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Editorial

Subperiosteal Tunneling in Lateral Osteotomy: Truth Versus Mere Facts

Hong Ryul Jin

Doctor Jin's Premium Nose Clinic, Seoul, Korea

In a recent meta-analysis published in *Clinical and Experimental Otorhinolaryngology*, Kim et al. [1] reviewed six selected articles and concluded that osteotomy without periosteal tunneling is associated with less periorbital ecchymosis and edema than osteotomy with periosteal tunneling. The authors [1] used the term "periosteal preservation" to indicate the absence of periosteal tunneling, but in fact, the osteotome eventually shears the periosteum during osteotomy when 4-mm or 6-mm osteotomes are used.

Of the six articles reviewed, one concluded that there were no significant differences in the measured parameters between the two methods, indicating that no single method was superior to the other [2]. Another of the articles that was analyzed, by El-Sisi et al. [3], dealt with external perforating osteotomy, in which the tunneling method is totally different from that used in internal osteotomy.

The benefits of subperiosteal tunneling in lateral osteotomy have long been debated, and the few articles on this issue have published conflicting results. A few systematic reviews and meta-analyses have reported that ultrasonic osteotomy reduces periorbital edema and ecchymosis compared to conventional osteotomy [4,5]. In ultrasonic osteotomy, the periosteum is not just tunneled, but elevated over the whole bony pyramid. The authors presumed that partial periosteal tunneling causes tissue damage, leading to more edema and ecchymosis, but precisely the opposite results have been reported in similar analyses. A recent prospective, double-blinded, randomized controlled study of 90 patients by Taskin et al. [6] showed that if the periosteum was elevated, the choice between ultrasonic and conventional osteotomy made no difference in edema and swelling. This underscores the importance of the periosteum, not the instrument.

The rationale for elevating the periosteum following the osteotomy path is to avoid shearing of the periosteum, which is a leading cause of swelling and ecchymosis. The benefit of not shearing the periosteum may be offset by an incorrect technique if surgeons lose the subperiosteal dissection plane or the osteotome does not exactly follow the tunnel path. Interpretation based on a meta-analysis can lead to conclusions that may be technically correct, but are not true in terms of the underlying reality of the phenomenon being explored. Meta-analyses provide invaluable information only when they are based on studies that were conducted properly while minimizing bias. In my professional opinion, there are benefits of subperiosteal tunneling in reducing postoperative edema, but these benefits can only be achieved through correct execution of the technique by experienced surgeons.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

ORCID

Hong Ryul Jin https://orcid.org/0000-0001-8887-6792

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