

Mixed invasive lobular carcinoma / Invasive ductal carcinoma (ILC/IDC) of the breast : A case report

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A case of breast carcinoma with mixed histologic subtypes composed of invasive lobular carcinoma and invasive ductal carcinoma is reported. The incidence is rare, about 2% of breast cancers. In many published series these two histologic subtypes had different mammographic features. The imaging of this case, including mammography and ultrasonography, were evaluated corresponding with the histopathology. The mammography showed a bilobed mass, one pole was invasive ductal carcinoma with a rounded hyperdense mass, the other pole was invasive lobular carcinoma with an isodense mass with a spiculated border. The ultrasonography showed an ill defined, lobulated low echoic mass with an irregular echogenic rim and posterior shadows suggestive of malignancy. There is no specific ultrasonographic feature of these two subtypes.

Key words: Breast cancer, Lobular carcinoma, Ductal carcinoma.

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รายงานผู้ป่วยมะเร็งเต้านม 1 ราย ที่เกิดจากเซลล์มะเร็ง 2 ชนิดร่วมกัน ได้แก่ *Invasive lobular carcinoma* และ *Invasive ductal carcinoma* : ซึ่งเป็นภาวะที่พบน้อย มีอัตราการเกิดร่วมกันประมาณ 2 % ของมะเร็งเต้านม ในรายงานนี้ได้เสนอลักษณะภาพแมมโมแกรมและอัลตราซาวด์ร่วมกับลักษณะทางพยาธิ ภาพแมมโมแกรมของก้อนมะเร็งมีลักษณะเป็นก้อนที่มี 2 ขั้ว ขั้วหนึ่งเป็นก้อนกลมมีพยาธิพบเป็น *invasive ductal carcinoma* อีกขั้วหนึ่งของก้อน มีลักษณะเป็นก้อนที่มีขอบเขตไม่เรียบ (*spiculated*) มีพยาธิพบเป็น *invasive lobular carcinoma* ลักษณะที่พบนี้แสดงให้เห็นว่ามะเร็งชนิด *invasive ductal carcinoma* และ *invasive lobular carcinoma* จะให้ลักษณะภาพแมมโมแกรมที่ต่างกัน ซึ่งสอดคล้องกับรายงานอื่น ๆ

ส่วนภาพอัลตราซาวด์ของก้อนมะเร็งนี้พบมีลักษณะเป็นก้อนเนื้อที่มี echo ต่ำ (*hypoechoogenicity*) มีขอบเขตไม่เรียบ ขอบหนาไม่ชัดเจน มีแถบดำบริเวณด้านหลังก้อน (*posterior shadows*) ลักษณะเหล่านี้ชี้บ่งว่าเป็นมะเร็ง แต่ภาพอัลตราซาวด์ไม่สามารถแสดงถึงความแตกต่างของมะเร็งทั้ง 2 ชนิดนี้

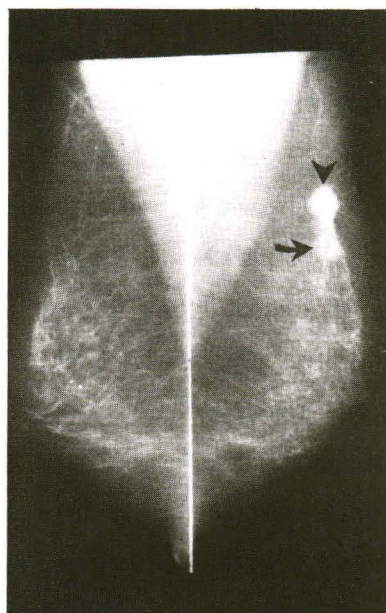
Invasive lobular carcinoma (ILC) of the breast is the second most common breast malignancy, while invasive ductal carcinoma is the most common histologic subtype. The incidence of ILC varies from 5 %⁽¹⁾ to 15 %.⁽²⁾ Mixed malignancies of other histologic types include intraductal and invasive ductal carcinoma, as well as coexisting with lobular carcinoma in situ.⁽³⁾ Mixed lobular and ductal carcinoma features (ILC/IDC) account for approximately 2.2 % of invasive breast cancer.⁽⁴⁾ Chonmitree I et al,⁽⁵⁾ reported 1.5 % incidence of these mixed types in Thai patients. Although the prognosis⁽²⁾ of ILC is similar to that of IDC, many investigators have reported differences in the presentation and mammographic features.^(6,7)

