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Profile of Antrochocanal Polyp Patients At Dr. Soetomo General Academic Hospital Surabaya

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ABSTRACT

Antrochoanal polyps are a type of benign nasal polyp that grows from the maxillary sinus and extends into the nasopharynx (back of the nose) through the choana. This polyp is characterized by unilateral growth and is often found in young adults. The purpose of this study was to describe the profile of antrochoanal polyp patients at Dr. Soetomo Hospital, Surabaya in 2022. This type of research is descriptive retrospective. The study was conducted for one year, namely with a research period from January to December 2022. Sampling was carried out by total sampling. Results: The most common gender is male, 11 people (68.75%). The most common age of polyp sufferers is 11-20 years, 10 people (62.5%). The most common clinical symptoms are nasal congestion and rhinorrhea, 16 people (100%). Complaints felt before treatment mostly ranged from 1 to 3 years, 10 people (62.5%). Comorbidities in antrochoanal polyps in the form of a history of allergies and septal deviation were the same, 2 people each (12.5%). The main management of antrochoanal polyps is surgery. As many as 15 patients had inflammatory polyp results (93.75%). Conclusion: The profile of antrochoanal polyp patients who underwent surgery at Dr. Soetomo Hospital showed a ratio of male and female patients of 2.2: 1, with the largest age group at 11-20 years. The most common main clinical symptoms were nasal congestion and rhinorrhea. Complaints felt lasted before treatment ranging from 1 to 3 years. The most common location of the nose affected was the left nose. Concomitant diseases of allergy history and septum deviation were equally common. The most common type of surgery performed was BSEF. The most common histopathology result was inflammatory polyp.

Keywords: *Antrochoanal polyps, benign nasal polyps, choana.*

1. INTRODUCTION

Antrochoanal polyps are benign lesions in the nose that are rarely found, usually occurring at a young age. The location of antrochoanal polyps is almost always unilateral, but in some cases they can grow bilaterally. The etiology of antrochoanal polyps is not yet known for certain, but chronic rhinosinusitis and allergies are suspected to be the main causes. Antrochoanal polyps are thought to be related to allergies because of the discovery of eosinophil components, but epidemiological evidence supporting this is still lacking.[1-3]

The incidence of antrochoanal polyps is 4-6% of all nasal polyps, while in Indonesia it is 0.2-0.4%.[4] The number of antrochoanal polyp cases at Dr. Soetomo General Academic Hospital, Surabaya fluctuates every year. There were 10 cases of antrochoanal polyps at Dr. Soetomo Hospital, Surabaya in 2019. A decrease in the number of cases occurred from 2020 to 2021, namely 8 cases in 2020 and 9 cases in 2021. An increase in the number of antrochoanal polyp cases at Dr. Soetomo Hospital, Surabaya occurred in 2022, namely 16 cases. The incidence of antrochoanal polyps in men compared to women is 2:1. Unilateral nasal congestion and rhinorrhea are the most common symptoms of antrochoanal polyps. These symptoms can be aggravated by the appearance of complaints of obstructive sleep apnea, dysphagia, and epistaxis.[5]

The main management of antrochoanal polyps is surgery. There are two surgical approaches for the management of antrochoanal polyps, namely the Caldwell-Luc procedure and functional endoscopic sinus surgery (FESS). The approach

through the Caldwell-Luc procedure provides sufficient access to the antrum, so that the removal of the polyp mass can be done completely. The FESS procedure consists of resection of the polyp in the intranasal and intraantrum parts while maintaining normal sinus mucosa through a middle meatus antrostomy. Postoperative recurrence of antrochoanal polyps is quite high. The combination of the FESS approach with Caldwell-Luc is expected to remove the antrochoanal polyp completely so that there is no recurrence.[5,6]

The prognosis of antrochoanal polyps is generally good, but there is a possibility of recurrence which is very dependent on the technique of removal of antrochoanal polyps. Antrochoanal polyps are not a fatal disease, but can be a problem that interferes with a person's quality of life in terms of work, education and daily activities.[5,7]

The purpose of this study was to provide a description of the profile of antrochoanal polyp patients at Dr. Soetomo Hospital, Surabaya in 2022.

2. RESEARCH METHODS

This study used a retrospective descriptive research design using medical record data from antrochoanal polyp patients at Dr. Soetomo Hospital. The study was conducted for one year, namely with a research period from January to December 2022.

