

Breast Lumps in Men: Four Case Reports and a Literature Review

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Four cases of men who consulted their family physicians because of breast lumps are reported. Their final diagnoses were as follows: intraductal carcinoma, gynecomastia, seminoma, and lipoma. A review of the literature revealed a lack of data on the prevalence of breast lumps among male adults, considerable ambiguity in clinical definitions of the term "gynecomastia," and a

general uncertainty about the prevalence of malignancy in such lesions.

Further epidemiologic studies are needed to determine the true prevalence and nature of breast lumps in men.

Key words. Breast disease; breast neoplasms; gynecomastia; men; biopsy, needle. (*J Fam Pract* 1993; 37:180-184)

Breast lumps among adult male patients seem to be uncommon in family practice¹; consequently they may pose a special diagnostic challenge. Their presentation may also be late or delayed, perhaps because the male breast is not subject to the same widespread lay and professional attention accorded the female breast. As a rule, men do not regularly examine their breasts, nor do their physicians.²

This report details four cases of breast lumps in men encountered over a short period in two Israeli family practices, along with a review of current approaches to the classification, diagnosis, and management of this condition.

Case Reports

Case 1

A 61-year-old obese man consulted his family physician after telling his daughter, a medical student, that he had noticed a lump in his left breast. The patient was receiv-

ing treatment for longstanding hypertension with nitrates, verapamil, and captopril, but otherwise his medical history was unremarkable. On examination, a firm, mobile mass of about 1 × 2 cm was detected beside the patient's left nipple. There was no skin retraction. Small lymph nodes were present in the left axilla. A fine-needle aspiration (FNA) biopsy was performed, and cytologic examination revealed only gynecomastia. A subsequent open biopsy demonstrated an invasive, moderately anaplastic, intraductal carcinoma. The patient consequently underwent a modified radical mastectomy followed by chemotherapy. One year after surgery there was no evidence of tumor recurrence.

Case 2

A 54-year-old man was referred to his family physician from a local hospital emergency department, where he had been examined following a complaint of weakness. His previous medical history was unremarkable. On physical examination, a previously undetected, firm, round, mobile lump about 1.5 cm in diameter was discovered near the patient's left nipple. There was no skin retraction, and no regional lymph nodes were palpable. Results of laboratory investigations, including thyroid and liver function tests, prostate-specific antigen (PSA), and the serum β -hCG level, were within normal limits. The diagnosis following an FNA biopsy was gynecomast-

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tia. A subsequent open biopsy confirmed the FNA biopsy diagnosis.

Case 3

A 26-year-old man consulted his family physician 2 months after first noticing a lump in his left breast. There was no relevant past medical history. Physical examination revealed a small, round, firm, mobile lump about 1.5 cm in diameter under the left areola without skin retraction. A small lymph node was present in the left axilla. There was also a small, solid mass palpable in the right testis. This patient was referred for a surgical opinion, and was subsequently admitted to the hospital, where a right radical orchiectomy was performed because of the testicular mass. It was assumed preoperatively that the breast lump was gynecomastia on the basis of an elevated serum β -hCG level. The histopathologic diagnosis of the testicular lesion was anaplastic seminoma, stage I. Surgery was followed by radiotherapy. The serum β -hCG level fell to normal postoperatively, and the breast lump disappeared. A year after surgery the patient remained well, with no recurrence of either seminoma or breast lump.

Case 4

A 41-year-old, otherwise healthy man was referred to his family physician from his place of work where, during the course of a medical checkup program for employees, a lump was detected in the lateral aspect of his left breast. The patient had discovered the lump about 1 year before the visit. The lump was soft, mobile, and about 2 × 3 cm in size. Physical examination was otherwise unremarkable. The FNA biopsy diagnosis of lipoma was subsequently confirmed by excision biopsy.

Discussion and Literature Review

Although breast lumps in men seem to be encountered infrequently in family practice, no published epidemiologic studies of their prevalence in primary care populations appear to exist. However, since the four cases described here were encountered over a 1-year period in two family medicine practices, male breast lumps may be more common than is generally assumed.

