**Bilateral Ductal Carcinoma In Situ (DCIS) In A Male Breast: A Case Report**

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<table>
<thead>
<tr>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives:</td>
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<tr>
<td>This case is presented to emphasize the importance of recognizing nipple discharge as a clinical sign of male ductal carcinoma in situ and an opportunity for early diagnosis.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Clinical presentation and intervention:</th>
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</thead>
<tbody>
<tr>
<td>A 68-years old gentleman presented with bilateral bloody nipple discharge. Clinical examination of breasts showed no masses in either breasts and no axillary lymphadenopathy. He was investigated with bilateral mammogram, ultrasound scan and magnetic resonance imaging of the breasts. All were leading to a diagnosis of intraductal papilloma on the left retroareolar region and suspicious microcalcifications on the right retroareolar area. Retroareolar excision under general anesthesia confirmed the presence of DCIS in both specimens. Completion mastectomy was performed which showed no residual disease in either breasts.</td>
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| Conclusion: |
| DCIS in male breast is very rare and hard to diagnose due to male breast morphology. It is best treated with mastectomy without axillary dissection. |

| Keywords: |
| *Ductal carcinoma in situ, DCIS, male breast cancer* |

### Introduction

Breast cancer in males is a rare disease. Approximately 0.5-0.7% of all cases of breast carcinoma affects male individuals\(^1\). Ductal carcinoma in situ (DCIS) in males is also a rare disease, representing approximately 5% of male breast cancer cases\(^2\).

The most important clinical symptoms of DCIS are subareolar mass and nipple discharge. The median age is 58 years. As in women, the prognosis associated with DCIS in men is excellent. Total mastectomy without axillary dissection is the preferred basic treatment of choice\(^3\).

### Case report

A 68-years old gentleman presented to surgical outpatient department in November 2009 with a history of bilateral nipple discharge. The patient noticed the bloody discharge three times over the past one month. He experienced no pain or change in the shape or size of his breasts.

He has a five-year history of parotid swelling for which he was investigated for and was advised to excise but he refused due to risks of facial nerve paralysis. The patient is otherwise healthy apart from Type II diabetes since 1988 controlled with oral hypoglycemic agents. He has no family history of breast cancer or history of exogenous hormone intake. He is married and has seven children.

Clinical examination revealed a 4cm solid parotid swelling on the left side of his face with no cervical lymphadenopathy. He had expressive bilateral nipple discharge bloody to brown in color. There was no evidence of any masses in the breasts that could be felt and no palpable axillary lymphadenopathy.

The patient was investigated with bilateral mammography (Figures 1 and 2) which showed bilaterally increased retroareolar density, more evident on the right where suspicious
Microcalcifications were seen extending from the nipple backwards. Left central focal area of symmetrical density showing microcalcifications was noted as well.

Ultrasound breasts showed hypoechoic area seen at both retroareolar regions, but no masses could be detected. MRI of the breasts showed the left breast with linear enhancement of 3cm seen extending from the nipple backwards within the distribution of the ductal system. A focal small inner central enhancing duct of 6x8x9mm was seen likely representing intraductal papilloma. The right breast showed a linear enhancement of 2.7cm in the retroareolar area within the distribution of the ducts (corresponding to the suspicious retroareolar microcalcification). Patient also had a cytological examination of the nipple discharge from both breasts confirming a right-sided papillary neoplasm.

The patient underwent bilateral retroareolar excisions of both breasts for diagnosis in December 2009 as it was difficult to obtain a tissue diagnosis radiologically. A mammographic x-ray of the specimen confirmed the presence of microcalcifications.

Histopathological assessment of both specimens from the right and the left retroareolar regions showed papillary and cribriform DCIS (Figures 3 and 4 respectively). Foci of DCIS were evident close to the inked margin (1mm). The surrounding stroma showed dense scleroses with a focal radial scar and intraductal papillomas. Microcalcifications were seen. There was no evidence of invasive carcinoma.

The patient case was discussed in the tumor board and the options for treatment were decided to be either completion mastectomy with or without Sentinel lymph node biopsy (SLNB) or post operative radiotherapy to the remaining breasts. Decision was made with the patient to...
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undergo bilateral total mastectomy in order to avoid the side effects of radiotherapy.

