EP-041

골화성 모기질종 증례보고 및 발병기전에 대한 새로운 가설

(Ossifying Pilomatricoma and a Novel Hypothesis for Its Pathogenesis)

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Purpose: Pilomatricoma is a benign skin appendageal tumor derived from hair follicle matrix cells that commonly affects the head, neck, and upper extremities in the pediatric population. Since the original tumor description, diverse variants have been reported in the literature. Among its variants, ossifying pilomatricoma, characterized by florid osseous metaplasia, is recognized as a distinct entity. However, its pathogenesis remains unclear. This study presents a rare case of ossifying pilomatricoma and proposes a novel hypothesis regarding its pathogenesis based on a comprehensive literature review.

Methods: A 14-year-old boy presented with a 5-year history of an asymptomatic protruding mass in the right preauricular region. Physical examination revealed a firm, dome-shaped mass measuring 1.5 cm in diameter, adherent to the overlying skin without skin changes. The lesion was completely excised under local anesthesia, and the specimen was submitted for histopathological examination.

Results: Gross examination revealed a reddish-brown, well-circumscribed mass with a stony hard consistency. Histopathological examination demonstrated a nodular tumor with extensive osseous metaplasia, composed predominantly of shadow cell clusters and laminated trabecular bone without basaloid components. The stroma exhibited marked ossification with osteoclast-like multinucleated giant cells. Bone marrow–like structures containing mononuclear cells and fibrofatty tissue were observed within the bony trabeculae. Immunohistochemical staining showed positivity for anti-myeloperoxidase antibodies in these cells. Based on these findings, the lesion was diagnosed as ossifying pilomatricoma. No recurrence or complications were observed during the 6-month follow-up period.

Conclusion: We propose that metaplastic ossification in ossifying pilomatricoma represents a form of foreign body reaction to keratinous materials containing shadow cells in long-standing lesions, serving as a walling-off mechanism to protect surrounding tissues. Further studies are required to elucidate the exact pathogenesis of this process.

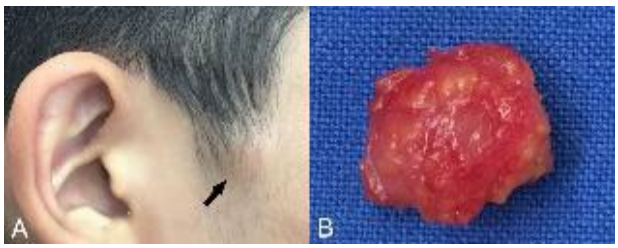

Figure 1.
(A) A dome-shaped mass in the preauricular region (arrow).
(B) A gross specimen shows a reddish-brown colored globular mass covered with fibroadipose tissue.

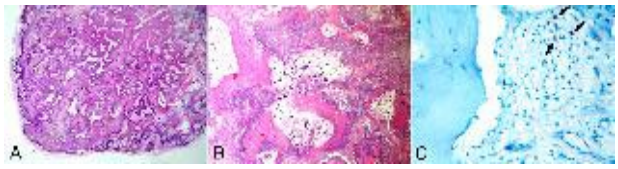

Figure 2.
(A) Histopathological study shows a well-circumscribed nodular tumor with extensive ossification (H&E, ×15).

(B) Histopathological study shows shadow cell clusters, laminated trabecular bones, osteoclast-like multinucleated giant cells, and bone marrow structures enclosed by bony trabeculae (H&E, ×100).

(C) Immunohistochemical study shows a few cells (arrows) positive for antimyeloperoxidase antibodies within the bone marrow structure (400 ×).