Diagnostic Delay

There may be a delay between the formation of a mass in the adult male breast, its detection by the patient, and its being brought to his physician's attention. By contrast,

Major Causes of Gynecomastia

Physiological	Metabolic
Neonatal	Cirrhosis
Puberty	Hyperthyroidism
Aging	Renal failure or dialysis
Drugs	Starvation or refeeding
Tumors	Hypogonadism
Bronchus	Viral
Testis	Trauma
Adrenal	Maldescent
	Chromosomal

male babies and adolescents are usually referred immediately to the physician after parental detection of such lesions. A longer diagnostic delay in cases of male, as opposed to female, breast cancer has been reported.²⁻⁵ Similarly, breast cancer in men has been reported to be diagnosed at a more advanced stage than in women.⁴ In one series the delay recorded in men between their noticing the lump and bringing it to their physicians' attention was 6 months,⁶ and in our case 4, the delay was a full year.

Definition of Gynecomastia

There is much confusion in the literature about the definition and classification of adult male breast lesions. A major reason for this stems from the use of the term "gynecomastia" both as a *clinically* descriptive diagnosis and as a definitive *histopathologic* diagnosis. In many articles there is ambiguity about whether gynecomastia refers to the former or the latter. Further, many authors use the terms "gynecomastia," "breast lump," "breast mass," and "breast enlargement" interchangeably.⁷⁻⁹ In this discussion, "gynecomastia" (within quotation marks) refers to the clinical condition, and *gynecomastia* (in italics) to a proven histopathologic diagnosis.

Whatever the underlying cause, gynecomastia is always thought to result from an increase in the effective estrogen-to-testosterone ratio in the serum, and occasionally in the breast tissue alone.¹⁰ A list of the more important conditions that can account for such a hormonal imbalance is given in the Table.

Reasonably uniform histopathologic definitions of *gynecomastia* do exist. These include "a proliferation of a dense periductal hyaline, collagenous connective tissue, with marked hyperplasia of the ductal linings,"¹¹ "the male analogue of fibrocystic change in the female with morphologic features similar to intraductal hyperplasia,"¹² and "prominent ductules in the loose connective tissue of the male breast which in time become changed to dense hyalinized fibrous tissue."¹⁰ On the other hand, "gynecomastia" is commonly employed in the literature

to cover a broad spectrum of clinical breast phenomena in men. These include "excess breast tissue,"¹⁰ "a firm disc beneath the nipple,"¹⁰ "a rubbery discrete sub-ocular plaque of breast tissue, freely movable and non-adherent to skin or underlying tissue,"⁹ "breast enlargement,"^{13,14} and "mammary hypertrophy."¹³ "Gynecomastia" can be found defined as being exclusively bilateral.¹⁰ Other investigators assert that apart from neonatal and adolescent cases, and those secondary to hormone-producing tumors or hormone administration, it is invariably unilateral with an almost equal frequency on each side.⁹

Because of this plethora of different descriptions and definitions, it would probably be more helpful to discard completely the clinical use of the term "gynecomastia," and limit the nomenclature of breast lumps in men to the descriptive terms "mass," "lump," "diffuse swelling," or "enlargement," as is most appropriate. *Gynecomastia*, as a definitive diagnosis, would be better restricted to those cases shown, after open biopsy, to conform with accepted histopathologic definitions of the condition.

Adult Male Breast Lumps and Malignancy

Male breast cancer accounts for less than 0.5% of all cases of male cancer,^{4,7} and constitutes only about 1% of all reported cases of mammary carcinoma.^{9,15} In the United States, where 600 new cases are diagnosed every year,⁶ the annual incidence of breast cancer in men is 0.7/100,000.⁴

The probability of a breast lump in a male adult being malignant is difficult to establish accurately from the literature. In one series of 188 FNA biopsies performed over an 18-year period on men with "gynecomastia" or "other male breast lesions," malignancy was detected in 14 cases (7.3%).⁶ In another study, only one malignancy was discovered among 44 men with "gynecomastia."¹⁶ In contrast, a further study determined that among all breast lesions in older men, 25% were carcinoma, 65% *gynecomastia*, and 10% other benign lesions.¹⁷ Such studies, however, have invariably emanated from secondary or tertiary care facilities. A lack of comparable data from the primary care setting means that the true malignancy rate in cases from unselected adult male populations remains unknown. The most common malignancy is primary infiltrating ductal carcinoma,^{4,6,8} which accounts for about 80% of all primary male breast cancer.⁶ Papillary, medullary, and mucinous carcinomas,¹⁸ leiomyosarcoma,^{6,19} and lymphomas²⁰⁻²² are less commonly found.