The study population was antrochoanal polyp patients who were treated at Dr. Soetomo Hospital, Surabaya and underwent surgery. The research sample was a research population that met the inclusion and exclusion criteria. The inclusion criteria were complete medical record data to be recapitulated, including gender, age, clinical symptoms, duration of complaints, location of antrochoanal polyps, comorbidities, and histopathology results. The exclusion criteria were patients who had received previous drug therapy.

Sampling was carried out by total sampling. All data collected in the medical records were recapitulated using the Microsoft Excel application, then arranged into a table.

This study has received approval from the ethics committee of Dr. Soetomo Hospital with ethics number 1297/LOE/301.4.2/IV/2023.

Results

There were 16 patients with antrochoanal polyps at Dr. Soetomo General Academic Hospital who underwent surgery in the period January - December 2022.

Table 1. Demographics of antrochoanal polyp patients based on gender and age

Distribution	n	Percentage (%)
Gender Male	11	68,75
Female	5	31,25
Age ≤ 10	0	0
11-20	10	62,5
21-30	6	37,5

The distribution of gender in this study was male as many as 11 people (68.75%), while female as many as 5 people (31.25%). The comparison of the number of male and female patients was 2.2: 1. The most suffering age group from antrochoanal polyps was the group with an age range of 11 years to 20 years as many as 10 people (62.5%), with details of 6 men and 4 women. The group with an age range of 21-30 years as many as 6 people (37.5%), with details of 5 men and 1 woman (Table 1).

Table 2. Characteristics of antrochoanal polyp patients based on clinical symptoms

clinical symptoms	n	Percentage (%)
Dead nose	16	100

Rhinorrhea	16	100
Facial pain	7	43,75
Smell disorders	8	50
Cough	3	18,75
Nasal voice	10	62,5
Epistaxis	3	18,75

The clinical symptoms of patients when they arrived were nasal congestion and rhinorrhea in 16 people (100%), facial pain in 7 people (43.75%), smell disorders in 8 people (50%), cough in 3 people (18.75%), nasal voice in 10 people (62.5%) and epistaxis in 3 people (18.75%) and (Table 2).

Table 3. Characteristics of antrochoanal polyp patients based on the duration of complaints

Duration of symptoms (Years)	n	Percentage (%)
<1	5	31,25
1-3	10	62,5
3-6	1	6,25
Total	**16**	**100%**

The complaints felt had been going on before treatment for the most part for 1 to 3 years, as many as 10 people (62.5%), complaints for less than 1 year were as many as 5 people (31.25%) and complaints for 3 to 6 years were as many as 1 person (6.25%) (Table 3).

Table 4. Characteristics of antrochoanal polyp patients based on comorbidities

Chomorbidities	n	Percentage (%)
History of allergies	2	12,5
Septal Deviation	2	12,5

The accompanying diseases in antrochoanal polyps in the form of a history of allergies and septal deviation were the same, 2 people each (12.5%) (Table 4).

Table 5. Characteristics of antrochoanal polyp patients based on location

Location of Antrochoanal Polyps	n	Percentage (%)
Dextra Nose	7	43,75
Sinistra Nose	9	56,25
Total	**16**	**100%**

Characteristics of antrochoanal polyp patients based on location: 7 people (43.75%) in the right nose and 9 people (56.25%) in the left nose (Table 5).

Table 6. Characteristics of patients with antrochoanal polyps based on surgical approach

Operational Approach	n	Percentage (%)
FESS	15	93,75
FESS dan Caldwell-Luc	1	6,25
Total	**16**	**100%**

The main management of antrochoanal polyps is surgery. Patients who have been diagnosed with antrochoanal polyps will undergo surgery using the FESS approach or a combination of FESS and Caldwell-Luc. The results showed that in 16 patients with antrochoanal polyps who were operated on, 15 people underwent the FESS procedure (93.75%) and 1 patient underwent a combined FESS and Caldwell-Luc surgical procedure (6.25%) (Table 6).

Table 7. Characteristics of antrochoanal polyp patients based on histopathology results

Hystophatology	n	Percentage (%)
Inflammatory polyp	15	93,75
Allergic polyp	1	6,25
Total	**16**	**100%**

Postoperative histopathological findings in patients with antrochoanal polyps were that the majority of 15 patients had inflammatory polyp results (93.75%) and 1 patient had allergic polyp results (6.25%) (Table 7).

3. DISCUSSIONS

Antrochoanal polyps are polyps originating from the maxillary sinus mucosa that grow and herniate through the accessory sinus ostium and extend posteriorly towards the choana and nasopharynx.[3] This retrospective descriptive study was conducted using medical record data from patients with antrochoanal polyps at Dr. Soetomo Hospital, Surabaya for the period January - December 2022. The sample size was 16 samples that met the inclusion and exclusion criteria.

