Study of Nasal Polyps in a Tertiary Care Hospital

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ABSTRACT
Nasal polyps are macroscopic oedematous lesions in the nose openings are the most common problem of the patients. Main causes of the polyps are due to inflammatory conditions and allergy. An association with asthma, aspirin sensitivity and cystic fibrosis was seen in the population. The main objectives of medical treatment of nasal polyps are to eliminate or reduce the size of the polyps thereby improving the symptoms of rhinitis and breathing. The clinical characteristics and treatment pattern among the 125 patients having nasal polyps was analyzed by a retrospective, observational study using patient’s medical records and hospital data management system. Males predominated in the present study (64.8%) and majority of the patients were in the age group of 41-60 years (44%). Most of the patients suffered from sinonasal polyposis (76.8%) with the main symptom being nasal block (88.8%). Most of the polyps were of the inflammatory origin (53.6%). Asthma and rhinitis were observed in 11% patients. Majority of the patients were treated with corticosteroids and antihistamines. Many patients required surgery for the management of nasal polyps. Nasal polyps appear to be associated with inflammatory and may be an allergic response. Most of the patients require surgery while few can be managed with anti-inflammatory and/or anti-allergic drugs.

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INTRODUCTION
Nasal polyps are non-cancerous oedematous masses arising from the nasal sinuses mucosa characterized by yellow or pink soft tissue, (Soltankhah et al., 2015) which affects either one or both parts of the nose openings to the ethmoidal sinuses descending between the middle turbinate and lateral nasal wall into the nasal cavity (Newton and Ah-See, 2008; Maharjan et al., 2017). The causes of these lesions are unknown till date. Few theories have stated that these lesions occur as a result of chronic inflammation in nose and nasal sinuses (Bateman et al., 2003). Elevated levels of interleukin-5 (IL-5) have been observed in patients with nasal polyps (Bachert et al., 1997). The prevalence of nasal polyposis in the general population is around 4%. The disease is predominantly evident among the adults especially patients above the age of 20. Rarely the polyposis is seen in children less than 10 years of age. Preponderance of male to female ratio (2:1) is seen among the population. Asthmatic patients are among the one-third of nasal polyp patients (Settipane, 1996). Classic symptom of nasal polyp is nasal obstruction but varies according to the site and size of the polyps seen. Watery rhinorrhea, postnasal drip, anosmia or
hyposmia with alteration in taste are other symptoms reported by the patients (Lee, 1997). Clinical examination using rhinoscopy shows single or multiple pale, grey polypoid masses consisting of loose connective tissue, oedema, inflammatory cells, capillaries and glands. The inflammatory cells present are the eosinophils and neutrophilic cells (Bachert et al., 2003). Management of nasal polyps is individualized, involving a combination of observation, medical and surgical therapy. Elimination or reducing the size of the nasal polyps present is the main goal of the physicians thereby providing relief of nasal obstruction, increased sinus drainage, restore the taste and smell (Mygind, 1999). Medical treatment is often started with the application of nasal steroids either as drops or sprays (Badia and Lund, 2001). Recently, leukotriene receptor antagonists are found effective (Kieff and Busaba, 2005). Antihistamines have been shown to effectively reduce the symptoms of nasal polyps (Haye et al., 1998). Cases those are refractory to medical treatment are reserved for surgical therapy (Fokkens et al., 2007). Endoscopic sinus surgery (ESS) helps in restoring sinus drainage and removes the nasal polyp or other soft tissues that are obstructing the natural sinus flow (Kennedy et al., 2001; Messerklinger, 1987).

MATERIALS AND METHODS

Present retrospective observational study involved 125 patients inclusive of all age groups with a diagnosis of nasal polyps. This study was conducted at our hospital from 2012-2016 following ethical approval. Since no patient contact was carried out, the need for informed consent was waived. Patient demographic details, co-morbidities, histopathology, treatment pattern for patients after surgery were collected. The data was transcribed into standard data collection forms.

RESULTS AND DISCUSSION

The study presents the results from 125 patients with nasal polyps who visited the ENT department of our tertiary care hospital during the period of 2012-2016. Majority of the patients with nasal polyps were male (64.8%). Most of the patients belonged to the age group of 41-60 years (44%). Maximum number of patients had sinonasal polyposis (76.8%) are shown in Table 1. Bilateral polyps were seen among 68% patients. Inflammatory polyps (53.6%) were more common than allergic 20.8% polyps. It is evident from the study that the major symptoms associated with nasal polyps were nasal block (88.8%), nasal discharge (40%), and headache (36.8%) as shown in Table 2. Table 3 depicts the main co-morbidities in patients with nasal polyps were hypertension (21.6%) and diabetes mellitus (12.8%). The most used drugs for nasal polyps were corticosteroids (22%), sodium chloride spray (17%), xylometazoline (17%), antihistamine (16%) and analgesics (13%). The most used steroid was budesonide. Bilateral functional endoscopic sinus surgery (FESS) (70.4%) was used for the removal of nasal polyps in majority of the patients as shown in Table 4. Most of the patients (88%) stayed in hospital for less than 5 days.

