Partial Auriculotomy for Exposure of Tumors of the External Auditory Meatus and Conchal Bowl

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REPORT OF A CASE

A man in his late 70s was referred for Mohs micrographic surgery (MMS) of a large, ulcerating basal cell carcinoma of his right ear. On physical examination, the ulceration involved the entire concha up to the lateral edge of the external auditory meatus and the triangular fossa (Figure 1). The auricle was clinically unaffected.

THERAPEUTIC CHALLENGE

Gaining adequate visual exposure and mechanical access to tumors arising in the conchal bowl area can be difficult. Having a surgical assistant flatten the natural concavity of the bowl with pressure from behind may be of some help. Furthermore, the use of an angled beaver blade may improve the maneuverability of the scalpel in this tight space. However, even with these adjunctive measures, surgery in this area can be challenging. Mohs micrographic surgery, which requires a continuous mapped plane of tissue to be excised, poses even greater difficulty.

SOLUTION

Incisions were made through the full thickness of the ear, around the tumor margin between the concha and the antihelix anteriorly, and lateral to the posterior auricular sulcus, leaving only a small pedicle of attachment at the inferior pole of the ear, just above the ear lobe (Figure 2). Then the ear was reflected out of the field of surgery while retaining its inferior pedicle, allowing clear visualization and surgical access to the tumor. Mohs micrographic surgery was then used to remove the tumor. The external ear was then rotated back into its position and reattached in a layered fashion (Figure 3). The conchal bowl was allowed to heal by secondary intention. The patient achieved good healing with an excellent cosmetic result (Figure 4).

COMMENT

The auricle is a common site for cutaneous malignancies, with up to 5.5% of all skin cancers occurring on the ear. Of these, two thirds occur on the auricle and up to one third involve the external auditory meatus. For both squamous and basal cell carcinomas, a worse prognosis has been reported for lesions of the ear and especially of the external auditory meatus. Squamous cell carcinomas of the ear are reported to have a higher metastatic potential than squamous cell carcinomas of other locations, with an estimated 5-year metastatic rate of 11%. Furthermore, the local recurrence rate after surgical excision of a squamous cell carcinoma of the ear is 18.7%, but only about 5.6% when MMS is used. For these reasons, Mohs micrographic surgery offers several advantages in excising tumors from the auricle, including more complete surgical margins, better defined tumor boundaries, and improved cosmetic results.
sons MMS is probably the treatment of choice for such tumors.

However, good visualization and adequate access for the delicate surgical manipulations involved in MMS can be difficult in this restricted space. Using the partial auriculotomy we have described, clear visualization and surgical access can be achieved while preserving the auricle and allowing an excellent cosmetic result. One obvious concern may be the viability of an auricle, the sole vascular supply of which will be from a small inferior pedicle. However, the auricle is supplied by a rich circumferential arcade of vessels formed by the anastomosis of branches from the posterior auricular and superficial temporal arteries, which are themselves branches of the external carotid artery (Figure 5).

Figure 2. Line of incision during partial auriculotomy, just lateral to the tumor.

Figure 3. After completion of Mohs micrographic surgery, the auricle is reflected back into position.

Figure 4. Final cosmetic result 4 months following auriculotomy.

Figure 5. Rich vascular arcade of the external ear.
Thus, a single remaining viable artery can supply the whole ear via this arcade. This also makes the ear a privileged site for repair of traumatic injuries, because simple reattachment of an almost completely avulsed ear is possible, even when only a narrow pedicle has remained.7

An important point for the Mohs micrographic surgeon to remember is that the incision made through the ear during partial auriculotomy may be cutting through some subclinical tumor. Thus, if mapping of the tissue reveals tumor at the incised margin of the auricular stump, a layer from the cut margin of the reflected auricle must also be taken until a negative plane has been achieved in this field.

We believe that the surgical maneuver we have described is relatively simple, safe, and of great use when dealing with tumors arising from the external auditory meatus and/or conchal bowl area.

REFERENCES