

## A Pilomatricoma Misdiagnosed as Male Breast Cancer

### 남성에서 유방암과 유사하게 보이는 모기질세포종

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Pilomatricoma is a benign tumor of subcutaneous tissue that arises from hair follicle matrix cells and is usually asymptomatic. Several clinical reports of pilomatricoma have been published in Korean radiology, dermatology, and pathology literature. However, to the best of our knowledge, there have been no Korean case reports of pilomatricoma mimicking male breast cancer. We report a case of pilomatricoma presenting as an exophytic palpable mass in the left breast of an adult male.

#### Index terms

Breast

Male

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## INTRODUCTION

Pilomatricoma is a benign neoplasm originating from hair follicle matrix cells. It was first described by Malherbe and Chenantaisare, who termed the disease “epithelioma of Malherbe,” as they believed it was derived from the sebaceous glands (1, 2). Pilomatricomas often present as a asymptomatic, solitary, hard, slow-growing subcutaneous mass, and the overlying skin may occasionally have a bluish discoloration (2). Pilomatricomas are not uncommon and are present in 1 out of every 500 skin specimens submitted to pathologists (3).

There have been several reports of pilomatricoma of the adult male breast in the English medical literature but to the best of our knowledge there are no reports of these cases in the Korean medical literature (4-6). Almost all published case reports have emphasized that pilomatricoma mimics breast cancer.

Here, we present a case involving an adult male with an incidentally discovered slow-growing palpable mass on his left

breast that mimicked male breast cancer.

## CASE REPORT

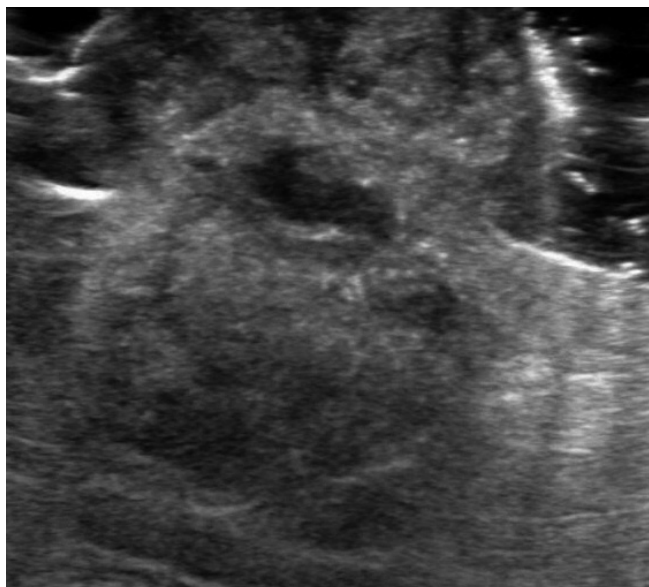
A 69-year-old man presented to our hospital because of a painless palpable mass on his left breast, which had been growing slowly for 10 years, but had recently enlarged rapidly.

Upon initial physical examination, the tumor appeared as a 3.7 × 4.0 cm superficial, exophytic, ulcerative, erythematous soft tissue mass on the patient's left upper inner breast. Nothing of clinical interest was noted in the patient's family history.

A diagnostic mammogram showed an irregular, exophytic high-density mass with dystrophic calcifications and coarse heterogeneous calcifications (Fig. 1). Ultrasonography showed an irregular, indistinct, exophytic hyperechoic mass at 10 o'clock, 2 cm from the left nipple (Figs. 2, 3). Diffuse skin thickening and soft tissue edema were also present. There were no pathologic lymph nodes in the ipsilateral axilla. These results suggested



**Fig. 1.** A 69-year-old man with an exophytic, erythematous, firm mass with superficial ulceration in the left breast. Mammography shows a high-density mass with dystrophic calcifications and coarse heterogeneous calcifications in the upper inner quadrant of the left breast, measuring  $4.7 \times 4.6$  cm. Diffuse skin thickening is also present.



**Fig. 2.** Ultrasonographic transverse image of the left breast shows an indistinct, irregular, exophytic hyperechoic mass in the skin and subcutaneous layers.

possible malignancy, and surgical excision was recommended.

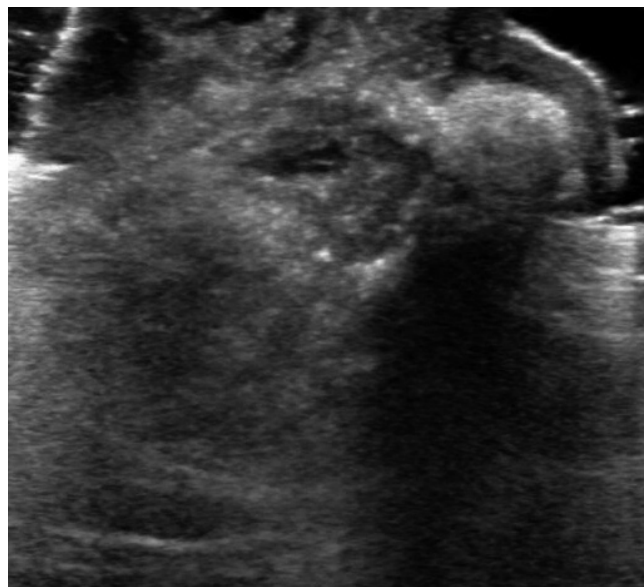
Histologic examination revealed a well-demarcated, nodular, elevated grayish mass with a central ulcer, calcification, and hemorrhage on gross examination. The tumor showed focal necrosis and frequent mitotic figures, but no atypical mitoses were present. A proliferation of basophilic cells and ghost cells was visible under microscopic examination (Fig. 4).

