When cure creates the enemy: The paradox of paranasal sinus mucoceles

Jakov Bilać[1], Gorazd Poje[2]

[1]OB Šibensko-kninske županije, Ulica Stjepana Radića 83, 22000 Šibenik, Hrvatska

[2]KBC Zagreb, Kišpatićeva 12, 10000 Zagreb, Hrvatska

gpoje@kbc-zagreb.hr

Paranasal sinus mucoceles are benign, slowly expanding cystic lesions arising from the obstruction of the sinus drainage pathway, leading to mucus accumulation, sinus expansion, and thinning or erosion of the bony walls. Due to their locally aggressive behavior, they can result in significant morbidity. The rising incidence of PNS mucoceles is largely attributable to their occurrence as a late postoperative complication of FESS. We performed a retrospective review of patients surgically managed for paranasal sinus mucoceles at the ENT Department, Zagreb University Hospital Centre, between 2011 and 2024. The objective of this study was to review the clinical presentation, management strategies and outcomes of patients with PNS mucoceles treated at our institution. Data collected included demographics, clinical presentation, imaging findings, mucocele localization, etiological factors, complications, type of surgical intervention, recurrence, and postoperative outcomes. A total of 44 patients were identified, evenly distributed by gender with a mean age of 51 years. The most common sites were the frontal and frontoethmoidal sinuses (29/44). Orbital symptoms were the most frequent clinical presentation (21 patients), followed by headache and facial pressure (17 patients). Known risk factors for mucocele development were present in 33 patients, including a history of FESS, chronic rhinosinusitis, and facial trauma. Endoscopic marsupialization was performed in 36 cases, combined external and endoscopic approach in seven, and external approach alone in one patient. Recurrence occurred in eight patients, with a mean time to recurrence of 4.5 years, all successfully managed with subsequent surgery. A single complication occurred, an intraoperative CSF leak, which was effectively managed with skull base repair. Endoscopic sinus surgery represents the mainstay of treatment for PNS mucoceles, offering effective disease control with low morbidity. The external approach should be reserved for mucoceles that are extensive, endoscopically inaccessible with marked bony destruction that requires reconstruction or sinus obliteration. Our results are consistent with the published literature, highlighting excellent outcomes and relatively low recurrence rates when appropriate surgical principles are applied.

Key words: paranasal sinus mucoceles, retrospective review, rising incidence, endoscopic marsupialization