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Original Article

Prevalence of Antrochoanal Polyps in patients admitted to ENT ward of Imam Khomeini hospital in Ahvaz

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ABSTRACT

Objective: This study aimed to evaluate the prevalence of antrochoanal polyps (ACPs) and review the literature. **Methods and Materials:** We retrospectively studied the clinical presentation and operative records of 100 patients with ACPs treated surgically in August 2008-January 2019 (about 10 years). Age, gender, side, clinical symptoms, associated rhinological finding, a form of surgical treatment, postoperative complication, and recurrence rate were reviewed. **Results:** From 100 patients, 60% were male and 40% were female. The mean age of patients was 27.4 years (Age range: 8-64). The prevalence of ACPs between other polyps was 19% and between other diseases was 0/4%. The most common symptom was nasal obstruction (96.8%) and after that rhinorrhea (50%). 9.3% had bilateral polyps and 90.7% had unilateral polyps. 100% underwent FESS procedure. 25% had a history of sinusitis and 15% had a history of allergic diseases. The recurrence rate was 3% (3 cases) after an average of 20 months postoperatively. Complication after surgery consisted of mild epistaxis and periorbital edema that were seen in 2%. **Conclusion:** The results of this study were similar to other studies. This study recommends FESS as a safe and suitable procedure for ACPs. This study also suggests evaluating the relationship between allergy and ACPs in more specific future studies.

Keywords: Antrochoanal polyp, Endoscopic surgery, Nasal polyposis, Prevalence.

Introduction

Antrochoanal polyp (ACPs) is a single benign lesion seen in the maxillary sinus and comprises 4-6% of nasal polyps. It is most commonly seen in children and young adults (4-6%). However, in children, it is 33%. This polyp is an inflammatory lesion that originates in the mucosa of the maxillary sinus and expands through the natural or secondary pores to the nasopharynx. The appearance of these polyps is purely characteristic in imaging, as a marginal mass in the maxillary sinus extending to the nasal cavity and the nasopharynx. These polyps are often unilateral and occur in younger patients [1]. Histological examination of these polyps and deficit of eosinophil and mucosal glands distinguishes them from simple polyps [2]. These polyps, as well as other nose anomalies, such as the nasal septal deviation, can also cause headaches [3]. Isotonic saline is very effective in treating sinusitis caused by these polyps [4]. The most common symptom of these patients is nasal obstruction and then rhinorrhea. The preferred treatment for this type of polyp is surgery, which is the most commonly performed endoscopic transnasal resection technique or functional endoscopic sinus surgery (FESS). An endoscopic procedure is a safe and effective method of treatment of the disease where polyp resection is more complete and less likely to recur. The complications of polypectomy are often minor and include bleeding, recurrence, and so on. [5].

In this study, we aimed to determine the prevalence of ACPs among patients admitted to the ENT ward, as well as to study

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some factors, including age and sex distribution and symptoms of these polyps and surgical procedures and consequences of these methods (relapses and complications).

Materials and Methods

In this descriptive epidemiologic study, the records of all patients with ACPs diagnosed that admitted and underwent surgery in Imam Khomeini Hospital of Ahwaz during 2008-2019 were reviewed. Quantitative variables such as age and qualitative variables such as polyp and sex and anatomical region involved in polyp and associated sinusitis and allergic history in the individual, surgical method, recurrence, and surgical complications were studied. Finally, the mean was reported for quantitative variables and relative frequency for qualitative variables. SPSS software 23 was used to analyze the data.

Results

Overall, 100 patients with ACPs were admitted to our ward and underwent surgery. 60 patients (60%) were male and 40 patients (40%) were female. The mean age of patients was 27.4 years and patients were in the age range of 8-64 years old. The prevalence rate of antrochoanal polyp among other polyps is 19%, with a 95% probability ranging from 16 to 23%. In this study, the prevalence of antrochoanal polyps in all hospitalized patients during these ten years was 0.4%, with a 95% probability ranging from 0.5-0.3. The most common symptom was nasal obstruction (96.8%), and after that Rhinorrhea (50%), postnasal discharge (37.5%), night snoring and headache (34.3%), and oral breathing (18.7%), respectively. In our study 98 patients (98%) had unilateral polyps and two patients had bilateral polyps (2%). Of the patients with unilateral polyps, 63 patients (64.2%) had right and 35 patients (35.7%) had left polyps. In our study, all 100 patients underwent the endoscopic procedure (FESS). In this study, 25 out of 100 patients (25%) reported chronic sinusitis and 15 (15%) reported seasonal and skin allergies. In the study of 100 operated patients, relapse was observed in three cases, one after three years, one after one year, and one after 18 months. Therefore, the average repetition period is 20 months. Postoperative complications occurred in two patients (2%), one case was mild bleeding and one a case of periorbital edema.

