

# Congenital Nasal Glioma: A Case Report

S Pippal, S Soni, A Yadav, V Dubey, M Najmi

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## Abstract

A congenital midline nasal mass is a rare anomaly usually detected at birth. The most common congenital nasal masses are nasal dermal sinus cysts, nasal encephaloceles, and nasal gliomas. Nasal glioma is a developmental abnormality of neurogenic origin. We report here a case of one day old neonate in which the nasal glioma was excised endoscopically.

## INTRODUCTION

Nasal gliomas are rare, benign, congenital tumors that are thought to be the result of an abnormality in embryonic development. The reported incidence is 1 in every 20,000 to 40,000 births<sup>1,2</sup>. Three types of clinical presentations have been recognized- extranasal (60%), intranasal (30%), and combined (10%). Clinically, these masses are firm, noncompressible, nonpulsatile, gray or purple lesions that obstruct the nasal cavity intranasally and cause deformity extranasally. These are one of the congenital midline masses, a category which also includes nasal dermoids and encephaloceles. These disorders are clinically important because of their potential for connection to the central nervous system<sup>3</sup>.

Histologically, these tumors are made up of astrocytic neuroglial cells interlaced with fibrous and vascular connective tissue that is covered with skin or nasal respiratory mucosa.

We describe here a case of newly born male baby diagnosed as intranasal glioma in left side of nasal cavity in which endoscopic excision of the nasal glioma was done successfully.

## CASE REPORT

This newly born male baby was brought for evaluation of mass protruding from the left nostril at the department of ENT, Gandhi medical college, Bhopal. External examination of the nose was normal. Anterior rhinoscopy revealed a mass having a purple hue and occupying the whole of the left nasal cavity protruding through the left external nares like a polyp (Fig.1). It was firm, polypoidal, non pulsatile, noncompressible. There was no change in size

of the mass during crying and the FURSTENBERG'S TEST was negative (no change in the size of the swelling with bilateral compression of the internal jugular veins). The right nostril was patent. There were no other abnormalities.

## Figure 1

Figure 1: Photograph Showing Mass On Left Side Of Nose

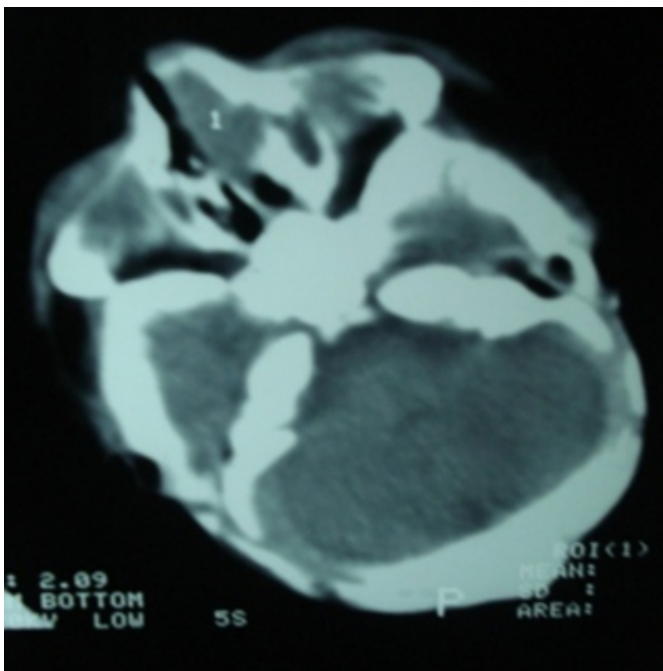


Computerized Tomography (CT) revealed a well rounded soft tissue density mass attached to the lateral wall of the nasal cavity filling the anterior left nasal cavity. There was no intracranial extension or any other intracranial mass. All the routine hematological and biochemical investigations were normal.

The patient was planned for endoscopic surgical removal under general anaesthesia using a paediatric nasal endoscope. The entire mass was removed (figure 3) and the nasal cavity was packed with MEROCEL™. The mass measured 4cm X 1.5cm X 1cm. The nasal pack was removed after 48 hours. There was no bleeding, no CSF leak, no fever and no sign of infection. Post operative patient recovered well. The histopathological diagnosis was nasal glial heterotopia consistent with nasal glioma (Fig2).

