Rare Nasal Tumours in Kumaon Region of Uttarakhand: A Clinical Observation

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Abstract To review the cases of nasal mass in the Kumaon region of Uttarakhand and observe the incidence of rare nasal tumours and their atypical presentation. A prospective study conducted at ENT dept of STMF Hospital & U.F.H.T medical college at Haldwani in the Nainital district of Uttarakhand. This state has approx. ninty lacs of population out of which 50 %resides in Kumaon region. hence this should be taken as a sample study and considering the topographical condition of this region this is the only one medical college where facilities like CT Scan and MRI are available so most of the patients of this region are referred to this medical college. Cases were selected from the patients attending ENT OPD with nasal mass during the period of August 2005–Sep 2008. History and physical examination were done according to a proforma. All patients were routinely investigated. CT Scan of nose and PNS were done in each case. Biopsy along with immunohistochemistry (if required) were done in each case. Out of 160,136 patients attending the ENT OPD of the hospital during the period of August 2005–September 2008, of which total 200 (0.1241)% patients presenting with nasal mass were included in the study. Age of the patient ranged from 5 to 70 years. Maximum patients were seen in the age group of 31–40 (37%) The most common symptom was nasal blockage (97.5%). The most common tumour was

squamous papilloma (90%). Here we are describing the presentation and abnormal features of some of the rare nasal tumours, which comprised only 4.5% (9 cases) of the 200 patients of nasal mass seen during the period. In the Kumaon region of Uttarakhand patients with tumours of nose and paranasal sinuses usually present late to the clinician due to poverty and ignorance. Their presentation was variable and many times disease was highly advanced. If proper diagnostic facilities are available in the region, timely intervention can be done and maximum benefit can be extended to the patient.

Keywords Nasal tumour · Rare features · Kumaon region · Uttarakhand

Introduction

Nose is a prominent structure on the face and plays an important role in respiration, humidification and filtration. There are a variety of masses arising in nose which range from simple benign lesions like polyps to malignant tumors which may mimic simple nasal polyp. Due to poverty, ignorance and tolerant nature of the patient presentation to the clinician is usually late and is often referred to higher centers. Even at higher centers sometimes due to lack of complete knowledge, diagnostic facilities and poor compliance of the patient due to poverty appropriate treatment is not imparted to the diseased in time.

Material and Methods

This is a prospective study conducted at ENT dept of STMF Hospital & U.F.H.T medical college at Haldwani in

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Fig. 1 Showing age distribution

Fig. 2 Showing different case distribution

Fig. 3 Showing different symptoms of nasal mass

the Nainital district of Uttarakhand. This hospital is a tertiary center for Kumaon region in the state of Uttarakhand. Cases were selected from the patients attending ENT OPD with nasal mass during the period of August 2005–Sep 2008. History and physical examination were done according to a performa. All patients were routinely investigated and worked up. CT scan of nose PNS (axial and coronal) and MRI (whenever required) was done in each case along with the diagnostic nasal endoscopy, biopsy and immunohistochemistry if required.

Observations

Total 160,136 patients attended the ENT OPD during the period of August 2005–Sep 2009. 200 patients had nasal mass (0.1241%). The age incidence varied from 5 to 70 years. Maximum patients were seen in the age group of 31–40 (37%) (Fig. 1). Male to female ratio was 2.3: 1. The most common tumour was squamous papilloma (90%) (Fig. 2). The most common symptom was nasal blockage (97.5%) (Fig. 3). Most of them were benign (92%) Other nasal tumours comprised only 10% of 200 cases included in the study. 4.5% (9 cases) of these rare tumours (Table 1) had unusual features which we would like to highlight (Table 2) while rest do not require to be mentioned as they had usual features.

Discussion

Among common benign nasal masses lobular capillary hemangioma and hemangiopericytoma are very rare vascular tumours arising from the nasal cavity. The clinical picture, course and treatment of both these tumours are entirely different [1]. Histopathological picture of both these tumours is sometimes very confusing which creates dilemma for the treating surgeon to suggest the patient about the prognosis of the disease and final outcome of the treatment. Here comes the role of immunohistochemistry [2] which can differentiate between different tumours by using different stains. As discussed in case report no. 2 it must be remembered that even benign lesion like polyp can cause extensive bone destruction. Sinonasal polyps usually show a decreased blood flow and a decrease in number of blood vessels compared with nasal mucosa [3]. Approximately 5% of inflammatory or allergic nasal polyps develop extensive vascular proliferation and ectasia with deposition of pseudo-amyloid. These so called angiectatic nasal polyps can grow rapidly and exhibit an aggressive clinical behaviour that could stimulate malignancy preoperatively [4] In this case although the preoperative clinical and CT findings were suggestive of some malignant tumour but final histopathology report came out to be angiectatic

Table 1 Incidence of nasal tumors with unusual features

S.No	Tumour type	No. of cases	Percent
1	Angiectatic nasal polyp	2	1
2	Hemangiopericytoma	2	1
3	Esthesioneuroblastoma	2	1
4	Sinonasal undifferentiated carcinoma	3	1.5
	Total	9	4.5

