Case Report

A Pilomatricoma Misdiagnosed as Male Breast Cancer

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INTRODUCTION

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
Pilomatricoma
Ultrasound
Mammography

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 x 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...
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
Pilomatricoma of the Male Breast

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.

REFERENCES

1. Forbis R Jr, Helwig EB. Pilomatrixoma (calcifying epithelio-
oma). Arch Dermatol 1961;83:606-618
2. O’Connor N, Patel M, Umar T, Macpherson DW, Ethunan-
dan M. Head and neck pilomatricoma: an analysis of 201
3. Julian CG, Bowers PW. A clinical review of 209 pilomatri-
4. Gilles R, Guinebretière JM, Gallay X, Vanel D. Pilomatrixo-
ma mimicking male breast carcinoma on mammography.
AJR Am J Roentgenol 1993;160:895
5. Becker TS, Moreira MA, Lima LA, de Oliveira EL, Freitas-
Breast J 2010;16:89-91
6. Hubeny CM, Sykes JB, O’Connell A, Dogra VS. Pilomatrixo-
ma of the adult male breast: a rare tumor with typical ul-
7. Pirouzmanesh A, Reinish JF, Gonzalez-Gomez I, Smith
EM, Meara JG. Pilomatrixoma: a review of 346 cases. Plast
Reconstr Surg 2003;112:1784-1789
8. Cigliano B, Baltogiannis N, De Marco M, Faviou E, Setti-
mi A, Tilemis S, et al. Pilomatricoma in childhood: a retro-
spective study from three European paediatric centres. Eur
J Pediatr 2005;164:673-677
9. Hwang JY, Lee SW, Lee SM. The common ultrasonographic
features of pilomatricoma. J Ultrasound Med 2005;24:1397-
1402
10. Reynaud P, Orliaguet T, Robin YM, Buono JP, Darcha C, Sus-
zanne F, et al. [Mammary pilomatrixoma clinically mimicking
carcinoma]. Ann Pathol 1997;17:213-214

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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