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Original Research

Radiological findings of nasal polyps

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ABSTRACT:
Background: The study was conducted for the assessment of radiological findings of nasal polyp.**Material and methods**: This study comprised 100 subjects with nasal polyps. The subjects were told about the procedure and they were asked to give consent. All the subjects underwent radiological investigation for nasal polyps. The findings were recorded. Statistical analysis was conducted using SPSS software.**Results**: In this study, there were 50 males and 50 females. Out of 100 subjects, 23 subjects showed sinus opacity, 16 subjects showed intrasinus densities and 11 subjects showed high attenuation areas.**Conclusions**: The most common radiographic finding was sinus opacity followed by intrasinus densities.
Keywords:Nasal,Polyp

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INTRODUCTION

Nasal polyps (NP) are benign lesions arising from the mucosa of the nasal sinuses (commonly at the outflow tract of one or more of the sinuses) or from the mucosa of the nasal cavity. Having an uncertain etiology and a tendency to recur, they represent a challenging diagnosis for the physician to treat. Management of NP forms a large part of the workload for the otolaryngologist, especially for those with an interest in rhinology. In addition, it is important for the respiratory physician to be aware of aspects of the treatment of NP which can have a significant impact on chronic obstructive pulmonary disease, in particular asthma.[1]

During the past two decades, many studies have been performed to determine differential gene expression profiles between NP and normal nasal tissues, in order to identify susceptible genes that are associated with NP-related traits. A number of genetic association studies found a significant correlation between certain human leukocyte antigen (HLA) alleles and NP. The risk of developing NP can be as high as 5.53 times in subjects with HLA-DQA1*0201-DQB1*0201 haplotype.[2] The development and persistence of mucosal inflammation in NPs have been reported to be associated with numerous genes and potential single nucleotide polymorphisms. A recent study showed that in NP tissues, 192 genes were upregulated by at least twofold, and 156 genes were downregulated by at least 50% in NP tissues as compared to sphenoid sinuses mucosa.[3] It has also been postulated that an abnormal mucosal immune response underlies disease pathogenesis.[4] There are a number of genes which are involved in epithelial barrier maintenance and repair in the inflammatory state of NP.This study was conducted to assess the radiographic findings of nasal polyp.

MATERIAL AND METHODS

This study comprised 100 subjects with nasal polyps. The subjects were told about the procedure and they were asked to give consent. All the subjects underwent radiological investigation for nasal polyps. The findings were recorded. Statistical analysis was conducted using SPSS software.

RESULTS

Table 1: Gender-wise distribution of subjects.

Gender	Number of subjects	Percentage
Males	50	50%
Females	50	50%
Total	100	100%

Mean age of the patients was 43.7 years. Out of 100 subjects, 50 subjects were males and 50 subjects were females.

Table 2: Radiographic findings

Radiographic findings	Number of subjects
Sinus opacity	23
Intra-sinus densities	16
High attenuation area	11

Out of 100 subjects, 23 subjects showed sinus opacity, 16 subjects showed intrasinus densities and 11 subjects showed high attenuation areas.

DISCUSSION

Nasal polyps are mucosal lesions of the nasal or paranasal sinuses that can result from a response to inflammatory or infectious stimuli. They appear as smooth, round, semi-translucent masses that are most commonly found in the middle meatus and ethmoid sinuses and affect 1% to 4% of the population. Males are affected more than females and adults more than children. If it happens in childhood, mucociliary and immunodeficiency diseases must be ruled out, for example, patients with cystic fibrosis have a prevalence of nasal polyposis between 6% and 48%.[5] Patients with nasal polyposis may present clinically with complaints of nasal obstruction, congestion, hyposmia, rhinorrhea, epistaxis, postnasal drip, headaches, and snoring. Although nasal polyps more commonly appear bilaterally they can also present unilaterally. In unilateral nasal masses, benign or malignant pathologies must be considered and distinguished by nasal endoscopy, CT scan, and biopsy.[6]

The etiology of nasal polyps has been the subject of research for many years. Elevated levels of histamine and IgE found around polyps, and mast cells and eosinophilia found within polyps provide evidence suggesting that inflammation is a major factor in polyp formation. Previous studies have also revealed a relationship between nasal polyposis, aspirin intolerance, and allergic rhinitis and asthma.[7-9] The prevalence of nasal polyposis is higher in subjects with asthma than in non-asthmatics and 16.5% of asthmatic patients over 40 years of age have been shown to have nasal polyps.This study was conducted to assess the radiographic findings of nasal polyp.

