

Approaching a cutaneous tumor in the external auditory canal

Abordagem de tumor cutâneo no conduto auditivo externo

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ABSTRACT

Lesions in difficult locations within the auricular pavilion have been a major challenge for dermatologic surgeons, since access to their surgical approach tends to be complicated. In this article, the authors describe a case of basal cell carcinoma affecting the lower part of the left auricular concha that was resected by Mohs micrographic surgery, whose approach proved to be challenging. The authors describe a tactic to gain better access and visibility of the surgical field and facilitate the implementation of the procedure.

Keywords: ear auricle; Mohs surgery; carcinoma, basal cell

RESUMO

Lesões de difícil localização no pavilhão auricular têm-se mostrado um grande desafio para os cirurgiões dermatológicos, pois o acesso para sua abordagem cirúrgica tende a ser complicado. Neste artigo relata-se um caso de carcinoma basocelular acometendo a parte inferior da concha auricular esquerda, submetido à ressecção por cirurgia micrográfica de Mohs cuja abordagem mostrou-se desafiadora. Descrevemos uma tática para obter melhor acesso e visibilidade do campo cirúrgico e facilitar a execução do procedimento.

Palavras-chave: pavilhão auricular; cirurgia de Mohs; carcinoma basocelular

INTRODUCTION

The ear has one of the most complex shapes among those of the structures of the head, owing to the fact that it has convexities and concavities, which hamper the surgical approach and reconstruction. As a result, knowledge of the auricular pavilion's anatomy is crucial for surgeons.

The ear is not only a cutaneous cartilaginous appendix attached to the lateral portion of the cephalic segment, but also a geometrically complex structure, comprising the auricular pavilion, external auditory meatus and the exterior tympanic membrane.^{1,2} It is located anteriorly to the mastoid process and posteriorly to the temporomandibular joint, and has a three-di-

mensional, slender fibro-cartilaginous structure, covered with a thin layer of skin, with concavities and convexities. Except for the lobe, all particularities of the relief are direct reflections of the cartilaginous framework.³ This cartilage forms an almost complete circle around the auditory meatus. The middle part of the concha's cartilage draws nearer the mastoid bone and acts as the backbone of the ear.¹

The auricular concha is a concave depression that connects to the external auditory meatus, posteriorly, superiorly and inferiorly circling it. It is divided into: cymba (the uppermost and smaller portion) and cavum (the larger inferior portion). These two structures are separated by the crus helix, and have their lower portion delimited by the tragus, intertragic notch and antitragus (Figure 1).^{2,3}

Various skin tumors – both melanoma and non-melanoma – can be found in the ear. Non-melanoma skin cancers are the most common tumors in the world. The head is the most common body site for these types of tumors, which predominantly arise in the ear, nose, periocular region, chin and jaw. Tumors in these areas have greater risk of recurrence and metastasis.⁴

While nonmelanoma skin cancers in the ear correspond to only 6% of all cutaneous neoplasias,⁵ they are known for having high recurrence rates, even when treated with Mohs micrographic surgery (MMC). Squamous cell carcinomas that are located in the ear have higher rates of metastasis and recurrence. Due to their complex anatomy and problematic visualization, tumor lesions in the ear are difficult to detect by the patient him or herself and may not be noticed,⁵ with late diagnosis.

The greatest risk factor for the development of basal cell carcinomas (BCC) and squamous cell carcinomas (SCC) is exposure to ultraviolet radiation; nonetheless there are differences in the pattern of exposure to the sun regarding these two subtypes of cancer. The development of SCC is associated with cumulative exposure to the sun over a lifetime, the skin type and sensitivity to the sun, whereas the development of BCC varies depending on its histological subtype.⁴

Although SCCs located in the auricular pavilion and in the lip are more aggressive than those located in other parts of the head and neck, recent studies have shown that some BCC subtypes are even more invasive when located in the ear.⁶ It is known that, when located on the ear, more aggressive subtypes of BCC are more likely to have more Mohs surgery stages when compared to other locations.⁷ One hypothesis for this would be the difficulty of defining clinical margins on the ear's surface due to its curvatures and minimal access to the tissue. The ear's anatomy hampers surgical approach in many of its areas. This paper shows a surgical maneuver aimed at obtaining more visibility and better surgical access to the concha region and external meatus, simplifying the procedure.

METHODS

A tumor lesion with prior histological diagnosis of sclerodermiform BCC, located in the anterior part of the concha, close to the external acoustic meatus, in the left auricular pavilion was treated.

The case of an 80 year-old patient with history of multiple BCCs in the face is described. The patient presented a new tumor, with six months of development. The lesion was clinically characterized by an infiltrated plate with pearly borders and ulcerated center, affecting the left auricular pavilion's concha and part of the external auditory meatus, measuring approximately 2cm in diameter. Physical examination of the tumor portion that affected the external auditory meatus was hampered due to the fact that this portion was covered by the ear tragus.