Discussion

In this study, the incidence of antrochoanal polyps among other types of polyps was 19% and the prevalence in other diseases leading to hospitalization during the mentioned 10 years was 0.4%. A study by Cook PR et al., reported a prevalence of this polyp to be 22.3% [6]. In another study by Kansu L and colleagues, the prevalence of this polyp was 33% [7]. A study by Davoodi M. et al. reported a prevalence of 4-6% [8]. As the results of other studies show, the prevalence of antrochoanal polyps is different in different communities. In our study, 62 patients (62%) were male and 37 patients (37%) were female. The ratio of men to women was 1.6. Various studies by different people, such as Ozcan C et al., Freitas MR et al., Yuca K et al., and Altun H et al., have shown a higher proportion of men than women [9-12]. In a study by Naimi et al., 61.7% of the patients were male and 38.3% were female [10]. In their study, Eghtedari and colleagues also found that the disease was greater in men than in women, and the ratio of men to women in aqntrochoanal polyps was 5.5 to 1 [13]. In a study by Nikakhlagh et al., 58.5% of patients were male and 41.5% were female [14]. In a study by Sarafraz et al., 40% of the patients were male and 60% female, which is in contrast to the results of our and other studies [15]. In a study by Kelles M et al., there were 27 men and 19 women [16].

In most studies, such as the present one, the ratio of men to women was higher. In our study, the mean age of the patients was 27.4 years and the patients were between 8 and 64 years old. In a study by Nikakhlagh et al., the average age of patients was 26.5 years [14]. In various studies of Yuca K. et al., Ozcan C. et al., and Altun H. et al., the patients were in the same age group and the average age was 25 years old [9, 11, 12]. In a study by Ozdek A et al., the average age of the patients was 10.2 years [17]. In the study by Al-Mazrou KA and colleagues, 19 children with a mean age of 12.6 years and 16 adults with a mean age of 31.4 years were examined [18]. In the study by Freitas MR et al., 70% of patients were aged 8 to 20 years old [1]. As can be seen in most studies, the average age of patients was in the range of 20 to 30 years old, and the present study is consistent. In our study, 90.7% had unilateral polyps, and 9.3% bilateral polyps. Among patients with unilateral polyps, 53.1% had a right and 47% left polyp. In the Eghtedari and colleagues' study, 93% of cases had unilateral polyps and 70% right-sided polyps [13]. In the study of Ozcan C., 57.1% of the patients had polyps on the right, and 42.9% on the left [9]. A study by Yilmaz YF et al. reported bilateral antrochoanal polyps in adults [19]. In a study by Montague ML et al., the prevalence of bilateral antrochoanal polyps in the Caucasian population was estimated to be 1-4% [20]. A study by Sousa DW et al. also reported on bilateral antrochoanal polyps in adults [21]. As shown in our study, as in other studies, on the right side more polyps were observed, with bilateral antrochoanal polyps, which were rare in other studies, occurring more frequently in our study. In this study, all patients (n=100) underwent endoscopic surgery (FESS). In the study by Viros porcuna D. et al., 90% of patients were treated with FESS [22]. In the study by Orvidas et al., Yuca et al., Altun et al., and Gendeh et al., a FESS operation has been performed on most patients [11, 12, 23, 24]. In the study by Asaka D et al., all patients have undergone a FESS [25]. In the study of Aydin O. and colleagues, all 53 patients underwent FESS [26]. In the study by Sarafraz et al., 64% of patients have undergone FESS, 24%, Caldwell Lue, and 12% a combination of both [15]. In the study by Kelles M. et al., twenty-six patients received a FESS and 20 patients a combination of FESS and Caldwell Lue [16]. In the study

