CASE REPORT

Nodular fasciitis of the external auditory canal extending into post aural region: A case report

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Abstract
Introduction: Nodular fasciitis (NF) is a pseudosarcomatous, self-limiting reactive process composed of fibroblasts and myofibroblasts. Due to its rapid-growing nature, the condition is frequently misdiagnosed as malignant lesions.

Case report: In this study, we present the case of a young man with an external auditory canal nodular fasciitis as an example of one of the rarest sites of this tumor. The patient underwent an excision of the lesion under general anesthesia. The literature choices for treatment include complete excision, partial excision, or intralesional injection of steroids. Due to its associated local discomfort, and in order to exclude other differential diagnosis, we recommend a complete surgical excision.

Conclusion: External auditory canal nodular fasciitis is a rare lesion. Due to its associated local discomfort, and in order to exclude other differential diagnosis, we recommend a complete surgical excision.

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1. Introduction

Nodular fasciitis (NF) is a pseudosarcomatous, self-limiting reactive process composed of fibroblasts and myofibroblasts. NF is most common in young adults between 20 and 40 years of age and its preferential site is the upper extremities, followed by the trunk, especially the chest wall and back. NF in the head and neck is next in frequency and the head and neck is the most common site in infants and children. The exact etiology is still unknown, but a number of hypotheses regard a preceding trauma as an etiologic factor. However, an obvious history of trauma is not always evident among patients.1,2

Due to its rapid-growing nature, a precise clinical diagnosis is difficult and the condition is frequently misdiagnosed as aggressive or malignant lesions.

2. Case report

A 35-year-old man presented in our otorhinolaryngology clinic at Government Medical College Hospital Srinagar J&K India with a complaint of a non-tender, rapidly growing mass first
observed three weeks earlier on his left External auditory canal extending into past aural area. The lesion started with features of otitis externa and was treated for the same during first week but resulted in the eruption of rapidly growing mass. There were no other accompanying symptoms. On physical examination, a $2 \times 3 \text{ cm}$ mass lesion was observed in the left external auditory canal and about $5 \text{ cm} \times 4 \text{ cm}$ mass in the post aural area (Fig. 1). The mass was fragile and easily became bloody by manipulation. It was not possible to examine the external auditory canal (EAC) and tympanic membrane. No cervical lymphadenopathies were detected. A thorough whole-body skin examination revealed no other lesions, to rule out the malignant lesions such as sarcoma, a punch biopsy was taken and contrast enhanced CT scan was done. Microscopic findings showed a proliferation of plump, mitotically active spindle-shaped cells with oval, pale-staining nuclei and short irregular bundles in a loosely mucoid matrix with extravasated red blood cells and multinucleated giant cells, which was consistent with the diagnosis of NF. CECT shows mildly enhanced soft tissue lesion in the left external auditory canal extending into middle ear cavity and almost touching medial wall of the middle ear (Fig. 3), lesion was found to be extending into soft tissue of post aural area without any bone erosion (Fig. 4). According to the pathologic diagnosis of nodular fasciitis, the patient underwent an excision of the lesion under general anesthesia. The basal skin of the lesion was completely excised (Fig. 5) and the surrounding skin was primarily repaired. There was no bone and cartilage invasion. The permanent pathologic result was also compatible with nodular fasciitis. An immunohistochemical (IHC) study for cytokeratin (CK), S-100, epithelial membrane antigen (EMA), smooth muscle actin (SMA), and vimentin (Vim) was performed. On IHC study, CK, EMA, and S-100 were negative, and SMA and Vim were expressed, which confirms the diagnosis of NF (Fig. 2).

### 3. Discussion

Nodular fasciitis of the external auditory canal is an uncommon lesion. Although NF of auricle is described by many authors in past, in an article reviewing 50 cases of auricular NF, Thompson et al. commented that this lesion is most commonly seen in young adults with a mean age of 27 years, which is similar to our patient, but is usually small in size, which differs from our case. The mean size of the lesion is reported as $1.9 \text{ cm}$. Other studies have reported larger lesions, also up to $10.5 \text{ cm}$ but not usually exceeding $4 \text{ cm}$. Majidi et al. in 2013 reported a case of NF of auricle which was about $5 \text{ cm}$ in size. In our patient the lesion had grown rapidly up to $6 \text{ cm}$ in diameter. In addition to its rapidly growing nature,
the presence of high cellularity and considerable mitosis are the principal elements of a differential diagnosis. Thompson et al. also observed that auricular NF is usually misdiagnosed. In their review, 75% of patients were misdiagnosed with sarcoma. We also considered sarcoma as the most likely diagnosis before performing the biopsy. The pathologic characteristics are consistent with other studies. Only a few spindle sarcomas grow as rapidly as nodular fasciitis, but they show histologically a greater degree of pleomorphism and a greater area of necrosis. Fibromatosis is another differential diagnosis, but fibromatosis has larger infiltrative margins with collagenous stroma and scanty inflammatory cells, which differentiates it from NF.

The treatment is also controversial. While complete excision is recommended by some authors, others have recommended partial excision or intralesional injection of steroids. The lesion is also regarded as self-limiting in some reports.

4. Conclusion

Auricular nodular fasciitis is a rare lesion. Due to its associated local discomfort, and in order to exclude other differential diagnosis, we recommend a complete surgical excision.

References