We report a case of mixed invasive lobular carcinoma/invasive ductal carcinoma who was treated with conservative breast surgery and post-operative radiotherapy at King Chulalongkorn Memorial Hospital in February 1996. The purpose of this report is to illustrate the imaging features, including mammography, ultrasonography and correlations with histopathologic features.

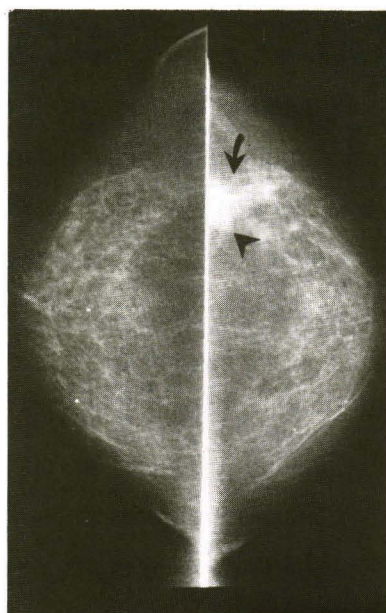
Case report

A 59-year-old woman presented with a lump in the left breast which she had experienced for 5 years. Physical examination revealed an ill-defined mass at the upper outer quadrant of the left breast which measured about 3 cm. in diameter. The mammogram showed a soft density tissue mass with bipolar shape at the left upper outer quadrant. One pole was round with a slightly irregular border

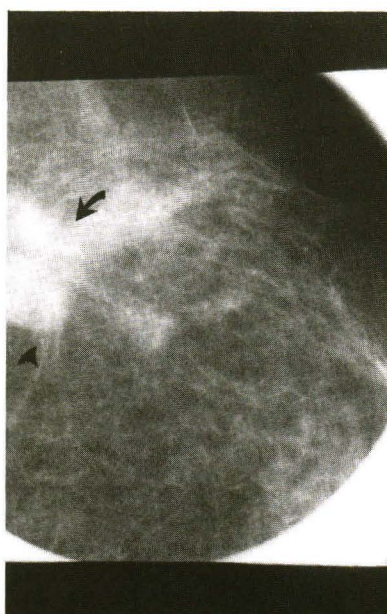
and was hyperdense. The other pole was spiculated and isodense to normal parenchyma and the poles measured about 1 x 1.3 cm and 0.7 x 3 cm, respectively. Skin thickening and retraction were noted over the region of masses. No microcalcification was observed. A few small left axillary lymph nodes were noted with fatty hilum in one node (Fig.1 A,B,C). An ultrasonogram demonstrated a lobulated and ill-defined inhomogeneous hypochoic mass with an irregular, thick echoic rim which measured about 1.2 x 1.8 x 1.8 cm (Fig. 2). Posterior acoustic shadowing was also observed. Both the clinical and imaging findings suggested carcinoma. A fine needle aspiration (FNA) cytology of the left breast mass was questionable for adenosis or infiltrating lobular carcinoma. Eleven days after FNA, the patient was treated with a lumpectomy and axillary node dissection. Histologically, there were two connected lumps. One was composed of relatively large and uniform cells arranged in solid ductal clusters (Fig.3). The other consisted of linear infiltrating small cells embedded in a sclerotic fibrous stroma (Fig. 4) The tumor cells of the latter lump were not strongly adhered to each other as in the former cell group. In addition, cytoplasmic vacuoles can be appreciated in the infiltrating linear or cord arranging cell group which is a feature of invasive lobular carcinoma, while the large solid duct cells are that of invasive ductal carcinoma, grade 2. No evidence of nodal metastasis was demonstrated (0/16 nodes) in our case. She was discharged from the hospital seven days later. Adjuvant postoperative radiotherapy was given in 200 – cGy per fractions to 5000 cGy total.



