

Original Research Article

To assess the value of various modalities of imaging in patients presenting with nose and paranasal sinuses disease

Dr. Rajendra Punjarao Kadam¹ (Associate Professor)

Department of ENT, Mamta Academy of Medical Sciences Hyderabad¹
Corresponding Author: Dr. Rajendra Punjarao Kadam

Abstract:

Background & Method: The aim of this study is to assess the value of various modalities of imaging in patients presenting with nose and paranasal sinuses disease. A detailed clinical history of nasal obstruction, rhinorrhoea, sneezing, loss of smell, pressure/pain over face, post nasal drip, allergy, eye symptoms were elicited. History of previous surgery, use of nasal drop instillation in past, history of recurrence, history suggestive of asthma, aspirin sensitivity and allergy were specifically noted.

Result: (44%) cases of chronic rhinosinusitis, (38%) cases of nasal polyps, (8%) cases of inverted papilloma and (2%) case each of rhinosporidiosis, rhinoscleroma, angioma of nasal septum, sinonasal adenocarcinoma, squamous cell carcinoma. The most common type of disease involving nose and paranasal sinuses was Inflammatory disease (86%), followed by Benign disease (10%), and Malignant disease were found in (4%) of cases.

Conclusion: The modality of choice in imaging the paranasal sinuses for evaluating the chronic diseases and associated complication. Most of the patients with sinonasal disease were from 2nd and 3rd decade. The most common disease was inflammatory (86%).

Keywords: modalities, imaging, nose and paranasal sinuses disease.

Study Designed: Observational Study.

1. INTRODUCTION

The demonstrative calculation for the sinus sicknesses keeps on developing alongside the advances in imaging modalities. Albeit most patients are medicinally treated, clinical treatment alone frequently doesn't determine the problem[1]. Because of a superior comprehension of the mucociliary leeway systems in the nasal cavity and paranasal sinuses, further developed endoscopes and the accessibility of coronal CT pictures. With the utilization of endoscopes the specialist can straightforwardly envision the surface mucosa inside the nose and ethmoid sinuses. Given the little region involved by the ethmoid sinuses and their relationship to basic designs, for example, the circle and the intracranial compartment, the radiographic picture is effectively used to direct the specialist's methodology and to stay away from serious complications[2].

Customary radiographs, while giving a gross physical representation and portraying the progressions of intense sinusitis in the maxillary, ethmoid, front facing and sphenoid sinuses, are not extremely helpful for exhibiting physical subtleties. Bapuraj JR et al 2006[3].The covering structures makes the assessment of the ostiomeatal complex (OMC), foremost ethmoid sinus, center meatus, and sphenoid sinus terribly restricted with plain film[4].

CT is presently the methodology of decision in the assessment of the nose and paranasal sinuses. its capacity to ideally show bone, delicate tissue, and air works with precise meaning of local life systems and degree of infection.

2. MATERIAL & METHOD

In the present study carried out in the department of Otorhinolaryngology at M.M.C.H & R.I. Kanchipuram. A total of 100 patients with clinical evidence of nasal and paranasal sinus diseases were evaluated completely from Sept 2018 to Aug 2019.

The patients comprised of age groups 00 to above 60 years with mass or polyp in nose and/or paranasal sinuses or having some complaints like bleeding from nose, nasal obstruction, discharge etc.

A detailed clinical history of nasal obstruction, rhinorrhoea, sneezing, loss of smell, pressure/pain over face, post nasal drip, allergy, eye symptoms were elicited. History of previous surgery, use of nasal drop instillation in past, history of recurrence, history suggestive of asthma, aspirin sensitivity and allergy were specifically noted.

Detailed personal and occupational history along with any family history suggesting allergy, asthma, and polyps were asked. All the patients underwent routine general examination to exclude general disease and/or spread of cancer to other systems and thorough examination of nose and paranasal sinuses, throat and ear were done.

The examination of polyp/mass including the possible site of origin, number, surface, colour, the result of probing was specifically recorded as to know its site of origin, vascularity and friability. Nasal cavity decongested with 4% xylocain with 1 in 1,00,000 dilution of adrenaline to see whether polyp/mass shrink in size. The effect of blowing through nose was noted. Nasopharyngeal extension may be documented by the use of posterior rhinoscopy.

3. RESULTS

Table 1: Age distribution

Age group	Number of cases	Percentage
< 15 year	16	16
16-30 year	36	36
31-45 year	24	24
46-60 year	22	22
>60 year	02	2
total	100	100

As revealed by above table there were (36%) cases in age group 16-30 years, (24%) in age group 31-45 years, (22%) cases in age group 46-60 years, (16%) cases in age group of below 15 years and one case (2%) in age group of above 60 years.

Table 2: Various disease included in the study

Disease	No. of cases	Percentage
Chronic rhinosinusitis	44	44
Nasal polyp	38	38
Rhinosporidiosis	02	02
Rhinoscleroma	02	02
Inverted papilloma	08	08
Angioma of septum	02	02
Sinonasal adenocarcinoma	02	02
Squamous cell carcinoma	02	02
Total	100	100

As in above table there were (44%) cases of chronic rhinosinusitis, (38%) cases of nasal polyps, (8%) cases of inverted papilloma and (2%) case each of rhinosporidiosis, rhinoscleroma, angioma of nasal septum, sinonasal adenocarcinoma, squamous cell carcinoma.

