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Dear Editor:

We would like to address the article “Butterfly Myringoplasty for Total, Subtotal, and Annular Perforations” by Alain et al. This work is excellent; it provided an improved treatment technique and higher success rate for myringoplasty for total, subtotal, and annular perforations. However, some details were not explained clearly, making replication difficult for the reader.

In their Materials and Methods section, the authors stated, “Thirty-three patients were included in the study (33 ears), 17 were women, and the mean age at surgery was 34 years (range, 19–76 years). Of these, 18 patients (57%) had a total perforation, 11 a subtotal perforation, and the remaining four patients had annular perforations.”

In their Results section, they stated, “Anatomic closure at 1 month after myringoplasty was found in all but two patients (94%). However, after a mean follow-up of 14.5 months, residual perforation was found in two additional patients, which led to an anatomical success rate of 88%.” However, the authors did not specify whether the four residual perforations were annular perforations. We believe that butterfly cartilage graft myringoplasty has a higher success rate for total and subtotal perforations with residual edges. Nevertheless, the success rate was not higher for annular perforations. First, the perichondrium and eardrum have similar tissue components because of the reserved perichondrium toward the lateral side in butterfly cartilage graft myringoplasty. The outside perichondrium gradually translates into part of the eardrum for central perforations or large perforations with residual edges. In addition, cartilage acts as a scaffold and facilitates the centrality and stratified migration of proliferative epithelium from the residual eardrum along the cartilage. However, the annular bone and tragus cartilage are different components, and the histocompatibility of these tissue types is poor. Similarly, the organizational structure of the eardrum and the skin of the external auditory canal is different. It is difficult for perichondrium and cartilage to be translated into the skin of the external auditory canal and bone, resulting in a “zombie” cartilage eardrum and the failure of butterfly cartilage graft myringoplasty for annular perforations.

However, the perichondrium and fibrous rings are in the same plane, and the centripetal migration of proliferative epithelium of the tympanic annulus occurs along the cartilage and repairs the perforation in underlay cartilage graft myringoplasty. A clinical study showed that underlay cartilage graft myringoplasty had a higher success rate for large perforations. Second, one end of the cartilage was inlayed in the annular bone and the other end was inlayed in the residual eardrum; the power of both ends was not balanced and resulted in a tear in the residual eardrum for annular perforations. However, the entire cartilage edge was inlayed in the residual eardrum, and the surrounding force could maintain the balance in butterfly myringoplasty for total and subtotal perforations.

The eardrum was inlayed in the tympanic sulcus of the tympanic annulus, and the thicknesses of the tympanic annulus and eardrum were not matched; the thickness of the tympanic annulus is greater than that of the eardrum. It is difficult to keep the cartilage groove tightly inlayed in the tympanic annulus in butterfly myringoplasty, and this increases the long-term failure rate. Fourth, the area of unilateral tragus cartilage is limited in some cases and is not enough to fill a total perforation. Thus, we believe that underlay cartilage graft myringoplasty could be better for total and annular perforations.

The follow-up period was short in this study; the authors stated in the Results section that “Anatomic closure at 1 month after myringoplasty was found in all but two patients (94%). However, after a mean follow-up of 14.5 months, residual perforation was found in two additional patients, which led to an anatomical success rate of 88%.” We believe that the follow-up duration can affect success rates. Residual perforations could occur with the extension of the follow-up duration. A previous study showed reperforation rates of 5% to 10% in the first year after type I tympanoplasty, and rates of 10% to 15.5% over the next 3 to 10 years. A randomized controlled trial of a large sample between butterfly myringoplasty and underlay cartilage graft myringoplasty with a longer follow-up period is needed for total and annular perforations in the future.

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BIBLIOGRAPHY