A



B



C

Figure 1. A,B,C (A = Mediolateral oblique, B = Craniocaudal view, C = Conedown craniocaudal view)
 The mammogram shows a bipolar mass at left upper outer quadrant, one pole is invasive ductal carcinoma being round hyperdense mass (arrow head), the other pole is invasive lobular carcinoma being spiculated isodense mass (arrow)

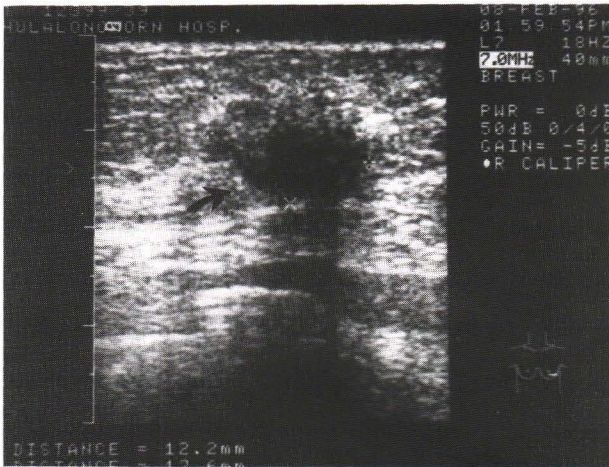


Figure 2. Ultrasonography shows an inhomogeneous, low echoic mass with lobulated contour, thick echogenic rim and posterior shadows. (arrow)

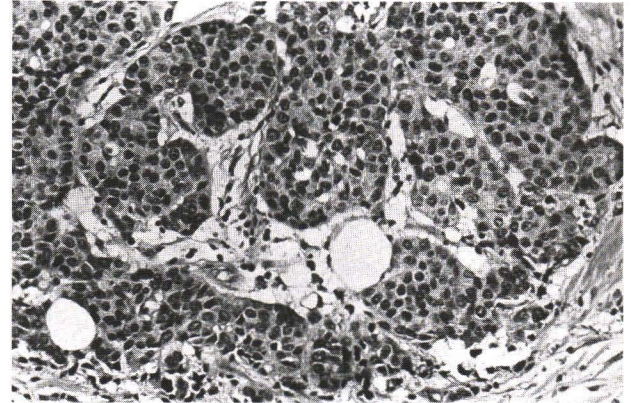


Figure 3. Invasive ductal carcinoma. Tumor cell are large. They possess abundant cytoplasm occurring in solid and duct pattern. (H & E x 200)

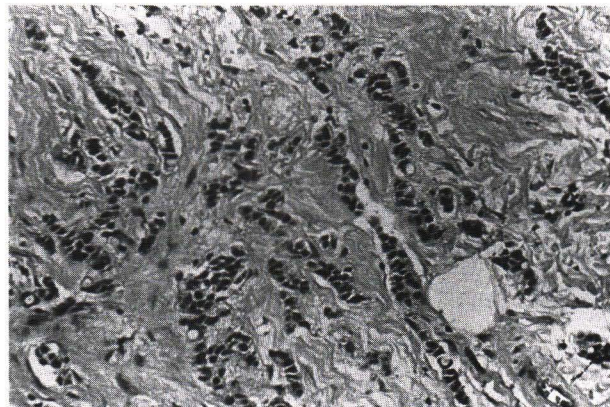


Figure 4. Invasive lobular carcinoma. Tumor cells are small. They appear in linear and cord - like pattern. Cytoplasm are limited and some cells comprising cytoplasmic vacuoles. (H & E x 200)

Discussion

Success in detection and evaluation of breast masses depends on the ability to perceive a possible abnormality, the skill to evaluate it with appropriate mammographic views and ultrasonography, and the judgement to provide likely recommendations to the patient and referring physician.

