CHRONIC MASTITIS CLINICALLY SIMILAR TO BREAST CARCINOMA : A REPORT OF TWO CASES

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Abstract : Two patients with chronic mastitis clinically similar to breast carcinoma are presented. The pathological findings revealed to be chronic mastitis as the subsequent change to duct ectasia in one and to be granulomatous mastitis in the other. Whenever breast lump is diagnosed, chronic mastitis clinically similar to breast carcinoma must be in consideration.

Key words : Chronic mastitis, Granulomatous mastitis, Duct ectasia
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INTRODUCTION

Acute mastitis is a common disorder during the postpartum and lactational period, but chronic inflammatory lesions in the breast are rarely encountered. These lesions such as granulomatous mastitis, plasma cell mastitis, duct ectasia and periductal mastitis sometimes simulate breast carcinoma. Granulomatous mastitis was first described as a specific entity by Kessler and Wolloch¹⁾. It is a rare disorder, the etiology and the pathogenesis of which are unknown. Three clinical features characterize this disorder : the presence of clinical signs resembling malignancy, the occurrence of lesion after childbirth or lactation, and localization to mammary lobules. Several terms have been used for this, for example, granulomatous lobular mastitis, postlactational tumoral granulomatous mastitis²⁾, postpartum lobular granulomatous mastitis³⁾ and idiopathic granulomatous mastitis⁴⁾. The term of mammary duct ectasia was introduced by Haagensen⁵⁾ as a disease that may simulate carcinoma. This disorder is common in normal perimenopausal and post-

menopausal women. Hughes et al.⁶⁾ suggested that ductal involution such as fibrosis and dilatation was a normal process and duct ectasia is another aberration of ductal involution.

In this report, two patients with chronic mastitis clinically similar to breast carcinoma are presented. One was the case of chronic mastitis as a subsequent change to duct ectasia and the other was granulomatous mastitis.

CASE REPORTS

Case 1

A 71-year-old female noticed a mass in the left breast a week before her first visit to our hospital. She was married and had three children. On physical examinations, there were two irregularly-shaped and hard masses with the retracted skin near the areolar region. One was 0.7cm and the other was 0.5cm in a maximum diameter. Mammograms revealed a spiculated mass (Fig. 1). Ultrasonograms showed a hypoechoic and irregularly-shaped mass with the attenuated posterior echo (Fig. 2). Thermograms revealed no

Fig. 1. Mammogram of case 1 showing a spiculated mass in the lower outer quadrant of the left breast.

Fig. 2. Ultrasonogram of the case 1 showing a hypoechoic mass with attenuated posterior echo.

abnormality. Fine needle aspiration cytology demonstrated no malignant cells. Excisional biopsy was performed to obtain the final diagnosis.

On microscopic examination, there was diffuse inflammatory infiltration in periductal regions. Granulomatous forms composing of foreign body giant cells, histiocytes, lymphocytes and plasma cells were present (Fig. 3). The diagnosis of chronic mastitis with granuloma as the subsequent change to duct ectasia was obtained.

Case 2

A 29-year-old female noticed a mass in the left breast 6 months before her first visit to our hospital. The mass revealed itself four years after the birth of her first child. On physical examinations, a hard mass with redness and erosion of the skin was located 5.4cm distant from the nipple and in the upper outer quadrant of her left breast. The maximum diameter was 2.4cm. Mammograms revealed a spiculated mass.

Fig. 3. Inflammatory reaction with multinucleated giant cells is shown (case 1). (H.E. $\times 200$)

Fig. 4. Inflammatory reaction in the lobules is shown. The infiltration predominantly consisted of lymphocytes (case 2). (H.E. $\times 100$)

Ultrasonograms showed an irregularly-shaped hypoechoic mass closely to the skin. No abnormality was detected by thermograms. To confirm the final diagnosis, excisional biopsy was performed.

Microscopic examinations showed inflammatory infiltration particularly in the lobules (Fig. 4). Ductal dilatation was not remarkable. Some granulomatous forms and destruction of epithelial elements were found. The pathological diagnosis was chronic mastitis with granuloma.

