

## Case Report

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# A Case of Huge Intradermal Melanocytic Nevus of the External Auditory Canal Orifice

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### ABSTRACT

The intradermal Melanocytic Nevus (MN) is usually referred to as the nevocytic nevi and is composed of nevus cells. Although intradermal nevi are common benign pigmented skin tumors, their occurrence within the External Auditory Canal (EAC) is uncommon. Recently the author experienced a case of huge intradermal MN which almost completely obstructed EAC orifice without accompanying conductive hearing loss in a 42-year-old female patient. It originated in the inferior wall of cartilaginous portion of left EAC. It was treated by en bloc excision without skin graft by transcanal approach. Here, we report a case of huge intradermal MN arising in the EAC with review of literatures.

**KEYWORDS:** Melanocytic nevus; External auditory canal, Tumors.

**ABBREVIATIONS:** MN: Melanocytic Nevus; EAC: External Auditory Canal; HMB-45: Human Melanoma Black-45; MRI: Magnetic Resonance Imaging; MRA: Magnetic Resonance Angiography.

### INTRODUCTION

This article reports a case of huge intradermal Melanocytic Nevus (MN) of the External Auditory Canal (EAC) orifice. A nevus is a benign melanocytic neoplasm and is the most common type of skin tumor.<sup>1</sup> The intradermal MN is usually referred to as the nevocytic nevi and is composed of nevus cells. Although intradermal nevi are common benign pigmented skin tumors, their occurrence within the external auditory canal is uncommon.<sup>2</sup> There are 20 reported cases of MN in the EAC in the English-language literature thus far.<sup>3-5</sup> Recently the author experienced a case of huge intradermal MN which almost completely obstructed EAC orifice without accompanying conductive hearing loss in a 42-year-old female patient. It originated in the inferior wall of cartilaginous portion of left EAC. It was treated by en bloc excision without skin graft by transcanal approach.

### CASE REPORT

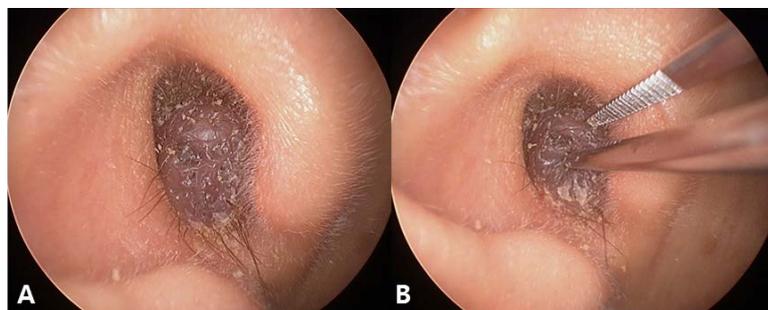
A 42-year-old woman presented with 10-year history of a slow-growing mass in the right external auditory canal (EAC) orifice associated with cosmetic discomfort. She denied any previous medical history and reported having no hearing impairment. Physical examination revealed a protruding mass covered with gray desquamated keratin arising from the inferior wall of the cartilaginous portion of EAC (Figure 1A). It showed a 10 mm sized dark brownish, dome-shaped, pedunculated hair-bearing mass with a mammilated surface which causes almost complete closure of the EAC. During the palpation with forceps, it was firm, non-tender mass nearly completely occupying the most lateral part of the EAC (Figure 1B). The otoscopic and audiologic examination revealed normal tympanic membrane and hearing level. There were three fungating skin lesions with similar character on the right posterior neck area (Figure 2). However, there were no abnormal findings on the superior portion of the trunk. Although, the

