LETTER TO THE EDITOR

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Maxillary Sinus Cholesterol Granuloma: An Unanticipated Diagnosis in a Paediatric Case

Maksiller Sinüs Kolesterol Granülomu: Pediatrik Olguda Beklenmedik Bir Tanı

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To the Editor,

Cholesterol granuloma (CG) is typically linked with chronic mid ear disease and is an uncommon histopathological finding in the maxillary sinus (MS). It consists of granulation tissue formation, intensive cholesterol crystal aggregates, which lead to foreign body giant cell reaction. Althought exact pathogenesis is unclear however, it is frequently linked to a history of trauma, sinusitis, rhinitis, and paranasal sinus surgery, particularly since these conditions can result in localized bleeding[1]. Cholesterol is thought to originate from the cell membranes of erythrocytes that are damaged during bleeding, leading to its crystallization due to poor drainage[2]. This condition is more frequently observed in mid-aged individuals. However, we present an unusual paediatric patient of CG in the MS, highlighting its uncommon occurrence and the significance of discriminative diagnosis.

Twelve years old girl was referred to otolaryngology clinic with a 5-year history of nasal obstruction that had exacerbated over the last month following a viral upper respiratory tract infection. Her symptoms included increasing clear nasal discharge, postnasal drip, and headache, predominantly in the left anterior and frontal regions. She reported no additional systemic or neurological complaints. On examination, grade 3 adenoid vegetation was observed, along with mucopurulent discharge progressing from the left osteomeatal complex to the nasopharynx via the middle meatus, and tenderness in the left maxillary region. She was initially diagnosed with acute rhinosinusitis and was began on antibiotic therapy, analgesics, and decongestants.

Despite 10 days of treatment, the patient's symptoms did not improve. On follow-up examination, adenoid vegetation persisted, but the previously noted purulent discharge from the left osteomeatal complex and left maxillary tenderness were no longer observed. Consequently, further investigation was warranted to differentiate the cause of the headache. Contrast-enhanced nasopharyngeal and cranial magnetic resonance imaging revealed complete opacification of the left MS, along with an additional oval-shaped, denser opacity measuring 2x1.4 cm located at the sinus floor, separated from the MS opacity. There was no significant bone erosion, and no intra-

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or extracranial pathology involving other anatomical structures was observed. The patient underwent adenoidectomy and MS surgery.

Both the MS lesion and the adenoidectomy specimens were sent for pathological examination. Preoperative diagnosis of the MS lesion was sinonasal polyp. The patient remained hospitalized for one day postoperatively. The patient's symptoms had subsided by the end of the first postoperative week, and her follow-up care is ongoing.

Gross examination revealed a polypoid lesion, 2x1.4 cm in diameter, with a brown-tan cut surface. Histopathologic analysis showed respiratory epithelium-lined tissue with numerous subepithelial cholesterol crystals, surrounded by multinucleated giant cells and macrophages. Destructed erythrocytes, hemosiderin-laden histiocytes, oedema, plasma cells, lymphocytes, and fibrotic changes were also present (Figure 1). The adenoidectomy sample was diagnosed as reactive lymphoid hyperplasia with associated chronic inflammation.

CG is a histological diagnosis characterized by granulation tissue including foreign body giant cells and numerous cholesterol clefts. While CG mostly detected in the mastoid bone and mid ear, CG in the MS is an uncommon lesion, especially in children. To our knowledge, this patient is the fifth case of CG presenting as an antrochoanal polyp in paediatric cases[1-3]. Potential aetiological causes of MS CG include impaired drainage, interrupted ventilation, and bleeding into the sinus, leading to destruction of red blood cells and cholesterol collection from erytrocytes' membranes. Surgical excision is recommended treatment. Differential diagnoses for CG include mucoceles, allergic/inflammatory polyps, sinus cysts, and tumors, with