Histologic types and growth patterns of the carcinoma affect the mammographic presentation. Ductal carcinoma is the most frequent type. It arises in the region of the terminal ductolobular segment. Wide variations in the morphology of the tumor cells can be found, ranging from relatively uniform, small cells to pleomorphic, large cells. The cells can grow in parenchymal formations, in nests or cords, or similar to intraductal carcinoma, along the existing ductal structures where they penetrate the basement membrane at one or several sites. A markedly fibrotic component can often be found. Therefore, IDC can have diverse manifestations as an irregularly outlined mass, circumscribed mass, diffusely distributed, microcalcification or no microcalcification.⁽⁸⁾ A stellate or spiculated mass is a common mammographic appearance for carcinoma, which usually signifies invasion to surrounding tissue, but has occasionally been reported with intraductal carcinoma.⁽⁹⁾

Invasive lobular carcinoma is the second most frequent type. The cells of the ILC are small, round, and uniform. The cells of ILC often grow diffusely, individually, or in a string – like arrangement into the stroma (so called Indian – file pattern). The most common radiographic pattern of ILC has a poorly defined asymmetric density with architectural distortion.⁽³⁾ Areas of ILC frequently are of low density, not much greater than that of the surrounding

parenchyma. Occasionally a spiculated mass or other focal lesion is observed and very rarely even a spiculated and nodular growth with a round mass can be present.⁽⁸⁾ Mass lesions have been said to be of lower density than those occurring with ductal carcinoma.^(7,10) But the Cornford EJ, et al series found that there were no features that distinguished mass lesions due to lobular carcinoma from mass lesions caused by ductal carcinoma.⁽¹¹⁾ Although invasive lobular carcinoma is indistinguishable radiographically from invasive ductal carcinoma, the mammographic signs may be more subtle due to its growth pattern.^(1,4)

Le Gal M et al,⁽⁷⁾ compared the mammographic features of ILC with other breast carcinomas. Pure ILCs were less frequently round (1% VS 11 %) and more frequently spicular (28 % VS 23 %) or with architectural distortion (18 % VS 6 %). Microcalcifications were less common (24 % VS 41 %).

In our patient, the mammographic findings were two soft tissue density masses adhered to each other in which one was round with a slightly irregular border and the other one was a spiculated mass. Retrospectively compared to the histopathologic findings, the round lesion with irregular margins seen on mammograms was the invasive ductal carcinoma. The spiculated mass was found to be an invasive lobular carcinoma. These different mammographic features were in accordance with the Le Gal M. series.

Breast carcinoma can also have a variable appearance on ultrasonography. The classic description is that of an ill – defined hypoechoic mass with posterior acoustic shadowing. However, carcinoma can be well defined and may even show posterior acoustic enhancement. Although carcinoma usually presents as some type of hypoechoic mass lesion,

it can present without definite mass - like features. It may be seen simply as a focus of acoustic shadowing or a large area that is refractory to sound penetration. An area of architectural asymmetry or distortion may also be an indicator of carcinoma. Most histologic types of breast carcinoma cannot be differentiated on the basis of ultrasound characteristics. However, medullary carcinoma has the most "benign" appearance, benign being a relatively well - defined hypoechoic rounded mass with posterior acoustic enhancement.⁽¹²⁾ The ultrasonographic appearance of our reported case also revealed an ill - defined hypoechoic solid lesion with acoustic shadowing, highly suggestive of malignancy.

A comparison of presentations, treatments and outcomes of lobular and ductal carcinoma from a large series⁽¹³⁾ found that the 5 year overall survival and local disease - free survival rates for women treated by preservation were similar for invasive ductal carcinoma (84 % overall survival, 97 % disease - free survival) and invasive lobular carcinoma (87 % overall survival, 98 % disease - free survival).⁽¹⁴⁾

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