A Case of Nodular Fasciitis in the Upper Eyelid

Nodular fasciitis (NF) is a benign proliferation of fibroblasts and myofibroblasts of unknown origin.1-2 Although common in the upper extremities, chest, and back, its occurrence in the upper eyelid is rare.1-4 We report an unusual case of NF of the upper eyelid diagnosed through histopathological and immunohistochemical study.

Case Report

A 42-year-old woman had a nontender, firm mass in the left upper eyelid, which had enlarged rapidly to 15 mm × 12 mm during the previous 5 months. The mass was located between the temporal canthus and eyebrow and appeared to be freely mobile beneath the skin. The patient did not suffer ocular discomfort or visual change and denied any trauma history. An enhancing, well-circumscribed 5 mm × 5 mm mass in the lateral aspect of the left upper eyelid was found on computed tomography (CT) 3 months before the surgery. The lesion infiltrated the orbicularis muscle but was separated from the overlying skin. Bone involvements or calcifications were not found (Fig. 1A). Excision by skin incision above the lesion revealed a 15 mm × 12 mm mass in the subcutaneous and preseptal area. The tumor abutted the peristeme at its superotemporal aspect but was excised en bloc (Fig. 1B).

On gross examination, the excised tumor was a soft, pale brown mass measuring 15 mm × 12 mm (Fig. 1C). After sectioning, histological analysis showed a 5 mm × 5 mm solid, gray component, presenting as a demarcated, nonencapsulated, oval nodule (Fig. 1D). Under light microscopy, spindle-shaped fibroblasts with a tissue-cultured appearance were arranged in small fascicles, and small capillaries were abundant and associated with extravasated red blood cells (Fig. 2A). The tumor cells varied little in size and shape and had oval, pale-staining nuclei. Atypical mitotic figures or cellular atypia were not seen (Fig. 2B). Immunohisto-

Figure 1. A Axial orbital CT imaging disclosed an enhancing, well-circumscribed, preseptal mass in the left upper eyelid before surgery (arrow). B Intraoperative photograph showing a solid mass contiguous with the dermis. The tumor abutted the peristeme of the lateral orbit at its superotemporal aspect. C Photograph showing a 15 mm × 12 mm soft, pale brown fragment of excised tumor. D The excised mass displayed a well-defined, nonencapsulated margin corresponding to the solid, gray component on gross examination, wherein the surrounding tissue was composed of orbicularis muscle, fatty and fibrous tissue (H&E stain; bar = 1 mm).
chemistry results were positive for actin and vimentin, and
negative for desmin, epithelial marker cytokeratin, alpha-1
antitrypsin, S100, CD34, CD31, and CD68, thus providing
supportive evidence for myofibroblastic nature (Fig. 2C).
The clinical, histological, and immunohistochemical find-
ings allowed the diagnosis of NF.

Comment

Nodular fasciitis grows rapidly over a few weeks and is
often associated with tenderness.3 It is typically discovered
as a subcutaneous nodule that does not adhere to the sur-
rounding tissues or infiltrate the dermis.1,2 The NF of this
case was differentiated from the typical clinical features by
its infiltration of the dermis and orbicularis and by its adhe-
sion to the surrounding tissues.

On CT or magnetic resonance imaging, NF is observed
as an enhancing, noninvasive, and well-circumscribed
tumor, as in this case. Although these features differentiate
it from dermoid cyst, which frequently accompanies bony
abnormality and is nonenhancing, it is difficult to differenti-
ate it from other soft-tissue tumors.3

NF shows hypercellularity and active mitotic figures
without atypia5 and needs to be differentiated from fi-
broblastic tumors such as fibrosarcomas and fibrous histiocyt-
omas.1 Fibrosarcomas are detected as large tumors with
atypical spindle cells that have hyperchromatic nuclei
arranged in long fascicles with a herringbone appearance.
Necrosis is frequently observed and there is infiltrative
growth.1 Fibrous histiocytomas are composed of benign-
appearing spindle cells arranged in a storiform pattern and
lacking atypia. In addition, histiocytes are usually found
between the spindle cells.1 Since NF expresses actin and
vimentin but not desmin or S100 protein, as in this case,
diagnosis using immunohistochemical stain is viable.2

The prognosis of NF is favorable: it does not develop
metastases and rarely recurs. If it does recur, disease other
than NF should be suspected.2,4 In this case, no recurrence
or new lesion was observed 3 months after the excisional
biopsy. When physicians encounter a rapidly growing sub-
cutaneous nodule in the eyelid, they should consider the
possibility of NF in order to avoid unnecessary wide resec-
tion, since the prognosis of NF is favorable even with simple
excision.

Keywords: eyelid mass, eyelid tumor, nodular fasciitis

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