Table 2 Showing unusual features of some rare nasal tumors

Case No. Age/sex	1 43/M	2 20/F	3 17/F	4 25/F	5 24/F
Symptoms	Epistaxis, nasal blockage and headache (2 months)	Anosmia, nasal blockage (lt), swelling on lt eye and headache (1 year)	Epistaxis, nasal blockage (Rt) and headache (1 year)	Epistaxis, nasal blockage and headache (6 months)	B/L neck mass, Ptosis (lt) H/O fever, weight loss, loss of appetite, (3 months)
Signs	Dirty white friable mass in nasal cavity (lt), no bleeding on probing	Pale white mass in lt nasal cavity causing disfiguration of dorsum of nose, small fluctuant swelling on lt medial canthus, no bleeding on probing the mass	Reddish brown polypoidal mass in Rt nasal cavity, no bleeding on probing. B/L smooth palatal bulge	Small polypoidal mass in left nasal cavity lt proptosis	10, 11, 12 CN involved
Invest.	CECT nose PNS-expansile soft tissue mass arising from the lateral wall going up to lt frontal and ethmoid sinus obliterating left osteomeatal complex	CECT nose PNS-minimally enhancing polypoidal mass occupying left maxillary sinus, nasal cavity with destruction of lamina papyracea and nasal bone extending to retroantral fat	CECT nose PNS-Large expansile mass, partial erosion of septum & palate anteriorly going up to nasopharynx	MRINose PNS- a enhancing polypoidal mass causing skull base destruction and extensive intracranial extension	DNE-fleshy mass in NPx involving post ends of MT, IT MRI-nose PNS-poorly Marginated mass in NPx involving parapharyngeal, masticator carotid, PPF and intra cranial extension
Treatment	Transnasal excision of mass ↓ GA	Transnasal endoscopic excision of mass ↓ LA	Frozen section-benign avascular lesion round cells Transnasal excision of mass ↓ GA	Frozen section-SNUC RTx	Chemoradiation
Biopsy	Lobular capillary hemangioma	Angiectatic nasal polyp	Olfactory neuroblastoma	SNUC	SNUC
Immunohisto-chemistry	Hemangiopericytoma		Olfactory neuroblastoma		↓

nasal polyp. This entity should be kept in mind whenever a large avascular lesion with bone destruction is encountered.

Olfactory neuroblastoma, a rare nasal tumour arises from olfactory epithelium of nasal cavity or in areas. Most commonly the tumor is situated in the nasal cavity beyond the middle concha, and its extra olfactory localization from dystopic epithelium is seldom [5]. The tumor growth is usually slow and over time infiltration of adjacent structures takes place in the direction of the paranasal sinuses, oro-nasopharynx, the base of skull and even the cerebral frontal lobes. Metastatic spread is locally to cervical lymph nodes, distally to lungs and bones and through leptomeninges into the brain. [6]. Atypical site of origin and its unusual spread made case no.3 a rare presentation. Biopsy caused pathological dilemma and final diagnosis could be settled by immunohistochemistry.

Sinonasal undifferentiated carcinomas were first recognized as a distinct entity from ONs by Frierson and his colleagues in 1986 [7]. Consisting of medium-sized cells arranged in nests and sheets with wide trabeculae, these tumors often contain extensive necrosis and vascular permeation. Although few series have been reported in the literature, the epidemiology and clinical presentation for these tumors, mainly epistaxis and nasal obstruction, appear to be similar to those for olfactory neuroblastomas as well as neuroendocrinal tumours [8, 9]. Overall survival associated with SNUC is extremely poor regardless of the treatment regimens used [10]. Deutsch et al, have recommended initial combination chemo- and radiotherapy in all cases of SNUC regardless of disease extent, followed by resection if intracranial involvement or metastatic diseases are absent [11]. Sinonasal undifferentiated carcinoma cannot be distinguished from other tumors of this region (with the possible exception of melanoma) based on neuroimaging features. This report suggest that an ordinary looking polyp in the nose should also be investigated properly and correct diagnosis should be ensured before initiating treatment to provide the optimum therapy and spare the patients from needless mutilating surgery.

Conclusion

Malignant tumours of nose and paranasal sinuses are rare entity as compared to their benign counterpart and their

presentation is variable so surgeon must be aware of all possibilities and definitive diagnosis of tumour should be made before starting the treatment. Patients with these tumors frequently present with usual features of nasal mass but sometimes clinical picture is confusing and clinical and neuroimaging features of these tumours is not dependable enough to establish a correct diagnosis. These tumours are often misdiagnosed as most of them share common pathological features so an experienced pathologist is also required to reach a conclusion Proper histopathological diagnosis & immunohistochemistry is mandatory to initiate the otherwise similar looking tumours. Sometimes we require electron microscopy to establish the diagnosis.

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