Few published cases of secondary tumors in the

adult male breast exist. The primary lesion is usually in the prostate,^{14,23} but metastases from carcinoma of the large bowel,⁶ lung,²⁴ and urinary tract²⁴ have also been described. In addition, even when a breast lump in a male adult is confirmed to be *gynecomastia*, this may still constitute a marker for malignancy elsewhere, for example in the lung, testes, and the adrenal glands.^{7,25,26} Some dermatologic conditions can present as breast lumps and thereby mimic male breast cancer. These include basal cell carcinomas, metastatic squamous cell carcinomas, and hemangiomas.²⁷ A breast lump in the male adult may also be caused by neurofibromatosis²⁸ or granulomatous diseases.²⁹

Various authorities^{4,6,9,10} consider that *gynecomastia* is not a precursor of male breast cancer except in those with Klinefelter's syndrome. In those patients, breast cancer may be as much as 20 times as common as in the general adult male population.^{6,9,10} To complicate this issue, areas of *gynecomastia* can often be found existing side by side with male breast cancer, perhaps in up to 40% of breast malignancies in men.^{4,8,15}

In one report of 27 patients who were available for follow-up from a previously assembled cohort of 52 men with breast malignancies,³⁰ Bavafa and colleagues⁴ noted that 60% had axillary lymph node involvement, 50% had changes in the nipple, and 25% had generalized metastases. In an additional 10 cases reported in the same study, 7 patients had skin and nipple involvement and 3 had palpable axillary nodes. However, in one third of the patients with unilateral "gynecomastia" among a large series of 406 cases of "gynecomastia" collected over a period of 23 years, the axillary lymph nodes were also enlarged, and in those with bilateral "gynecomastia" the frequency was even greater.⁷ In both situations, multiple lymph nodes were as frequent as a solitary node. In 9% of all patients reported in this study, nipple changes were observed, yet in not one of the 406 patients (267 [66%] of whom were over 20 years of age) was a malignancy diagnosed.

Such studies sustain a conclusion that clinical examination alone is generally unhelpful in distinguishing between benign and malignant causes of breast lumps in men, at least in those seen at secondary referral centers.

Diagnostic Evaluation

Both mammography and ultrasonography have been used in the investigation of male breast lesions^{31,32} but have so far been generally considered inferior to FNA and open biopsy in establishing an accurate diagnosis.^{6,10,16}

False-positive results for malignancy following FNA

biopsy are uncommon. Aday et al,³³ Wanebo et al,³⁴ and Saunders et al³⁵ all reported a 100% specificity rate for FNA biopsy among their respective series of 137, 398, and 105 patients with breast lumps and masses. Frable³⁶ reported a 97% rate in 853 biopsies, and Palombini et al³⁷ a 90% rate in 674 biopsies. The reference standard in these studies was the subsequent open biopsy result of the lesion.

The sensitivity rate of FNA biopsy for detecting breast malignancy is lower, varying between 36%³⁵ and 89%³⁶ in different reports (most of these studies were of women). This is less important, however, because the paramount consideration is the *exclusion* of malignancy. In such circumstances whether an FNA biopsy that is found to be negative for malignancy is a true or a false negative is immaterial. An open biopsy must automatically follow *every* FNA biopsy that fails to demonstrate malignancy.^{10,33,35,36}

Compared with open breast biopsy, FNA biopsy has several advantages. Most important, it is cheaper, and it causes fewer side effects, less personal inconvenience, and less trauma for the patient.^{33,36,37} Further, in some centers it may be possible, for technical or logistical reasons, to obtain the cytologic result of an FNA biopsy more rapidly than the histologic result of an open biopsy.³⁴ In such circumstances, anxiety experienced by a patient while awaiting biopsy outcome may be reduced. The question as to whether all men with breast lumps should have an initial FNA biopsy and be referred for subsequent open biopsy only when this is negative for malignancy (as is currently an accepted policy for women with breast lumps), or whether all should immediately have an open biopsy performed, remains unanswered in the literature, probably because of the limited amount of clinical data available. At the present time, therefore, family physicians should refer such cases for a surgical opinion and then proceed in accordance with the surgeon's recommendations. It is to be hoped that a definitive policy regarding the exact role of FNA biopsy in such cases will be established.

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