DISCUSSION

Most benign breast tumors are to be differentiated clinically from breast cancers. Some are still difficult to be diagnosed because these cases resemble carcinoma in their clinical characteristics, resulting in having a risk of mastectomy. In two patients presented in this report, carcinoma was suspected because of hard consistency, irregular shape, skin retraction, mammographic or ultrasonographic features of malignancy, and so on. Excisional biopsies were necessary to obtain the diagnosis of chronic mastitis.

There are some types of chronic inflammatory lesions such as granulomatous lobular mastitis, plasma cell mastitis, duct ectasia and periductal mastitis.

Granulomatous lobular mastitis and plasma cell mastitis usually occur in relatively young women while duct ectasia occurs in older women⁷⁾. In case 1, the pathological diagnosis was chronic mastitis with granuloma as the subsequent change to duct ectasia. Duct ectasia is a relatively common disorder among perimenopausal and postmenopausal women. The etiology of this disorder still remains indefinite. Some authors propose that duct dilatation caused by glandular atrophy and involution is the primary process, leading to stasis of secretion in ducts followed by leakage of lipid material eliciting periductal inflammation⁵⁾. Others suggest that periductal inflammation primarily occurs, leading to weakening of the muscle layer of the ducts and secondary dilatation^{7,8)}. This idea corresponds with the fact that periductal mastitis occurs usually in younger women, while duct ectasia is found in older women.

In case 2, the clinicopathological characteristics corresponded to the those of granulomatous lobular mastitis. The patient was a young woman and only four years had passed since the last delivery until the detection of the mass. The lesion was located 5.4cm distant from the nipple, while the lesion of case 1 was located near the areolar region. On microscopic examinations, there were predominantly lobular lesions and some scattered ductal lesions consisting of lymphocytes, plasma cells, histiocytes and giant cells. Ductal dilatation was not remarkable in this case. There are several reports about granulomatous mastitis^{9,10)}. However, to our knowledge, no reports about granulomatous lobular mastitis are found in Japan. The etiology of granulomatous lobular mastitis is unknown. It has been speculated probably to be due to an immunological response^{1,7,11)}. Since this disorder is found among parous women, pregnancy and lactation may possibly play some part in this event.

There are some disorders which clinically resemble breast cancer. It is not easy to differentiate them from carcinoma by clinical examinations. It is better to perform thermography and fine needle aspiration

cytology as additional examinations. Excisional biopsy is necessary to confirm the final diagnosis.

REFERENCES

- 1) Kessler E, Wolloch Y (1972) Granulomatous mastitis: A lesion clinically simulating carcinoma. *Am J Clin Pathol* 58: 642-646
- 2) Brown KL, Tang PHL (1979) Postlactational granulomatous mastitis: A localized immune phenomenon. *Am J Surg* 138: 326-329
- 3) Davies JD, Burton PA (1983) Postpartum lobular granulomatous mastitis (Letter). *J Clin Pathol* 36: 36
- 4) Donn W, Rebbeck P, Wilson C, Gilks CB (1993) Idiopathic granulomatous mastitis: A report of three cases and review of the literature. *Arch Pathol Lab Med* 118: 822-825
- 5) Haagensen CD (1951) Mammary-duct ectasia. *Cancer* 4: 749-761
- 6) Hughes LE, Mansel RE, Webster DJT (1987) Aberrations of normal development and involution (ANDI): A new perspective on pathogenesis and nomenclature of benign breast disorders. *Lancet* II: 1316-1319
- 7) Rosen PP, Oberman HA (1993) *Atlas of Tumor Pathology*. Armed Forces Institute of Pathology, Washington DC, pp27-32
- 8) Dixon JM (1989) Periductal mastitis/duct ectasia. *World J Surg* 13: 715-720
- 9) Takahashi H, Hongo T, Sasaki F, Hata Y, Uchino J, Annen K, Fujioka Y (1992) A case of chronic granulomatous mastitis which needed to be differentiated with the breast cancer (in Japanese with English abstract). *Jpn J Breast Cancer* 7: 637-642
- 10) Asami Y (1993) A case of granulomatous mastitis associated with a gastric cancer (in Japanese with English abstract). *J Jpn Soc Clin Surg* 54: 95-102
- 11) Miliauskas JR, Pieterse AS, Williams RS (1995) Granulomatous lobular mastitis. *Aust N Z J Surg* 65: 139-141