with papillary infoldings having tall columnar cells with abundant cytoplasm (Figure 2). This indicated a lymph node metastasis from the primary in breast.

Immunohistochemistry was done which showed tumour cells to be negative for estrogen and progesterone receptors with a high Ki67 labeling index.

### **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.<sup>1-3</sup> It comes under the broad umbrella of mucinous carcinomas of breast. Other mucinous carcinomas being mucinous carcinoma (colloid carcinoma), signet ring cell carcinoma and columnar cell mucinous carcinoma. Only mucinous cystadenocarcinoma produce intracellular as well as extracellular mucin; mucinous carcinoma produce extracellular mucin whereas columnar cell mucinous carcinoma and signet ring cell carcinoma produce intracellular mucin<sup>4</sup>.

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). Most of the cases were in postmenopausal women, and 2 cases were in women older than 70 years. Similar to what Koenig and Tavassoli<sup>2</sup> previously reported, we found the tumor cells negative for ER and PR, suggesting that MCAs of the breast develop independently of estrogenic 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 node status was positive both in the present case and in the previously reported cases (Table). However, it was not related to an adverse prognosis.

Table: Summary of clinical features of previous cases & present case.

Case no	Age, years	Presenting symptom(s)	Size, cm	Treatment	Lymph node metastasis	Follow up 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 mass	0.8	Lumpectomy, ND	-	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; rad, radiotherapy; ANED, alive with no evidence of disease.

† died of the disease other than carcinoma.

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

The gross appearance of MCA resembles that of cystic hypersecretory carcinoma.<sup>1</sup> Abundant, intensely stained, orange to gray-green secretions can also be seen in cytological preparations from cystic hypersecretory carcinomas.<sup>7,8</sup> 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.<sup>9</sup> Finally, the age at diagnosis is higher for MCAs (mean, 68 years) than for cystic hypersecretory carcinomas (mean 56 years).<sup>10</sup>

**References:**

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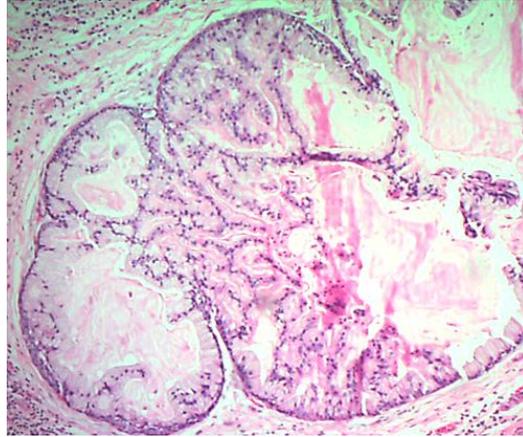


Figure1: Histopathological picture of mucinous cystadenocarcinoma showing a dilated cystic space filled with mucin. The cyst is lined by tall columnar cells, having abundant cytoplasm & basally located nuclei. (H&E Stain; X100)

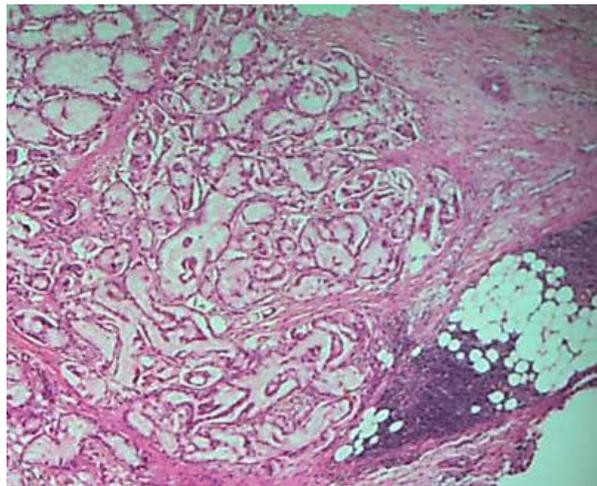


Figure 2: Histopathological picture showing lymph node metastasis from mucinous cystadenocarcinoma of breast (H & E Stain; X40)

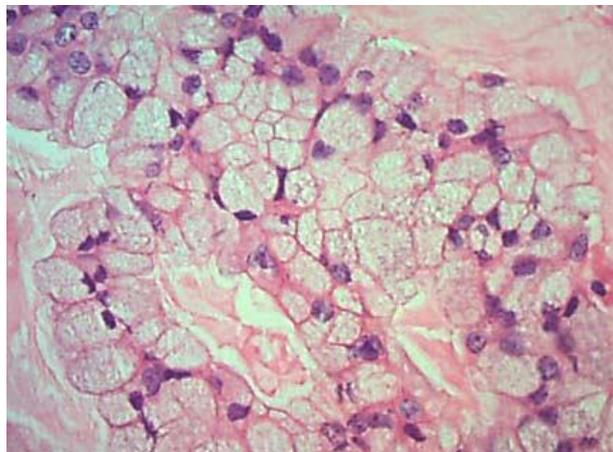


Figure 3: Histopathological section showing columnar cells filled with mucin & extracellular mucin pools (H & E Stain; X 400)