SURGICAL PROCEDURE STEPS

1. Marking of the lesion with the assistance of dermoscopy (Figure 2).
2. Blocking of the auricular pavilion and tumescent anesthesia in the region.
3. Performance of two parallel incisions (the first between the supratragic incisure and the upper apex of the tragus, and the second between the lower apex of the tragus and the intertragic incisure), both with approximately 1cm in length, in the skin and cartilage (Figure 3).
4. Preparation of two stitches with 4.0 nylon (one from the upper apex of the tragus up until the superior pre-auricular region and the other from the lower apex of the tragus up until the inferior pre-auricular region) called restoration stitches and aimed at moving the tragus medially to improve access and visualization of the acoustic meatus (Figure 4).
5. Measurement of lesion's size (10mm x 13mm) and removal of tumor without margins (debulking).
6. Excision of the peritumoral tissue with lateral margins of 2 mm and depth up until the perichondrium, followed by hemostasis.
7. The specimen was prepared for analysis of all of its margins using intraoperative freezing, according to the MMS technique.
8. Microscopic analysis showed free margins in the first phase of the MMS.
9. Final measurement of the defect (17mm x 12mm).
10. Removal of the restoration stitches.
11. Edge-to-edge closing of the supratragic and infratragic incisions with 5.0 monocryl, close to the auditory meatus and stitches with 5.0 nylon in the distal region of the auditory meatus (Figure 4).
12. Second intention healing of the tumor's surgical wound (Figure 5).
13. Dressing with petroleum jelly.

DISCUSSION

Lesions located in the auricular pavilion, especially those located in the inferoanterior region of the concha and external auditory meatus, are a challenging for dermatologic surgeons. The greatest challenge is to approach these lesions, since visualizing and accessing them is hampered by the tragus, which is located anteriorly to them. The technique demonstrated in the present paper is straightforward and can be very useful for sur-

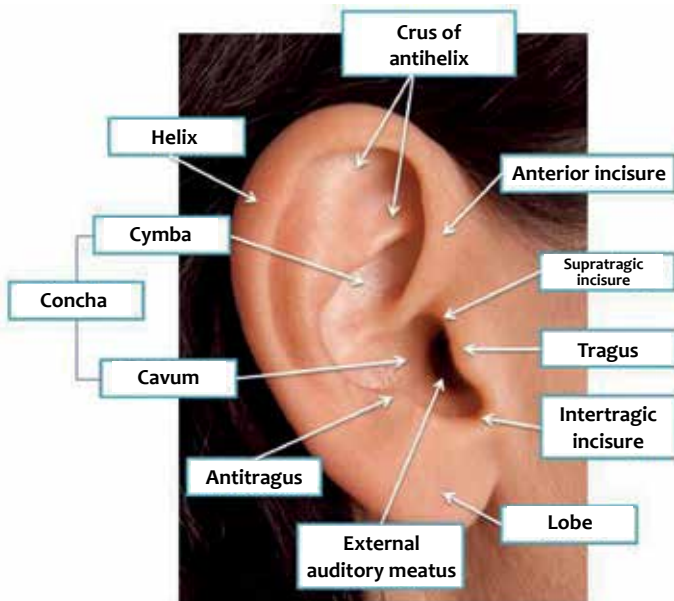


FIGURE 1: Auricular pavilion's anatomy. Description of the anatomy of the auricular pavilion



FIGURE 2: Clinics of the lesion. Tumor lesion with roughly 2cm in diameter characterized by an infiltrated plate with pearly borders and ulcerated center, affecting the left auricular pavilion's concha and part of the external auditory meatus



FIGURE 3: Surgical approach. Two parallel incisions (the first between the supratragic incisure and the upper apex of the tragus, and the second between the lower apex of the tragus and the intertragic incisure), both with approximately 1cm in length, in the skin and cartilage



FIGURE 4: Restoration stitches. Preparation of two stitches: (one at from superior apex of the tragus up until the superior pre-auricular region and other from the inferior apex of the tragus up until the inferior pre-auricular region)



FIGURE 5: Postoperative. Healing of the tumor's surgical wound by secondary intention

geries in these areas, for it allows better visualization and surgeon access to these anatomical regions.

CONCLUSION

Due to the complex anatomical structure of the region, approaching lesions located in difficult areas of the auricular pavilion is challenging for dermatologic surgeons. The authors of the present paper have demonstrated a new technique aimed at improving visibility of and access to the auricular concha and meatus, facilitating the surgical approach of lesions in those locations, which can be very useful for dermatologic surgery practice. ●

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