

# CASE REPORT

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## SINONASAL INFLAMMATORY POLYP PRESENTING LIKE A TUMOR: A CASE REPORT

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**ABSTRACT:** Sinonasal mass with bony destruction, deviation of eye and ophthalmoplegia raises the suspicion of tumor and requires extensive surgical approach. Benign masses and slow growing tumors tend to remodel the nasal vault and facial bones stimulating aggressive bone destruction. CT scan is helpful in determining the extent of disease and planning of surgical approach. Definitive diagnosis is only possible on biopsy and histopathology. Conservative surgical excision is a treatment of choice without extensive surgeries like Maxillectomy or Cranio-facial resection. **CASE REPORT:** We are presenting a case of a 40 year old male with large Sinonasal Inflammatory polyp along with bony destruction, deviation of eye and ophthalmoplegia. CT, Biopsy and Histopathology confirm the diagnosis of Sinonasal inflammatory polyp. Excision of mass was done by external approach with orbital floor reconstruction. **CONCLUSION:** Sinonasal inflammatory polyp should be included in the differential diagnosis of patient presenting with nasal mass, deviation of eye and ophthalmoplegia. CT, Biopsy and Histopathology are important diagnostic tools.

**KEYWORDS:** Sinonasal polyp, Histopathology, Biopsy.

**INTRODUCTION:** Sinonasal polyp is a chronic inflammatory disease of the sinonasal mucosa. Etiology remains unclear but infection, inflammation, allergy, asthma, aspirin intolerance, cystic fibrosis have been associated with the disease.<sup>(1)</sup> Manifestations depend on the size of the polyp. Clinically presents with nasal obstruction, rhinorrhea, post nasal drainage, anosmia/hyposmia, headache, facial pain, snoring, impaired quality of life.<sup>(2)</sup> Differential diagnosis is important to rule out benign or malignant tumours. CT PNS with Orbit determines the extent of the disease and surgical approach.

Benign sinonasal masses and slow growing neoplasms tend to remodel the nasal vault and facial bones, simulating aggressive bone destruction rather than bone remodeling<sup>(8)</sup>. Surgical excision is the treatment of choice for large sinonasal polyps. We report a case of large sinonasal mass in a 40years old male with diagnosis and complete treatment.

**CASE REPORT:** A 40yrs old Hindu male (Fig. 1), clerk by occupation presented with left side nasal obstruction, nasal discharge, hyposmia, occasional nasal bleed from 8 months. Left eye deviation, pain, blurred vision, diplopia from 6months. He is a known Diabetic on oral hypoglycemic agents since 5years. No history of addiction/ trauma industrial exposure.

Physical examination disclosed swelling over left nostril, large dull grey smooth lobulated mass involving entire left nostril. Septum was deviated to opposite side. Air blast absent on same side and Cottle's test negative. Smell test: unable to smell coffee on same side. On probing, mass

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was sensitive to touch and did not bleed on touch. Probe could not be passed laterally suggesting origin from lateral wall. Sensations over left cheek were normal. Posterior rhinoscopy showed globular smooth mass occupying left half of nasopharynx.

Left eye was deviated upward, outward and laterally with restricted extraocular movements in all four quadrants (ophthalmoplegia), normal vision on snellen's chart. CT PNS (Fig. 2) revealed heterogenous enhancing soft tissue lesion involving the left maxillary sinus extending to nasal cavity, ethmoid sinus, posterior choana, Intraorbital extraconal compartment (abutting inferior rectus muscle) orbital floor erosion and medial wall of maxillary sinus and turbinates.

MRI PNS showed 4.5x4.5x4cms altered signal intensity mass lesion filling left maxillary sinus extending to nasal cavity and nasopharynx with hyperintensity on T2 and STIR images. Angiography showed minimally vascular mass supplied by branches of Left external carotid artery.

Nasal endoscopy showed large single multilobulated mass in left nostril and biopsy report was suggestive of benign inflammatory polyp.

Surgery was done under GA using external approach by Moure's incision with Crile's subciliary extension. Anterior maxillary wall was removed completely to expose mass in maxillary sinus and nasal cavity. The mass was eroding medial and posterior maxillary walls extending to pterygopalatine fossa, infratemporal fossa up to sphenoid base. Mass was removed completely and floor of orbit reconstructed by titanium mesh and screws (Fig. 3).

Histopathology (Fig. 4) confirmed earlier diagnosis of sinonasal inflammatory polyp with extensive infarction, thrombosis of vessels. No evidence of malignancy or fungus.

Patient was given course of antibiotics, anti-inflammatory, antihistaminic for 1 week. Nasal pack removed two days after surgery, nasal douching given for 1month. Patient followed up 1 week, 3 weeks, 1 month, 3 months and 6 months post operatively. Cavity is well epithelised and healed with no evidence of residual/ recurrent growth. The patient fully recovered from the ocular symptoms of diplopia, ophthalmoplegia and proptosis (Fig. 5).