## DISCUSSION

Pilomatricoma is the most commonly occurring superficial tumor in children, occurring in about 10% of all resected tissue samples (3). A slight female predominance (female-male ratio, 1.1:1–2.5:1) has been noted (2, 3, 7). The main symptom that presents is a hard, subcutaneous, slow-growing mass with skin discoloration.

The most commonly affected regions are the head and neck, including the preauricular, cheek, and periorbital scalp areas, followed by the upper extremities and trunk (3, 7-9). Most head and neck pilomatricomas show varying degrees of calcification and ossification (2).

On the mammogram, the pilomatricoma of the breast was visible as a mass with well-defined margins that contained gross (pleomorphic) calcifications (4-6, 10). In this case, dystrophic calcification and coarse heterogeneous microcalcifications were



**Fig. 3.** Ultrasound transverse scans of the same patient shows irregular hyperechoic mass with associated calcification resulting in posterior acoustic shadowing.

noted. In mammography, pathological breast calcifications are deposits of calcium within the breast tissue. However, the cutaneous calcification present in pilomatricoma is the deposition of insoluble calcium salts in subcutaneous tissue (10).

The ultrasonographic presentation of pilomatricoma is well established. Pilomatricoma typically presents as a well-defined mass with inner echogenic foci and a peripheral hypoechoic rim or a completely echogenic mass with strong posterior acoustic shadowing in the subcutaneous layer (9). In our case, the features found on the sonograph fit the latter case of typical pilomatricoma (heterogeneous hyperechoic mass with focal acoustic shadowing).

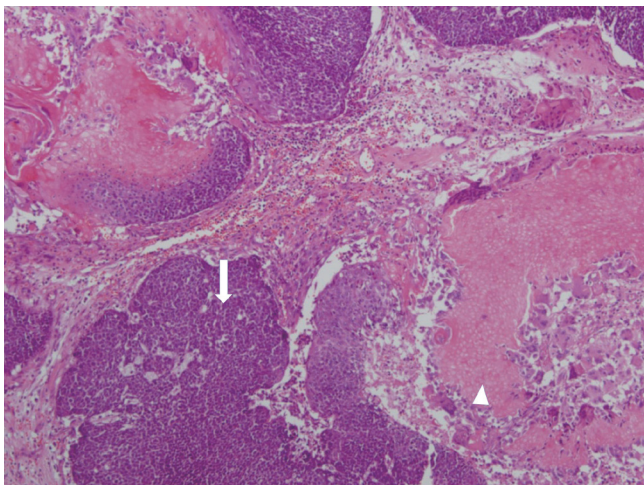
Generally, histopathology is required to make a true diagnosis of pilomatricoma. Histopathologically, the tumor is composed of irregularly shaped islands of epithelial cells, which contain basaloid cells, eosinophilic keratinized (ghost or shadow) cells, and cells that are transitional between the former two types. Other identifying features include calcification within the shadow cell islands, a foreign-body giant cell reaction with chronic and acute inflammatory cells, and ossification. This case represents an example of the uncommon perforating variety of pilomatricoma. These pilomatricomas are usually located in the reticular dermis and extend into the subcutaneous tissue, superficial papillary locations, and mid-dermis. Transepidermal elimination is one of the characteristics of perforating pilomatricoma. It has been reported that perforating pilomatricomas grow faster than classic pilomatricomas. Most pilomatricomas

do not cause clinical complications. The treatment of choice is surgical excision and the recurrence rate is 2–6% (1). Malignant transformation of pilomatricoma (pilomatrix carcinoma) is very rare.

In summary, we suggest that if slow-growing superficial breast masses in the skin and subcutaneous layers present as hypoechoic masses with calcification, pilomatricoma should be included in the differential diagnosis.

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**Fig. 4.** Microscopic examination (hematoxylin-eosin, 100 × magnification) shows a proliferation of basophilic cells (arrow) and ghost cells (arrowhead).

## 남성에서 유방암과 유사하게 보이는 모기질세포종

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모기질세포종은 모근세포에서 유래하는 피하조직의 양성종양이다. 대부분 두경부에서 발생하며 유방에서 매우 드물게 관찰된다. 이에 저자들은 남성환자에서 유방암과 유사하게 관찰된 모기질세포종으로 확진된 증례를 경험하여 임상소견과 함께 초음파와 유방촬영 영상소견을 보고하고자 한다.

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