lesions were completely asymptomatic, she underwent excision for aesthetic reason only. During the pre-operative evaluation, dermatopathologist's opinion helped to exclude the possibility of malignancy such as naevoid melanoma, and confirmed that the mass appears to be a benign intradermal nevus. High-resolution computed tomography of the temporal bone demonstrated normal middle ear cavity and mastoid pneumatization. To exclude the possibilities of vascular tumor, internal auditory canal Magnetic Resonance Imaging (MRI) and Magnetic Resonance Angiography (MRA) were performed. Pre-operative imaging showed about 6×9×9 mm sized mass with high signal, oval in appearance, with heterogeneous enhancement in the right external auditory canal orifice after gadolinium administration without any evidence of temporal bone destruction or abnormalities in the middle ear and mastoid (Figure 3). In the report of magnetic resonance angiography, hemangioma was suspected because of the progressive enhancement in the dynamic scan study and prolonged contrast enhancement with slow filling, but, nonetheless, the embolization of the feeding vessel seemed not to be required because of the small size. Under local anesthesia, complete tumor excision was performed *via* transcanal approach. An elliptical incision was made around the base of the mass with adequate margins under otomicroscope. The lesion was confined to the cartilaginous EAC and completely removed. A deep margin was

taken to the level of the perichondrium. The author did not perform the frozen section exam during the excision because there was no evidence of bone destruction on pre-operative images and intraoperative finding showed well-demarcated mass covered with normal overlying skin. The skin on the base was cauterized to control bleeding and applied with antibiotic ointment. And the patient asked three masses with similar features on her right posterior neck to be removed simultaneously during the operation. Following surgical excision, the patient experienced an uneventful recovery. Cutaneous wound healing occurred with complete re-epithelialization of the EAC skin defects by regular dressing (Figure 4). Histologic analysis revealed melanocytes arranged in round to ovoid nests or clusters located completely within the upper dermis, the intradermal type (Figure 5A). The nevus cells are strong positive for S-100 immunohistochemical stain, and they are focal positive for HMB (Human melanoma black)-45, and positive in less than 1% for Ki-67 which is cellular marker for proliferation (Figure 5B). At the 2-year follow-up after operation, there was no sign of recurrence.

**DISCUSSION**

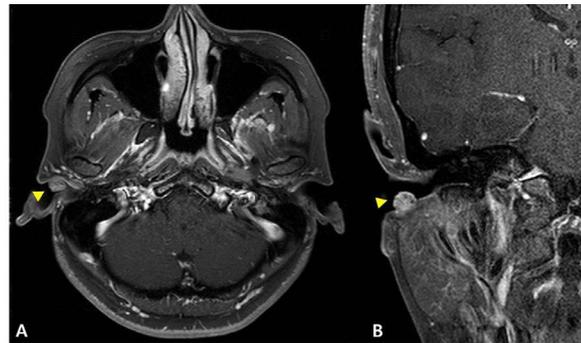
MN is the most common benign skin tumor which is composed of nevus cell. It may be found anywhere on the skin,



**Figure 1:** Otoscopic view showing the dome-shaped hair bearing lesion covered with gray crusts on the inferior wall of the right EAC(A). Palpation with Bayonet forceps. Firm, non-tender mass nearly completely occupying the most lateral part of the EAC(B).



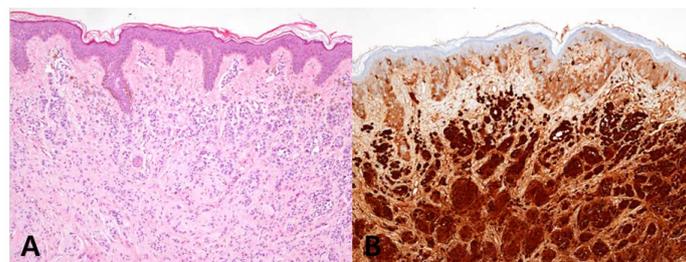
**Figure 2:** There were three fungating mass lesions with similar character on the right posterior neck area. Small image in the bottom left corner of the figure is a distant view.



**Figure 3:** Pre-operative axial (A) and coronal (B) Magnetic Resonance Imaging (MRI) shows about 6×9×9 mm sized mass (yellow arrowheads) with high signal, oval in appearance, with heterogeneous enhancement in the right external auditory canal orifice after gadolinium administration.