In this study, there were 50 males and 50 females. Out of 100 subjects, 23 subjects showed sinus opacity, 16 subjects showed intrasinus densities and 11 subjects showed high attenuation areas.Chopra H et al[10] conducted a study on 50 patients of nasal polyps (diagnosed clinically or radiologically) from July 2003 to December 2005 selected from the inpatient department of Otorhinolaryngology, Dayanand Medical College & Hospital, Ludhiana. The results showed that 70% of the clinical findings were consistent with radiological findings. However, in rest 30% of cases, a difference of opinion was seen in non-neoplastic and neoplastic lesions. The diagnosis of allergic fungal or allergic non fungal can only be established on histopathology. It was concluded that for proper evaluation of nasal polyps clinical, radiological and histopathological evaluation should be done in all the patients, where radiology provides a road map to the endoscopic surgeons and warns of any existing or impending complications. Histopathology always gives a confirmatory diagnosis.Nair S et al analysed the varied presentations of patients with unilateral nasal mass and to identify features suggestive of neoplastic pathology. A retrospective review of all cases of unilateral nasal mass/polyp from Jan 09 to Jan 10 presenting at a tertiary care hospital were analysed. The patients were grouped as per their histopathological diagnosis as inflammatory and neoplastic. The demographic data, presenting symptoms, radiological and histopathological findings were compared between the two groups. Out of the 53 patients of unilateral nasal mass, 44 (83.1%) had inflammatory conditions and 9 (16.9%) had neoplastic conditions. Benign nasal polyp and inverted papilloma were the commonest inflammatory and neoplastic condition. Neoplastic conditions were significantly commoner in males (P = 0.0315) and in the age group above 50 years (P = 0.0046). Epistaxis and extranasal symptoms like facial pain, dental and orbital complaints were found to be significantly higher in neoplastic conditions. Neoplastic lesions of nose and paranasal sinus are one of the most challenging conditions that otolaryngologists have to diagnose and treat due to their hidden nature and late presentations. In our review neoplastic conditions were found to be higher in elderly male with epistaxis, extranasal symptoms and presence of extensive soft tissue involvement and bony destruction on CT scan.[11]

CONCLUSION

The most common radiographic finding was sinus opacity followed by intrasinus densities.

REFERENCES

1. Newton JR, Ah-See KW. A review of nasal polyposis. Ther Clin Risk Manag. 2008 Apr;4(2):507-12.
2. Fajardo-Dolci G, Solorio-Abreu J, Romero-Alvarez JC, Zavaleta-Villa B, Cerezo-Camacho O, Jimenez-Lucio R, et al. DQA1 and DQB1 association and nasal polyposis. Otolaryngol Head Neck Surg. 2006;135(2):243–247.
3. Liu Z, Kim J, Sypek JP, Wang IM, Horton H, Oppenheim FG, et al. Gene expression profiles in human nasal polyp tissues studied by means of DNA microarray. J Allergy Clin Immunol. 2004;114(4):783–790.
4. Ramanathan M, Jr, Lee WK, Spannhake EW, Lane AP. Th2 cytokines associated with chronic rhinosinusitis with polyps down-regulate the antimicrobial immune function of human sinonasal epithelial cells. Am J Rhinol. 2008;22(2):115–121.
5. Tritt S, McMain KC, Kountakis SE. Unilateral nasal polyposis: Clinical presentation and pathology. Am J Otolaryngol. 2008;29(4):230–2.
6. Pawanker R. Nasal polyposis: An update. Curr Opin Allergy Clin Immunol. 2003;3(1):1–6.
7. Hedman J, Kaprio J, Poussa T, Nieminen MM. Prevalence of asthma, aspirin intolerance, nasal polyps and chronic obstructive pulmonary disease in a population based study. Inter J Epidemiol. 1999;28:717–22.
8. Settipane GA, Chafee FH. Nasal polyps in asthma and rhinitis: A review of 6037 patients. J Allergy Clin Immunol. 1977;59:7–21.
9. Badia L, Lund V. Topical corticosteroids in nasal polyposis. Drugs. 2001;61(5):573–8.
10. Chopra H. Nasal polyps: a clinical, histopathological and radiological profile. Indian J Otolaryngol Head Neck Surg. 2008 Jun;60(2):112-6.
11. Nair S, James E, Awasthi S, Nambiar S, Goyal S. A review of the clinicopathological and radiological features of unilateral nasal mass. Indian J Otolaryngol Head Neck Surg. 2013;65(Suppl 2):199-204. doi:10.1007/s12070-011-0288-5