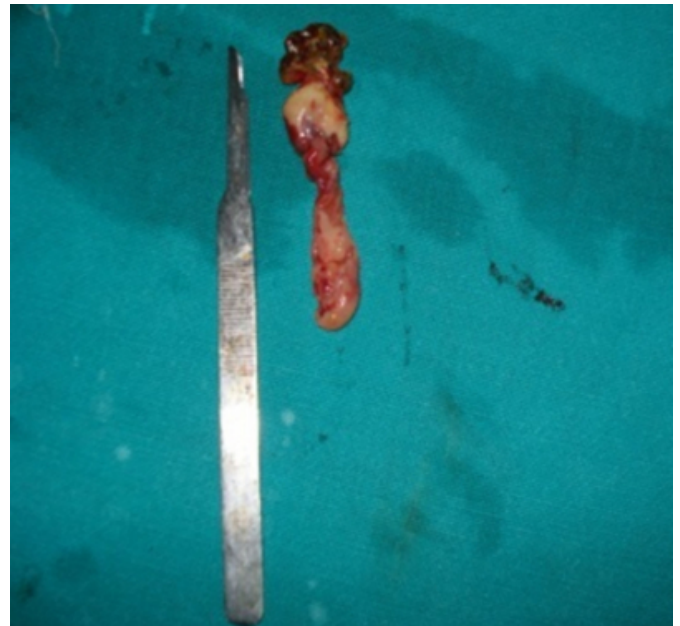
**Figure 2**

Figure 2: CT Scan Showing Nasal Mass On Left Side Attached To Inferior Turbinate



**Figure 3**

Figure 3: Entire Mass Excised Via Endoscopic Approach



**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 dura<sup>4</sup>. The male-to-female ratio is 3:2, and approximately 150 cases have been reported. No common association with other malformations and no familial predisposition have been described. Some cases of nasal glioma associated with other malformations, such as agenesis of the corpus callosum and cleft palate, have been reported<sup>5,6</sup>. Only 15% of all nasal gliomas communicate with the intracranial structures, usually at the level of the cribriform plate<sup>7</sup>. Nasal gliomas usually arise during infancy or later childhood. They can be extranasal (60% of cases), lying external to the nasal bones and cavities; intranasal (30%), lying within the nasal cavity, mouth, or pterygopalatine fossa; or mixed (10%), communicating through a defect of the nasal bones. Other rare locations for heterotopic brain tissue include the lips, tongue, scalp, nasopharynx, and oropharynx<sup>3</sup>.

Radiological study normally confirms the nature of the lesion. Report by Pensler suggested that CT scan is an essential examination to detect the defect at the level of foramen cecum & helps rule out intracranial communication<sup>8</sup>. Lusk suggested that MRI can be useful to assess the soft parts and intracranial communication, in addition to avoidance of exposure to radiation. They suggested that it

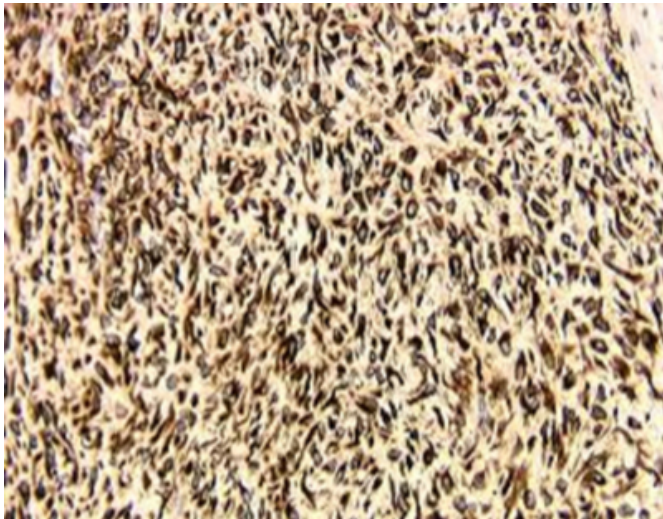
should be the test of choice for screening of a patient with a congenital midline mass<sup>9</sup>.

Definite diagnosis is through the clinicopathological study. Histologically nasal gliomas consist of unencapsulated rest of glial cells predominantly astrocytes embedded in varying amounts of fibromuscular stroma.<sup>10,11,12</sup> Similar findings were seen in our patient( figure 4). Immunohistochemical demonstration of GFAP (Glial fibrillary acid protein) has been shown to be capable of identifying neuroglial cells with a high degree of specificity. On rare occasions meningiomas may be seen in the nose, identification of S 100 and GFAP helps to differentiate the two lesions.<sup>13</sup>

Treatment is complete surgical excision. Intranasal gliomas require a lateral rhinotomy alone or endoscopic excision.

**Figure 4**

Figure 4: GFAP identification



**CORRESPONDENCE TO**

Abhinav Yadav Room No. 35, GMC Hostel Hamidia Hospital, Bhopal (India) Pin : 462001 Phone No. : +91-9827248454 E-mail : abhinav\_ms@yahoo.co.in

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**Author Information**

**S.K. Pippal, M.S.**

Associate Professor & Head, Department of ENT, Gandhi Medical College & Hamidia Hospital

**Smita Soni, M.S.**

Asst. Professor, Department of ENT, Gandhi Medical College & Hamidia Hospital

**Abhinav Yadav**

Resident, Department of ENT, Gandhi Medical College & Hamidia Hospital

**Vipasha Dubey**

Resident, Department of ENT, Gandhi Medical College & Hamidia Hospital

**Murtuza Najmi**

Resident, Department of ENT, Gandhi Medical College & Hamidia Hospital