Distribution based on gender in this study found that most patients were male, namely 11 people with a percentage of 68.75% (Table 1). The ratio of the number of men to women is 2.2: 1. A retrospective study conducted by Gursoy, et al., (2019) which was conducted from January 2008 to August 2017 obtained data on the prevalence of antrochoanal polyps in 144 research subjects with a distribution of 65.2% men and 34.7% women. Another study in Egypt conducted by Mandour (2017) found that the ratio of men to women was 2.25:1. Pagella, et al., (2018) in their study showed that there were more male patients (65.5%) than women (34.5%). These results are in accordance with several studies that have been conducted. [1,3,6]

Antrochoanal polyps are more common in men than women, thought to be related to risk factors because men's jobs are more susceptible to exposure to dust, cigarette smoke and chemicals which are risk factors for the formation of antrochoanal polyps. Mantilla, et al., (2019) in their study involving 27 children with antrochoanal polyps, found that more than half of the total study subjects were passive smokers. This study indicates that there is a relationship between the incidence of antrochoanal polyps and cigarette smoke.[7,8]

The characteristics of antrochoanal polyp patients based on age in this study were found to be most common in the age range of 11-20 years, namely 10 people with a percentage of 62.5% (Table 1). These results are in accordance with the research of Meir, et al., (2021) which reported that the frequency of antrochoanal polyps peaked in patients with an age range of children and young adults.[9]

Torres, et al., (2016) in their research stated that antrochoanal polyps in children and adolescents are formed from the maxillary sinus because the floor of the maxillary sinus is directly connected to the alveolar of the teeth. The development and growth of teeth in children are often followed by the occurrence of gingivitis and periodontitis which are the origin of the formation of infections that can spread to the maxillary sinus and cause the formation of pseudocysts. Negative pressure in the maxillary sinus will cause the pseudocyst to continue to enlarge, causing some antrochoanal polyps to come out of the maxillary sinus into the nasal cavity.[10]

Chen, et al., (2021) conducted a study on the relationship between endotype and tissue remodeling in antrochoanal polyps. There is a relationship between increased neutrophil infiltration, inflammation, and dysregulation of coagulation, and fibrinolytic cascades with the occurrence of antrochoanal polyps. According to Kun, et al., (2020) in their journal, the levels of neutrophils, coagulation and fibrinolytic factors in the blood will decrease with age due to the immunosenescence process. This is in accordance with the results of the study that antrochoanal polyps occur more often in young people than in adults.[11,12]

Characteristics of antrochoanal polyp patients based on clinical symptoms in this study obtained the most results of nasal obstruction and rhinorrhea as many as 16 patients (100%) followed by complaints of nasal voice as many as 10 patients (62.5%), smell disorders as many as 8 patients (50%), facial pain as many as 7 patients (43.75%), and cough and epistaxis as many as 3 patients (18.75%) (Table 2). Common clinical symptoms found in antrochoanal polyp patients are nasal obstruction, followed by other symptoms such as rhinorrhea, nasal voice, foreign body sensation and smell disorders.[2] Kodur, et al., (2017) stated in their study, the clinical symptoms of antrochoanal polyps are unilateral nasal obstruction, sometimes preceded by epistaxis, purulent rhinorrhea, dysphagia and obstructive sleep apnea (OSA). This study is in accordance with the literature that the most common complaints of antrochoanal polyps are nasal obstruction, rhinorrhea, nasal voice and

epistaxis.[13]

Mechanical pressure due to polyps in the sinus cavity and total obstruction of airflow in the nose due to antrochoanal polyps that enlarge and fill the nasal cavity will cause complaints of blocked nose and pain in the cheek area. The antrochoanal polyp mass can be reddish due to hypervascularization. Hypervascularization conditions in the antrochoanal polyp tissue can trigger epistaxis due to mechanical pressure between the polyp mass and the nasal cavity. The effect of the antrochoanal polyp mass can cause a nasal voice. Saha, et al., (2018) in their study stated that a nasal voice can be caused by a mass that blocks the soft palate, making it difficult to speak. Drastic changes in the size of the space between the soft palate and the back wall of the pharynx will cause imperfect closure of the velopharynx when speaking.[14,15]

Characteristics of antrochoanal polyp patients based on the duration of complaints in this study obtained the most results for 1 to 3 years, which was 10 patients (62.5%) (Table 3). Research from Pagella, et al., (2018) obtained the average results of antrochoanal polyp patients feeling the initial symptoms of the disease until they went to the hospital for treatment was 9 months, this is related to the habit of people who tend to seek treatment when the complaints are felt to be very disturbing.[3]

