Nasal glial heterotopia

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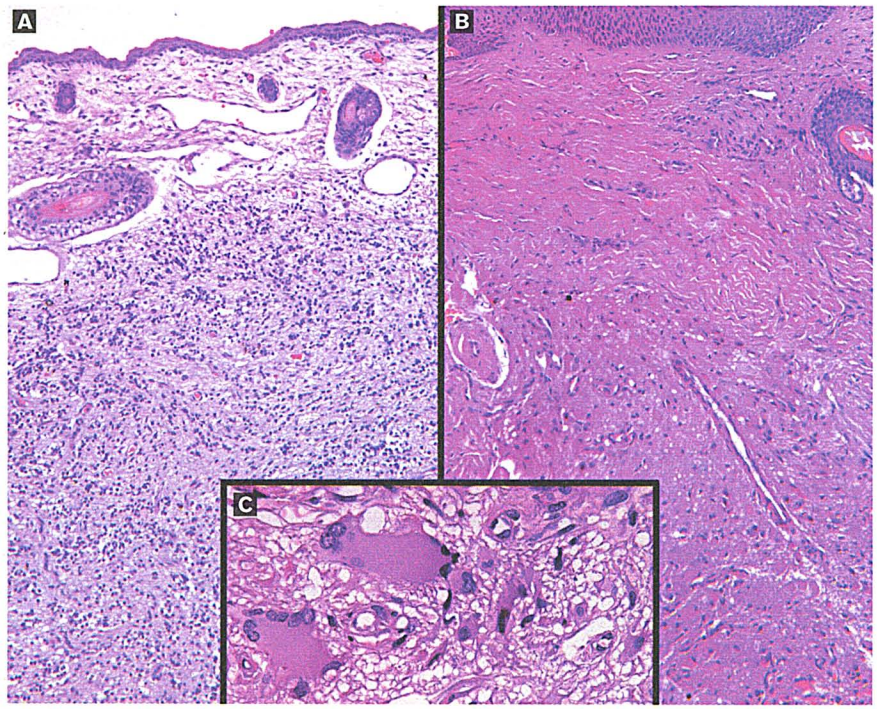

*Figure 1. Both images demonstrate intact skin (epidermis) and hair shafts. An aggregation of glial tissues (**A**) can often be interspersed with fibrous connective tissue, which often makes it difficult to recognize the glial components (**B**). The inset (**C**) shows the occasional gemistocytic astrocytes (large pink cells).*

Nasal glial heterotopia (nasal glioma) is the term used to describe a mass made up of mature brain tissue that is isolated from the cranial cavity or spinal canal. Most of these rare, benign, congenital tumors are found in the nasal region, particularly at the bridge of the nose and in the nasal cavity. Nasal glial heterotopia is frequently diagnosed in newborns; a few cases have been found in adults.

The differentiation of nasal glial heterotopia from encephalocele is based on the presence of a connection between the mass and the intracranial tissue. However, even with high-resolution computed tomography and magnetic resonance imaging, the connection may be very small and unapparent. Occasionally, the distinction can be made by noting the presence of meningitis and/or cerebrospinal fluid rhinorrhea, either before or after surgical manipulation. Because of the difficulty in definitively identifying a connection to the brain, caution must be exercised to decrease complications.

Histologically, nasal glial heterotopia and encephaloceles are characterized by varying proportions of neurons and glia; they may also contain gemistocytic astrocytes (figure 1). There are varying degrees of fibrosis, frequently associated with inflammation. Masson's trichrome

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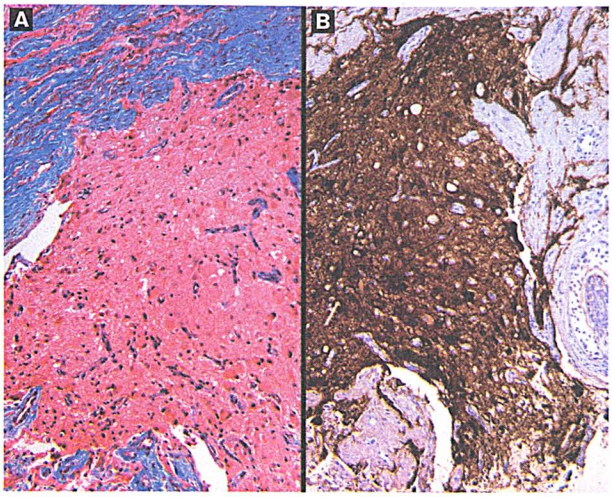

Figure 2. ***A:*** *Glial tissue stains pink/red, and reactive fibrosis stains blue on trichrome staining.* ***B:*** *A GFAP immunoreaction highlights the lesional glial cells in brown.*

staining or an S-100 protein and glial fibrillary acidic protein (GFAP) are most helpful in accentuating the neural tissue in the background fibrosis (figure 2). It must be noted that there are no significant histologic differences between lesions with and without a demonstrable central nervous system connection. Therefore, the accurate diagnosis of heterotopia as opposed to encephalocele requires knowledge of the patient's radiographic and/or operative findings.

Suggested reading

Mills SE, Gaffey MJ, Frierson HF. Neural, neuroendocrine, and neuroectodermal neoplasia. Tumors of the upper aerodigestive tract and ear. Third series. Washington, D.C.: Armed Forces Institute of Pathology, 1997:119-200.

Penner CR, Thompson LD. Nasal glial heterotopia: A clinicopathologic and immunophenotypic analysis of 10 cases with a review of the literature. Ann Diagn Pathol 2003;7:354-9.