of Dr. Naimi, all patients underwent FESS surgery [10]. In the study by Nikakhlagh et al., all patients have undergone FESS [14]. As can be seen, fess has been confirmed in all cases as the dominant and most reliable method for the removal of antrochoanal polyps, and this is confirmed in our study. In the present study, the most common symptom was nasal obstruction (96.8%), rhinorrhea was followed by 50%, 37.5% had postnasal discharge, 34% had night snoring and headache, and finally, 19% had oral breathing, respectively. In the study of Freitas MR et al., Gendeh et al., Viros et al., and Orvidas et al., the most common symptom was nasal obstruction, followed by rhinorrhea, snoring, and oral breathing, respectively [1, 22, 23, 24]. The most common symptom in these patients was a nasal obstruction in the study of Dr. Naimi et al. and Eghtedari et al. [10, 13]. In the study of Nikakhlagh et al., the most common symptoms were nasal obstruction (100%) and rhinorrhea (57.4%) [14]. Besides, in the study of Sarafraz et al., the most common symptom was nasal obstruction (39%) [15]. Therefore, in the present study, the recurrence rate was 3%. One case was after 3 years, one case after one year, and one case after 18 months. The median duration of recurrence was 20 months. In the study by Nikakhlagh et al., Patients were followed 8 to 68 months after surgery, with a recurrence rate of 5.3% (5 cases) after 10 months of surgery [14]. In the study of Kamel R. and colleagues, 22 patients underwent a 20-month follow-up of surgery, and recurrence was not observed [27]. In the study by Viros et al., recurrence was seen in two cases (3.9%) [22]. Moreover, in the study of Freitas MR et al., the recurrence rate after surgery of 12.5% was calculated [1]. A recurrence rate of 14.2% was calculated in the study of Ozcan et al. [9]. In the study by Kelles M. et al., the recurrence rates were reported lower for the combined Caldwell-Luc and Fess methods [16]. In AL-Mazrou's study, the recurrence ratio in children to adults was 2:1 [18]. As can be seen, the percentage of recurrence in our patients was acceptable compared to similar studies. In the present study, postoperative complications were seen in 2 (1.5%) patients, one of whom had mild bleeding and one periorbital edema.

In the study of Dr. Naeimi et al., there were four cases of mild nose bleeding (8.5%) [10]. In Altun's study, the only complication observed after surgery was mild bleeding in two cases (17%) [12]. In the study by Yuca et al., Orvidas et al., and Ozcan et al., in 2% of patients, the most common cases were mild nasal bleeding [9, 11, 23]. As can be seen, the postoperative complications in this study are similar and acceptable compared to other studies. In our study, out of 100 patients, 25 (25%) were reported with chronic and recurrent sinusitis; and 15 patients (15%) reported a history of skin and seasonal allergies to allergic diseases. Since the histological examination of antrochoanal polyps differentiates eosinophil deficiency from simple polyps, a significant percentage of patients in our study suffered from sinusitis and allergic diseases. In the study by Gendeh et al., the most common rhinological finding has been associated with chronic sinusitis (50%) [24]. A study by Cook PR et al. confirmed an association between allergic diseases and the incidence of antrochoanal polyps [6]. In the study of Altun et al., 16.6% of allergic tests were positive in two patients [12]. In a study by Skladzien J et al., 10 patients were included that 2 patients were diagnosed with an allergy that did not appear to affect the polyp [28]. According to the study of Gendeh et al., the most common allergic finding was chronic sinusitis. As in the Cook PR and Altun studies, a percentage of patients had a notable allergy history. However, Skladzien J. in his study did not confirm the link between them. On the other hand, several sources still emphasize the relationship between them.

Conclusion

As noted in this study, a significant percentage of patients had chronic sinusitis and allergic diseases. Of course, it is worth noting that the case is based on the patient's history and maybe wrong. Some sources, however, regard allergy as an agent for the development of the antrochoanal polyp. It is therefore recommended to conduct further studies on patients to obtain the most accurate and reliable statistics for allergic tests. Due to the high prevalence of this polyp in children, it is recommended to conduct a study to compare the age groups of children and adults and to compare symptoms and surgical procedure, recurrence, and complication in each group separately, and compare them. It is recommended to conduct more specialized and analytical studies to determine the cause of the recurrence.

Conflict of Interest Statement:

No potential conflict of interest relevant to this article was reported.

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