

Original article:

Assessment of role of radiology in deciding the nature of nasal pathology and its extension

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Abstract:

Introduction: The nose is the most prominent part of the face having aesthetic and functional significance. It is one of those few special organs of body invested with an aura of emotional and cultural significance. With this view present study was planned to assess role of radiology in confirmation of nasal pathology.

Materials and methods: The present study was carried out 112 patients in out patients and its patients of ENT department from rural medical college.

The cases belonged to various places in and around Loni, Dist.Ahmednagar and Dist. Nashik.

- 1) X-ray PNS to know the extent of the mass, any bony erosion and associated pathology.
- 2) X-ray skull lateral view for any soft tissue shadow in nasopharynx.
- 3) CT paranasal sinuses when ever required and to find out deeper invasion of mass which can not be assessed.

Observations and results: X-ray paranasal sinus Water's view is routinely employed for clear delineation of the maxillary antrum. X-ray paranasal sinus Caldwell's view offers the best view of the frontal sinuses and a fairly good visualization of the ethmoidal cells, with a partial superimposition of the ethmoidal sinuses. X-ray lateral view of nasopharynx was done if required to see nasopharyngeal extension of polyp.

Conclusion: From present study we may conclude that radiology plays the most important role in assessing and confirmation of nasal pathology.

Keywords: Nasal pathology, PNS

Introduction:

The nose is the most prominent part of the face having aesthetic and functional significance. It is one of those few special organs of body invested with an aura of emotional and cultural significance.¹ Anatomical location of the nose and its passage has been regarded as the direct avenue to the brain, man's source of intelligence and spirituality. Malignancies of the nose and paranasal sinuses are potentially dangerous disease increasing morbidity and

mortality, requiring vigorous form of treatment like excision in total / radical with or without radiotherapy and/ or chemotherapy. ²Midline granuloma of the nose requires urgent attention. The other specific granulomatous lesions of the nose which are found commonly in India are rhinosporidiosis, lupus vulgaris and leprosy. ² Radiology is very important in revealing underlying subclinical extension of the disease and in assessing degree of cartilage and bone destruction. The

conventional films of nose and paranasal sinuses are vital in the diagnosis of scleroma. The findings ranges from soft tissue shadow, with expansion of the nasal cavities to narrowed or obliterated nasal cavities with destruction of the nasal skeleton. The soft palate exhibited marked thickening at its attachment to the hard palate which tapers off towards its free edge giving a characteristic "V" shaped deformity on lateral view of post nasal space. A subglottic soft tissue shadow may be seen in laryngotracheoscleroma.³ With this view present study was planned to assess role of radiology in confirmation of nasal pathology.

Materials and methods

The present study was carried out 112 patients, both in out patients and its patients of ENT department Rural Medical College and Hospital, Loni . The cases belonged to various places in and around Loni, Dist.Ahmednagar and Dist. Nashik. The study was approved by Institutional ethical committee. The sample size was estimated with the help of expert

statistician. The inclusion and exclusion criteria were confirmed.

The criterion for selection of cases was manly based on history at clinical examination. Later these cases were thoroughly investigated and appropriate management was under taken after establishing the final diagnosis.

Detail history was taken regarding the patients complaints mainly nasal obstruction, mass in the nose epistaxis, rhinorrhoea, hyposmia, deformity of nose and face. Occupation history, personal habits and socioeconomic status of patients was enquired. Clinical examination of cases was carried out as per the proforma enclosed.

Following investigation were done :

- 4) X-ray PNS to know the extent of the mass, any bony erosion and associated pathology.
- 5) X-ray skull lateral view for any soft tissue shadow in nasopharynx.
- 6) CT paranasal sinuses when ever required and to find out deeper invasion of mass which can not be assessed.

Observations and results:

Table : Site of origin of nasal polypoidal masses

Site of origin	No. of cases
Middle meatus	61
Lateral wall of nose(other than middle meatus) *	18
Nasopharynx	1
Roof of nose	1
Superior meatus	12
Inferior turbinate	02
Septum	09

The most common site of origin was found to be the middle meatus in (54.46%) , followed by lateral wall of nasal cavity i.e. (16.07%) cases

X-ray paranasal sinus Water's view is routinely employed for clear delineation of the maxillary antrum. X-ray paranasal sinus Caldwell's view offers the best view of the frontal sinuses and a fairly good visualization of the ethmoidal cells, with a partial superimposition of the ethmoidal sinuses. X-ray lateral view of nasopharynx was done if required to see nasopharyngeal extension of polyp.

Discussion

This study includes 112 cases of various nasal polypoidal masses seen in out patient department of ENT during the period of May 2007 to June 2009. Various types of nasal masses were seen ranging from the commonly seen allergic ethmoidal polyp, antrochoanal polyp to squamous cell carcinoma of the maxilla. Typical geographical distribution diseases like Rhinoscleroma and Rhinosporidiosis were also studied.

In the present study incidence of non-neoplastic nasal masses among nasal polypoidal masses (71.42%) was found to be more than neoplastic polypoidal masses (16.59%)

Radiological investigations: X-ray paranasal sinus Water's view is routinely employed for clear delineation of the maxillary antrum. X-ray paranasal sinus Caldwell's view offers the best view of the frontal sinuses and a fairly good visualization of the ethmoidal cells, with a partial superimposition of the ethmoidal sinuses. X-ray lateral view of nasopharynx was done if required to see nasopharyngeal extension of polyp.

In 50 cases of ethmoidal polypi x-ray paranasal sinus Waters view was taken of which findings were as follows -

- Haziness in ethmoidal labyrinth on both sides in all 50 cases. Changes of maxillary sinusitis unilaterally in 10 cases and bilaterally in 18 cases. Out of 20 cases of antrochoanal polypi changes of maxillary sinusitis were found in 20 cases on affected side, and bilaterally in 05 cases.
- Shadow of the soft tissue mass in nasopharynx was seen in 02 cases.
- Bilateral changes of maxillary sinusitis in the maxillary sinus with expansion of ethmoidal labyrinth and external nasal deformity was found in a long standing recurring case of bilateral ethmoidal polypi, who developed polypi first at the age of 20 years.
- Nasal polypi are seldom recognized in nasal cavity individually on plain x-ray of paranasal sinuses and more usually the whole nasal cavity shows homogenous loss of translucence. Although expansion of ethmoidal cells occur more often in patients who develops symptoms at a young age, it remain obscure why all patients with long standing disease do not develop complications (Lund V.J. and Loyd G.A.S. 1983).^{4,5}

Conclusion:

From present study we may conclude that radiology plays the most important role in assessing and confirmation of nasal pathology.

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