

Nasal glioma: A case report

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Abstract

Here we describe a rare case of nasal glioma in a 14 year old boy who presented with history of right nasal obstruction and nasal discharge since 6 months. On examination a pale mass was seen filling the right nasal cavity and extending down in the oropharynx. Clinical impression was antrochoanal polyp. Excision of the mass was carried out and sent for histopathology which showed presence of glial tissue and the diagnosis was made as nasal glioma.

Key words: nasal gliomas, congenital mass, encephalocele

Nasal glioma, one of the congenital midline nasal mass is a rare anomaly usually detected at birth. The reported incidence is 1 in every 20,000 to 40,000 births¹. The most common congenital nasal masses are nasal dermal sinus cysts, nasal encephaloceles, and nasal gliomas. These masses appear to share a similar embryogenic origin. They occur when the neuroectodermal and ectodermal tissues fail to separate during the development of the nose². They can be extranasal (60% of cases), intranasal (30%), or mixed (10%). Other rare locations for heterotopic brain tissue include the lips, tongue, scalp, nasopharynx and oropharynx³.

Although rare, these disorders are clinically important because of their potential for connection to the central nervous system. Biopsy of the lesion with an intracranial connection can lead to meningitis or cerebrospinal fluid leak. The treatment of these masses is surgical excision.

Case report

A 14 year old boy presented with history of right sided nasal obstruction and nasal discharge since six months. He had no other complaints. The family history and sibling history was unremarkable.

On clinical examination general condition was normal. The right nasal cavity examination shows a pale white mass filling the right nasal cavity. On indirect laryngoscopic examination the mass was seen coming down in the oropharynx from nasopharynx. The mass did not bleed on touch. The left side of nose was normal. Rest of the ENT examination was within normal limit. Haemogram and urine examination was done which was within normal limit. CT scan or other imaging was not done. Clinically impression was right antrochoanal polyp. Other examination findings were unremarkable.

Functional endoscopic sinus surgery was performed for the visualization of the nasal polyp and its extent. CT scan prior to functional endoscopic surgery was not done. Polypectomy was done under general anaesthesia and postnasal pack was given. After surgical excision gross examination of the mass revealed pale unencapsulated tissue, measuring 2 x 1.5 cm and 0.7 x 0.5 cm. The cut surface was greyish white.

Histopathological examination of the nasal mass shows fibrocollagenous tissue lined by stratified squamous epithelium. Subepithelium shows fibrillary neuroglial tissue with a prominence of glial fibres and few gemistocytic cells. There is chronic inflammatory infiltrates comprising of lymphocytes and plasma cells. Few congested blood vessels are seen.

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Fig 1: Microscopic photograph



Discussion

The term nasal glioma is a misnomer because such a mass is not a true neoplasm. It is actually made up of ectopic nerve tissue that contains neuroglial elements, with glial cells in a connective tissue matrix with or without connection to the subarachnoid space or dura⁴. The male-to-female ratio is 3:2. Approximately 150 cases have been reported and no familial predisposition has been described⁵. Some cases of nasal glioma associated with other malformations, such as agenesis of the corpus callosum and cleft palate, have been reported^{6,7}. Only in 15% of the cases, nasal gliomas remain connected with the intracranial structures by a pedicle of glial tissue, usually through a defect in the cribriform plate^{4,7}. The usual age of presentation of the nasal gliomas is in infancy or early childhood. But in this case the boy was asymptomatic till 14 years of age. Clinically, these masses are soft, pale, and polypoid. They can protrude through the nostrils and mimic a nasal polyp. Nasal gliomas can cause remodelling and deformities of the adjacent bones and commonly cause hypertelorism. Obstruction of the nasal passage and nasolacrimal duct can lead to respiratory distress and epiphora on the affected side. Complications like CSF rhinorrhoea, meningitis or epistaxis can also develop in these patients^{7,8,9}. Nasal gliomas are classified as heterotopias and not as neoplasia since pathologically they resemble reactive gliosis. They present as a firm, skin covered, reddish coloured, and non-pulsatile, usually slowly growing, polypoidal lesions. Histologically, nasal gliomas are unencapsulated nests of glial cells. They usually contain large aggregates of astrocytes (fibrous or gemistocytic) and fibrous connective tissue enveloping the blood vessels. Multinucleated giant cells are often seen. No microscopic invasion, mitotic figures or metastases have been

reported so far. Reactive changes and local calcifications as seen in some nasal gliomas may reflect the relatively poor blood supply to these heterotopias⁹. Neurons have been identified in 10%-60% of cases in the series reported. About 90 reported nasal gliomas do not contain neurons, because of^{4,8,9} low levels of oxygen in the mass and the lack of differentiation from embryonic neuroectoderm. Neuro-imaging is essential for the characterization of an intranasal glioma to determine its exact location and, more important, to exclude possible intracranial extension. The definitive treatment is complete surgical excision. Entire mass must be removed in order to prevent recurrence. Intranasal lesions are approached via lateral rhinotomy or by endoscopic techniques.

Conclusion

Nasal gliomas constitute one of the important midline nasal masses and this case report emphasizes on the need for its correct recognition. Nasal glioma can be a differential diagnosis for nasal polyp as in this case. Since the prognosis of the patient for nasal polyp and nasal glioma varies the correct diagnosis of this condition is necessary so that right treatment will be provided to the patient.

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