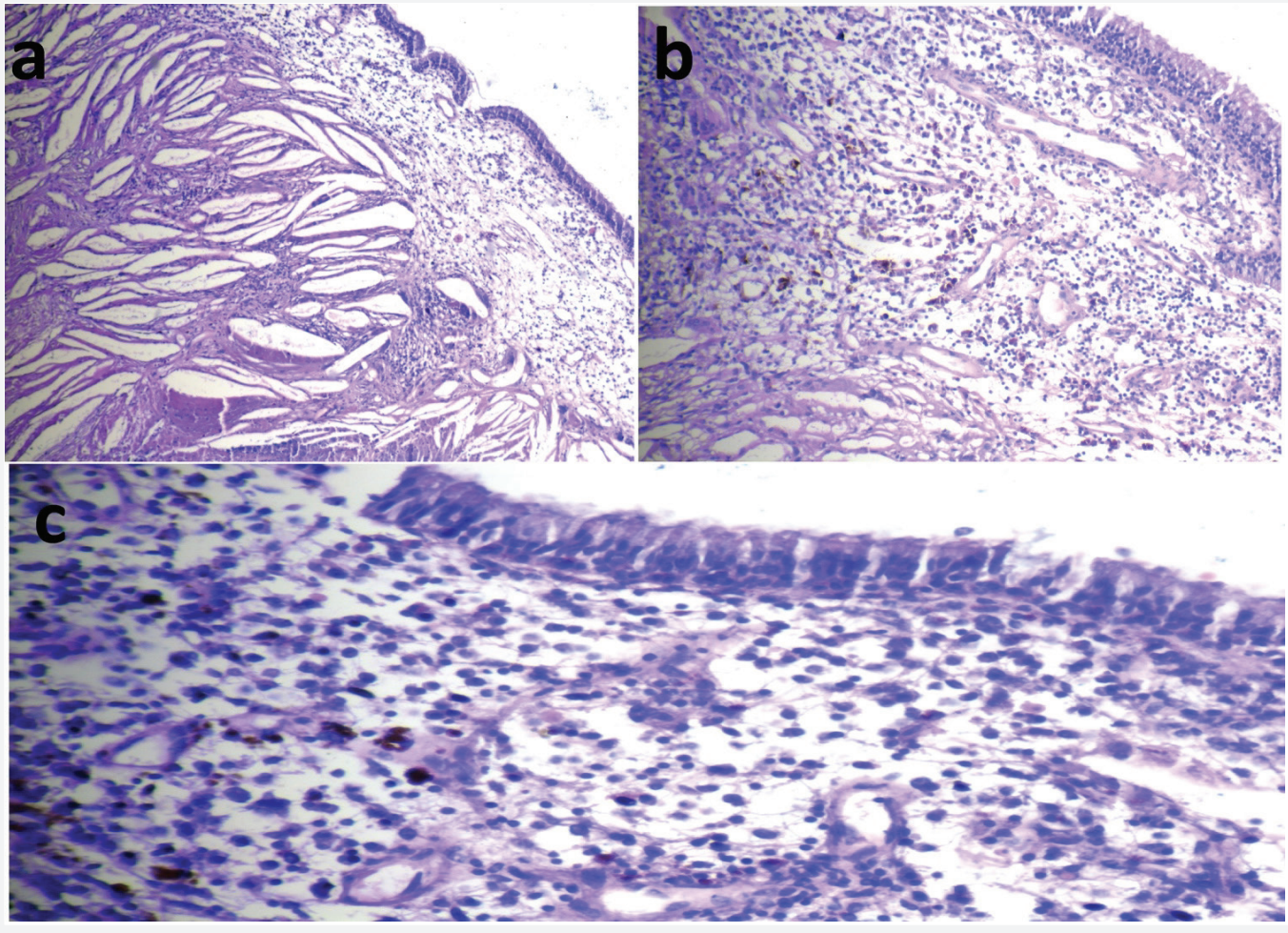

Figure 1. Histopathologic examination of the lesion showed respiratory epithelium-lined tissue with numerous subepithelial cholesterol crystals, surrounded by multinucleated giant cells and macrophages hematoxylin and eosin [(H&E), x100] (A). Destructed erythrocytes, hemosiderin-laden histiocytes, oedema, plasma cells, lymphocytes, and fibrotic changes are seen (H&E, x100; H&E, x200) (B, C).

histopathological analysis being crucial for a definitive diagnosis[3].

Footnotes

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