**Figure 4:** The picture shows external auditory canal is healing well without wound problem 2 weeks after excision.



**Figure 5:** Histopathologic findings. The upper dermis contains nests and cords of nevus cells which have uniform round and oval nuclei with finely dispersed chromatin and delicate nuclear membrane (Hematoxylin and eosin; original magnification×100) (A). The nevus cells are strong positive for S-100 immunohistochemical stain (original magnification×100). And they are focal positive for HMB-45 and positive in less than 1% for Ki-67 (B).

but its presence in the EAC is very uncommon.<sup>2</sup>

Histologically, MN is recognized by the presence of nevus cells, which, although they are melanocytes, differ from ordinary melanocytes by being arranged at least partially in cluster or nests and has been classified into three subtypes depending on the distribution of the melanocytes. A collection of nevomelanocytes located along the junction of the epidermis and the underlying dermis or remain in contact with the lower epidermis can be classified as a junctional nevus, situated in the upper dermis only and no longer contact the epidermis as intradermal nevus, and a mixture which display the features of both junctional and intradermal proliferation in both areas as a compound nevus.<sup>2</sup> In

this case, the result was an intradermal MN. Most papillomatous lesions and almost all dome-shaped and pedunculated lesions represent intradermal MN.<sup>3</sup>

The nevus evolved by a process of nevus cells from the epidermis “dropping down” into the dermis. MN in adults is primarily of the intradermal type, and MN in children is primarily of the junctional type.<sup>4</sup>

Some authors asserts that overexposure to ultraviolet light from the sun may play a role in the skin damage that can lead to melanoma and the formation of acquired MN.<sup>6</sup> And the number of moles a person has was found to have a correlation

with telomere length which may be of significance in the ageing process.<sup>7</sup>

The common clinical manifestations of MN of the EAC have been reported to include frequent itching, ear fullness, foreign body sensation, conductive hearing loss, otalgia and excessive accumulation of wax with difficulty in cleaning,<sup>5,8</sup> but most cases were asymptomatic and were found incidentally. In this case, although it was a completely asymptomatic, she removed the lesion for aesthetic purpose only.

MN in EAC has the tiny risk of transformation into cutaneous melanoma. However, the author recommends that MN in EAC be treated as soon as possible to prevent progression to more advanced-staged EAC cholesteatoma. It is also believed to be important to obtain pathological confirmation of all nevus looking masses within the EAC by excisional biopsy when a nevus becomes symptomatic or when all of its features cannot be observed.<sup>1</sup> It is known that complete scalpel excision of all clinically atypical nevi permits the histological assessment of the entire lesion and spares the patient the need for further surgical intervention.<sup>9</sup>

Clinical and histologic differential diagnosis include benign lesions such as lentigo, viral wart, seborrheic keratosis, dysplastic nevus, inflammatory polyp, encephaloceles and squamous papilloma and other malignant lesions such as squamous cell carcinoma, malignant melanoma, basal cell carcinoma.<sup>2,3,10</sup> Unlike melanomas that progress over time, MN enlarges to a point, stabilize, and then involute.<sup>2</sup>

MN should be considered to be early diagnosed and to be managed with early complete surgical resection for aesthetic, functional and preventive purposes. Because MN in EAC has the possibility of developing into an EAC cholesteatomas, especially when it is large enough to obstruct the lumen of the EAC and the tiny risk of transformation of any single melanocytic nevus into cutaneous melanoma. As a matter of course, the treatment of choice of a symptomatic pigmented nevus in the EAC is complete excision. The possibility of malignancy should be excluded all the time.<sup>1</sup> Occasionally, to avoid postsurgical scar contracture, the auditory canal could be covered with split-thickness skin graft. The prognosis of MN is substantially favorable; however, the risk of progression to malignancy in benign melanocytic lesions was recently studied in a meta-analysis,<sup>11</sup> which revealed a 2% incidence for melanoma, especially for congenital nevi >40 cm located on the trunk.<sup>12</sup>

**CONSENT**

The author has received written informed consent from the patient described in this case report.

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