Unilateral Failure of Lactation After Breast Biopsy

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The recent literature contains prolific support for the use of breast self-examination and mammography in the detection of breast cancers. It is also generally agreed that suspicious lesions found by clinical examination or mammography should be biopsied. Though the majority of cancers are found in women aged over 40 years, a rising interest in screening for breast disease will increase the likelihood of breast biopsy in reproductive-age women. The following report describes a patient who suffered unilateral failure of lactation subsequent to breast biopsy and discusses physiological mechanisms that might explain the failure.

CASE REPORT

A 36-year-old woman noted a lump during breast self-examination and underwent biopsy of the right breast after suspicious calcifications were found by xeromammography. The surgeon elected to localize the pathologic lesion by using external coordinate measurements and to excise a generous amount of tissue as advocated to assure removal of all the disease.[1] Biopsy was accomplished with a wedge-shaped resection at the nine o'clock position through a circumareolar skin incision. An excellent cosmetic result was obtained by closing the glandular tissue with interrupted 2-0 chromic catgut and approximating the skin edges with running multifilament polyglycolic acid suture. The pathology report indicated tissue consistent with a benign "fibrocystic" condition.

The patient was delivered of her second child nine months later. The infant nursed vigorously within the first few hours of life and continued to do so at three- to four-hour intervals over the next three days. The breasts became engorged symmetrically during that time. By the fourth postpartum day the patient noted that the right breast remained engorged after nursing, although the left breast seemed relieved of its supply. That day she began to apply warm packs to the right breast and used oxytocin nasal spray before each feeding. The infant was always placed to the right breast initially and moved to the left only when frustrated. After several more days an electric breast pump was added to the regimen, as the infant would not suck for long without milk return. All modalities were used at each feeding, and they were continued for six weeks.

At no time was more than 2 mL of milk obtained from the right breast using the electric pump. With close observation of the nipple, it appeared that all of this milk exuded from a single duct at the three o'clock position. After a month of concentrated effort as outlined above, there was a significant disparity in the size of the breasts. The patient had noted no difficulty in nursing her first child using both breasts, and her breasts had always been of equal size. In spite of the unilateral nature of this condition, it was a source of significant concern for the patient. The infant continued to nurse at the left breast and achieved an expected growth rate.

DISCUSSION

Lactation occurs through a complex interaction of endocrine, neurological, emotional, and physical factors. During pregnancy the effects of several hormones prepare the breasts for lactation.[2] After birth the sucking of the infant increases the circulating blood levels of prolactin and oxytocin.[3] Together these hormones cause further production and excretion of milk products. Emotional factors and environmental stresses are associated with reduced blood flow to the breasts[3] and inhibition of oxytocin release.[4] Either stress or reduced hormonal activity could explain a mother's inability to lactate. However, milk production in both breasts would be affected by these factors. The initial engorgement of this patient suggests normal hormonal

Submitted, revised, October 8, 1985.

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preparation during pregnancy and the expected prolactin effect. Continued success at the left breast casts doubt on a systemic oxytocin insufficiency. Late unilateral failure therefore suggests normal neuroendocrine and psychodynamic function as well as normal perfusion.

Changes in the physical structure of the breast also affect function during lactation. The production of milk remains constant for several days postpartum, even when milk is not removed from the breast. After that time synthesis of milk products declines rapidly, and the alveoli show changes in intracellular structure.[3] This situation has been created artificially in several species of mammals. Indeed, in one such study, the milk ducts were ligated unilaterally prior to conception.[5] Milk production in the altered glands continued normally for a day or two postpartum. As in other such studies, experimenters then noted collapse of the capillary beds in the obstructed glands; thereafter, metabolic activity and milk production decreased markedly, and the tissue became unresponsive to circulating prolactin and oxytocin.[5] Such changes occurred unilaterally, and normal lactation continued in the unoperated glands.

The course followed by this patient parallels that of the experimental animals. Her breasts became engorged symmetrically, but the right ducts were never relieved of their initial production. While events proceeded normally for the left breast, milk stagnated in the right breast. As has been shown experimentally, such a situation is followed by a substantial change in intracellular structure and blood flow. The likelihood of attaining normal function subsequent to such change seems quite remote. In this woman, these events transpired several months after breast biopsy. It seems most probable that a majority of the ducts became obstructed when the breast tissue defect was closed with 2-0 chromic catgut, repeating in this patient the study done by Moore and Forsyth.[5] Though the approximation of the glandular tissue seems to make sense cosmetically, it is for cosmetic reasons that Margolese[6] has proscribed such suturing in the upper half of the breast. In his series, large defects filled in with serum and fibrin, maintaining breast contour and volume.

This case raises important issues for physicians who biopsy breasts of women in their reproductive years. Colbassini and colleagues[7] report that internal localization techniques (dye or wire) result in a smaller amount of tissue removal than the external method. While cosmetic considerations are important, the surgeon must weigh these against the need for an adequate biopsy and the threat to future milk ejection. The factors of future pregnancy, lactation, and cosmesis should all be included in any discussion with the patient prior to breast biopsy.

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