The patient had bilateral simple mastectomy with bilateral SLNB on December 30, 2009. Histopathological examination showed no residual DCIS and the SLNB in both the right and left axillas were negative. Patient did well and on subsequent discussion at the oncology meeting, it was decided to keep the patient under follow-up with no further treatment.

Discussion

Breast cancer in men is rare, accounting for less than 1% of all breast cancer cases. Although breast cancer in men occurs less frequently than in women, the diseases are similar in many ways, distinct differences have been noted in several studies. Male breast carcinoma has a tendency to present at higher clinical stages and displays more frequent lymph node metastases.

Histologically, poorly differentiated tumors in males are less common than in females(6).

Despite the information accumulated to date regarding invasive carcinoma of the male breast, very little is known regarding the precursor lesion ductal carcinoma in situ (DCIS), which represents approximately 5% of all male breast carcinoma(9).

Male breast characteristically lacks lobules (terminal duct lobular units [TDLU]) in which a majority of DCIS cases originate in the female breast(7). The male breast is characterized by the development of only the more central portion of the duct system, comprised of the large ductal structures and the nipple. The periphery of the organ, comprised of TDLU or lobules, differentiates only under physiologic or pathologic influence of endogenous or exogenous estrogens or estrogen-mimicking compounds. Consequently, the DCIS patterns observed within the male breast should resemble those present in the more central ducts of the female breast, which also predominantly are papillary type. Low grade forms of DCIS predominate in males and most likely do not require the TDLU as a site of origin and appear to arise from the epithelium present within larger ducts. In addition, stimulation by endogenous or exogenous estrogens might play a critical role in the development of male DCIS itself as well as in its differentiation(8).

The two most characteristic symptoms for both pure DCIS and invasive cancer are slowly growing subareolar mass and serosanguinous nipple discharge. The median duration from the onset of symptoms until consultation is 2 months for pure DCIS and 6 months for DCIS with invasion. Other symptoms such as bilateral gynecomastia and mastitis are rare(8).

Risk factor for male breast cancer(9,10) includes family history of breast disease or presence of a genetic mutation. About 20% of breast cancers in men occur in those who have a family history of the disease. Men with breast cancer gene 2 (BRCA2) mutations may be at increased risk for breast cancer or other types of cancer. Another factor is age. The average age for men to be diagnosed with breast cancer is 65.
Elevated estrogen levels in cases of certain diseases (e.g. liver disease) or conditions (e.g. Klinefelter’s syndrome) or treatment that increase estrogen levels are other risk factors. Life style factors (obesity, lack of exercise, and alcohol abuse) should likewise be considered. High doses of radiation may increase risk of breast cancer.

Currently, there is no proven method for preventing male breast cancer. Best chance of surviving breast cancer is early detection through regular self-examinations, clinical breast examinations and mammography (which is not routinely offered to men and may be difficult to perform because of the small amount of breast tissue).

Diagnosis and treatment of male breast cancer or DCIS is the same as in the female but because men do not have much of breast tissue, a lumpectomy is generally not an option. The standard treatment for male DCIS is simple or total mastectomy without axillary dissection. The prognosis associated with DCIS in men is excellent; however, clinical features, pathology and treatment of this disease are not well defined in the literature(11). On the other hand, mastectomy with axillary dissection is still the most commonly recommended procedure for male breast cancer. A retrospective study(12) evaluated 32 male patients with early breast cancer who underwent sentinel lymph node biopsy and axillary dissection only in cases of metastases in the sentinel lymph node, as with women, SLNB in male patients with breast cancer and clinically negative axilla was recommended.

Available data on this issue are limited. A randomized trial is needed. However, this might be impractical because of the rarity of this disease. A panel of the American Society of Clinical Oncology stated “although the data are limited… it is unlikely that SLNB will be any less accurate in men than it is in women”(13). Research about breast cancer in men is ongoing. New therapies and combination of therapies are being studied in clinical trials. Clinicians should have a low index of suspicion in male patients presenting with symptoms like nipple discharge or a breast mass and should be investigated and treated promptly.

**Conclusion**

A suspicious breast mass or nipple discharge in a man should always be evaluated with a mammogram and cyto-pathological examination. Early diagnosis and treatment is the key for better prognosis in these patients. Globally, the prognosis is similar to that in women (at identical stage). Future studies with a focus on disease biology are crucial to advance the understanding of male breast cancer or DCIS and to optimize the care of all male patients.

**References**