**DISCUSSION:** Sinonasal polyp is chronic inflammatory disease of sinonasal mucosa. Prevalence is 1-5% in adult general population. Usually manifested after age of 20 years (20-50year), M:F:2:1.<sup>(3)</sup> Polyps are tumour like hyperplastic swelling of mucous membranes. The most common site of nasal polyps are anterior ethmoid region followed by maxillary sinus.<sup>(4)</sup> Nasal polyp formation and growth are activated and perpetuated by an integrated process of mucosal epithelium, matrix, inflammatory cells which in turn may be initiated by both infectious and non infectious inflammation.<sup>(5)</sup>

This underlying pathology may lead to increased interstitial fluid pressure which further obstructs blood flow resulting in edema and distention of stroma. In nasal polyps obstructing sinus drainage, subsequent infection can cause more venous stasis and mucosal edema leading to self perpetuating cycle.<sup>(1)</sup> Histologically the presence of large quantity of extracellular fluid, mast cell degranulation and eosinophilia has been demonstrated.

Sinonasal malignancies develop in 5<sup>th</sup> to 6<sup>th</sup> decade of life. M:F:2:1.<sup>(6)</sup> Several carcinogenic compounds have been identified in 40% of malignancies. Inhalation of carcinogens like hard

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wood or soft wood dust, nickel, chromium, polycyclic hydrocarbons, thorotrast, smoking, mustard gas, radiation, viral and genetic causes.<sup>(6)</sup>

They tend to spread by local invasion medially to nasal cavity, laterally into cheek, posteriorly into infratemporal fossa and pterygopalatine fossa, superior into orbit (through inferior orbital fissure) and brain, inferiorly to palate. Tumours clinically present with nasal obstruction, bleed and distortion of face, facial pain and progressive anaesthesia of cheek (infiltration of infraorbital nerve), epiphora, trismus (pterygopalatine fossa involvement), maxillary and mandibular division of trigeminal nerve deficit (infratemporal involvement), loosening of tooth, proptosis and diplopia, ophthalmoplegia.<sup>(6)</sup>

Sinonasal malignancies tend to spread by lymphatic drainage in 25–35% of cases to anterior group of lymph nodes (i.e. submandibular, jugulodigastric, upper cervical, periparotid and facial), posterior group (i.e. retropharyngeal and upper deep cervical).<sup>(6)</sup>

A combination of CT and MRI are required staging and planning process of sinonasal masses.<sup>(6)</sup> Soft tissue component of tumours is well delineated by MRI.<sup>(7)</sup> Nasal endoscopic examination determines the origin, nature, extent and vascularity of sinonasal masses. Tissue diagnosis by biopsy is mandatory part of tumour evaluation.<sup>(6)</sup> Biopsy and histopathology gives definitive diagnosis.

Preferred line of management of sinonasal masses is surgical excision, as large sinonasal masses do not respond to medical line of treatment. Surgical excision is possible either by endoscopic or external approach depending on size, extent and tissue diagnosis of the disease. Endoscopic approach is difficult in very extensive masses with orbital floor, brain and posterior maxillary wall involvement. In these cases external approach is convenient to remove total mass and reconstruct the bony walls (orbital floor, maxillary walls, palate). External approaches include sublabial, transpalatine, lateral rhinotomy (+/- lip split/ subciliary extension), craniofacial resection.

**CONCLUSION:** Sinonasal inflammatory polyp rarely present with complications. Our case had left sided large sinonasal inflammatory polyp with erosion of orbital floor, medial maxillary wall and turbinates. It was extending to left eye extraconal compartment with deviation and ophthalmoplegia. On CT and MRI suspected a tumor mass. Definitive diagnosis was possible by biopsy and histopathology. In this case we undertook external approach for removal of total polyp mass with orbital floor reconstruction by titanium mesh and screws.

Histopathological examination, CT, MRI are important diagnostic tools. Bony erosion and extension into orbit should raise suspicion of tumor, but early diagnosis by biopsy is mandatory before proceeding to extensive surgeries like total maxillectomy or craniofacial resection.

This concludes that sinonasal inflammatory polyp should be included in differential diagnosis of patient presenting with nasal mass along with bony erosion, ophthalmoplegia and deviation of eye.

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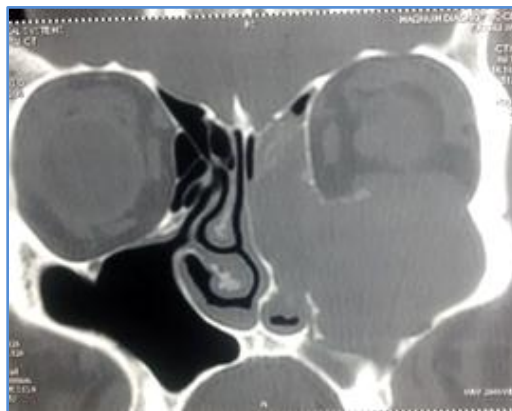
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**Fig. 1: preoperative photo of patient showing swelling over cheek and deviation of eye**

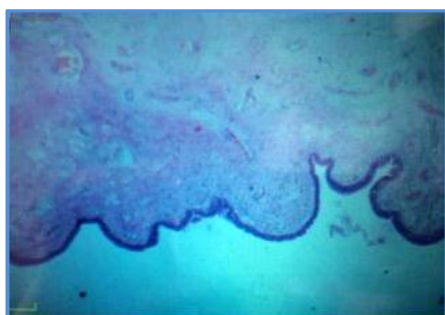


**Fig. 2: CT PNS showing heterogenous enhancing mass lesion in maxillary sinus eroding medial wall, floor of orbit**

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**Fig. 3: Intraoperative photo showing complete removal of sinonasal mass and orbital floor reconstruction**



**Fig. 4: Final histopathology Report: Sinonasal inflammatory polyp**



**Fig. 5: post operative 6 months**

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