Table 3: Types of disease

Type of disease	No of cases	percentage
Inflammatory disease	86	86
Benign disease	10	10
Malignant disease	04	4
total	100	100

The most common type of disease involving nose and paranasal sinuses was Inflammatory disease (86%), followed by Benign disease (10%), and Malignant disease were found in (4%) of cases.

4. DISCUSSION

Conventional plain movies actually give the screening concentrates on in different sicknesses of nose and paranasal sinuses and provide direction and guidance to additional showed assessment with registered tomography. The CT is at present most normal radiologic strategy used to survey nose and paranasal sickness in light of better and authoritative pictures, acquired by CT[5].

CT screening of sinus affirm or prohibit the mucosal sickness as well as more significantly depicts the significant anatomic relationship with skull base and circle to paranasal sinuses, it is a guide for the surgeon[6].

Ongoing sinusitis related with inspissated mucous has characteristic hyperdense CT appearance. Polyposis of nasal cavity and paranasal sinuses, mucocele and harmless cancer will generally extend the area of beginning of their sluggish development. Steady tension decay and disintegration of the bone by the broadening delicate tissue mass, polyp and

mucocoele can readily identified on CT check. dangerous growth then again , generally obliterate bone and attack adjoining hard and delicate tissue structures, expansion into space, pterygopalatine fossa, infratemporal fossa or into cranial cavity can be exhibited by contrast improved CT examine. In the current review, 100 patients were likely to registered tomographic assessment following a primer radiological evaluation by plain x-beam PNS(water's view).

In the current review there were 19 cases (44.18%) of nasal polyps of which 9 were guys and 10 were females, male:female proportion were 1:1.12. Most extreme patients were from 11-20 years old. The most youthful patient was 10 year old male and oldest was 65 year old male patient. Out of 19 instance of nasal polyps remembered for the review, 13 (68.42%) were of antrochoanal polyp and 6 (31.57%) cases were ethmoidal polyps. Among antrochoanal polyps there were 5 patients male and 8 patients female (M:F proportion were 1: 1.6). The discoveries are predictable with the review done by Kaushal An et al 2004[7]. These patients gave principal objections intermittent nasal impediment, repetitive cold and hack. On CT, a polyp shows up as a very much outlined, adjusted delicate tissue injury that indents the aviation route and its wall without profound extention. [Chopra H 2008][8]. Likewise CT sweep of nasal polyps shows the smooth development of nasal fossae and pressure decay of the neighboring hard mass of the sinonasal cavity. Bone disintegration isn't normal with polyps. Notwithstanding, in forceful well established polyposis, there might be critical extension of the sinuses as well as bone disintegration. [(Mafee MF et al 2006][9].

5. CONCLUSION

The modality of choice in imaging the paranasal sinuses for evaluating the chronic diseases and associated complication. Most of the patients with sinonasal disease were from 2nd and 3rd decade. The most common disease was inflammatory (86%).

6. REFERENCES

1. Rahbar R, Vicente AR, Caroline DR, Antonio RP et al: Nasal Glioma and Encephalocele. *Laryngoscope* 2003, 113,2069-2077.
2. Zojaji R, Mirzadeh M, Naghibi S. Comparative evaluation of preoperative CT scan and intraoperative endoscopic sinus surgery findings in patients with chronic rhinosinusitis :Iran J Radiol 2008,5(2),77-82.
3. Oliverio PJ, Benson ML, Zinreich SJ: Update on Imaging for Functional Endoscopic Sinus Surgery. *Otolaryngologic Clinics of North America* 1995,28(3), 585-608.
4. Bapuraj JR, Khandelwal N: Imaging of the paranasal sinuses. *Diagnostic Radiology, Neuroradiology including Head & Neck surgery*. 2nd ed. New Delhi, Jaypee Brothers 2006, 458-486.
5. Vaid L, Khanna S, Singh PP: Impact of nasal polyps on quality of life of chronic sinusitis patients. *Indian J. Otolaryngol Head Neck Surg*. 2007, 59, 136-141.
6. Montague ML, McGarry GW :Familial antrochoanal polyposis – case report. *Eur.Arch Otorhinolaryngol* 2004, 361, 507-508.
7. Kaushal A, Vaid L, Sing PP : Antrochoanal polyp - Validating its origin and management by Endonasal Endoscopic Sinus Surgery (EESS). *Indian journal of otolaryngology and head and neck surgery* 2004, 56(4), 273-279.
8. Chopra H. Nasal polyps: a clinical, histopathological and radiological profile; *Indian J Otolaryngol Head Neck Surgery*. 2008; 60, 112-116.

9. Mafee MF, Tran BH, Chapa AR : Imaging of rhinosinusitis and its complication. Plain film, CT and MRI. Clinical reviews in allergy & immunology 2006, 30, 165-185.