Table 1: General characteristics of the patients with nasal polyps.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td></td>
</tr>
<tr>
<td>&lt;17</td>
<td>10 (8)</td>
</tr>
<tr>
<td>18-40</td>
<td>39 (31.2)</td>
</tr>
<tr>
<td>41-60</td>
<td>55 (44)</td>
</tr>
<tr>
<td>&gt;60</td>
<td>21 (16.8)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>81 (64.8)</td>
</tr>
<tr>
<td>Female</td>
<td>44 (35.2)</td>
</tr>
<tr>
<td>Type of polyp</td>
<td></td>
</tr>
<tr>
<td>Sinonasal polyposis</td>
<td>96 (76.8)</td>
</tr>
<tr>
<td>Antrochoanal polyp</td>
<td>24 (19.2)</td>
</tr>
<tr>
<td>Ethmoidal polyp</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Location of nasal polyp</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>85 (68)</td>
</tr>
<tr>
<td>Right</td>
<td>20 (16)</td>
</tr>
<tr>
<td>Left</td>
<td>20 (16)</td>
</tr>
<tr>
<td>Histopathology of nasal polyp</td>
<td></td>
</tr>
<tr>
<td>Inflammatory polyp</td>
<td>67 (53.6)</td>
</tr>
<tr>
<td>Allergic polyp</td>
<td>26 (20.8)</td>
</tr>
<tr>
<td>Inflammatory allergic polyp</td>
<td>9 (7.2)</td>
</tr>
</tbody>
</table>

In the present study, majority of the patients were male and in the age group of 41-60 years. In a retrospective cross-sectional study, nasal polyps commonly affected men, and mean age of the patients was 39.49+16.63 years (Jahromi and Pour, 2012). All age groups are prone to be affected with nasal polyps (Moloney and Collins, 1977; Fechner, 1990). Males appear to be more prone to the development of nasal polyps (Sreeparvathi et al., 2017; Larsen and Tos, 2002). Majority of the patients in our study had sinonasal polyps, which is consistent with previous reports. In our study, bilateral nasal masses were present in 68% patients, while the remaining patients had unilateral nasal masses. In a study by
Hadfield et al., in 46% patients with polyposis, the polyps were unilateral. In a study by Lathi et al. unilateral nasal masses were present in 47.7% patients, while the remaining had bilateral nasal masses (Sharma et al., 2017). In our study, nasal block was the most common (88.8%) presenting complaint, followed by nasal discharge (40%) and headache (36.8%). These findings compare favorably with other studies (Lathi et al., 2011; Chukuezi, 1994). Inflammatory (53.6%) and allergic (20.8%) were the most common non-neoplastic mass reported in our study, which is consistent with other report (Keith, 1997). In a study by Lathi et al. allergic (62.5%) and inflammatory (25%) polyps were the most common non-neoplastic mass. Hypertension (21.6%), diabetes mellitus (12.8%), asthma and rhinitis (11.2%) each were the major comorbidities seen in our study. In a study by Rugina et al., 2002) 10.4% patients had asthma while 7.4% had allergic rhinitis. Corticosteroids remain...
the main treatment option for allergic condition. Improvement of nasal breathing, symptoms of rhinitis and size of nasal polyps are observed during steroid treatment (Unni et al., 2015). In a retrospective study conducted by Lathi et al., clinical improvement in patients with nasal polyps with topical nasal steroid therapy was reported. Corticosteroid treated group showed lower activated eosinophil in the tissues of stromal layer as compared to the non-treated patients. Surgical treatments are usually reserved for refractory cases of nasal polyps. FESS is the most commonly used surgical procedure. In our study, majority of patients had undergone bilateral FESS for the complete removal of polyp from nasal cavity. (Klossek et al., 1997) study have highlighted the surgical management of nasal polyps to minimize the complications and recurrence.

CONCLUSIONS
Nasal polyps appear to be associated with inflammatory and may be an allergic response. Most of the patients require surgery while few can be managed with anti-inflammatory and/or anti-allergic drugs.

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Conflict of interest
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