Characteristics of antrochoanal polyp patients based on comorbidities, history of allergies and septal deviation, each with 2 patients (12.5%) (Table 4). The exact cause of antrochoanal polyps is still unknown, but several factors such as chronic inflammation, allergies and infections are risk factors for antrochoanal polyps. The relationship between antrochoanal polyps and allergic rhinitis is still a debate among researchers, because until now the etiology is still unclear.[15] Antrochoanal polyps are often accompanied by anatomical disorders of the sinonasal shape such as septal deviation and inferior concha hypertrophy. The most common abnormality is septal deviation as much as 63%. Strong and continuous air flow on the concave septum deviation will trigger antrochoanal polyps on the contralateral side of the septum deviation. [16]

Characteristics of antrochoanal polyp patients based on location in this study were found to be more in the left nose, namely 9 people (56.25%) (Table 5). Research conducted by Pagella, et al., (2018) on 58 antrochoanal polyp patients, found 27 patients in the right nose (46.6%), and 31 patients in the left nose (53.4%). There was no difference between the location of antrochoanal polyps affecting the right or left nose. Some cases of antrochoanal polyps can affect the bilateral nasal cavity.[3,17]

A total of 15 antrochoanal polyp patients in this study underwent FESS surgery (93.75%) (Table 6). The FESS surgery method has become the gold standard for antrochoanal polyp therapy in recent years because it has minimal side effects. The cystic part of the antrochoanal polyp in the antrum must be completely removed by making a wide middle meatus antrostomy to avoid recurrence. [18] Antrochoanal polyp surgery in children using the FESS approach is considered quite safe and effective, but the Caldwell-Luc approach provides a wider field of view, so that antrochoanal polyp excision can be performed completely. Several experts are still debating the side effects of the development of teeth and maxillary bones in children using the Caldwell-Luc approach. There are several risks due to the Caldwell-Luc surgery procedure, including edema of the cheeks, infraorbital nerve injury, facial hypoesthesia, and a fairly long healing process. [18,19]

The recurrence rate of antrochoanal polyps after FESS surgery is 0–17.4% while after Caldwell-Luc surgery it is 0–4.7%. Surgery through a combination of FESS and Caldwell-Luc approaches can be the main choice to reduce the recurrence rate of antrochoanal polyps. Correct diagnosis and therapy of antrochoanal polyps are needed to avoid recurrence and postoperative complications such as secondary rhinosinusitis. Postoperative monitoring is carried out for 2 years to assess the recurrence of antrochoanal polyps.[18,19]

The majority of antrochoanal polyp patients based on histopathology results in this study were 15 patients showing inflammatory polyp histopathology results (93.75%) (Table 7). The histopathology findings in antrochoanal polyp patients found a lot of inflammatory cell infiltration, while eosinophil cell infiltration was very little. The results of this study are in accordance with the results of the study conducted by Chagarlamudi, et al., (2019).[15]

Antrochoanal polyps consist of many inflammatory cells including neutrophils and lymphocytes, but only very few eosinophils and submucosal glands. This is in contrast to the histopathology results in allergic polyps. Changes caused by the inflammatory process play an important role in the pathogenesis of antrochoanal polyps. Antrochoanal polyps originate from hypertrophied respiratory epithelial tissue, in contrast to allergic polyps originating from distended glandular structures. This is in accordance with the results of research that the majority of antrochoanal polyps are the result of a chronic inflammatory process, not an allergic process.[9,15]

4. CONCLUSIONS

The profile of antrochoanal polyp patients who underwent surgery at Dr. Soetomo Hospital in this study amounted to 16 people. The ratio of the number of patients between men and women was 2.2: 1, with the largest age group at the age of 11-20 years. The most common main clinical symptoms were nasal congestion and rhinorrhea. Complaints felt lasted before treatment ranging from 1 to 3 years. The most common location of the nose affected was the left nose. Concomitant diseases of allergy history and septum deviation were equally numerous. The most common type of surgery performed was BSEF. The most common histopathology result was inflammatory polyp.

REFERENCES

[1] Mandour ZM. Antrochoanal polyp in pediatric age group. Egyptian Journal of Ear, Nose, Throat and Allied Sciences 2017;18:17–21.

[2] Bakshi SS, Vaithy A. Antrochoanal polyp. J Allergy Clin Immunol Pract 2016;5(3):806–7.

[3] Pagella F, Emanuelli E, Pusateri A, Borsetto D, Cazzador D, Marangoni R, *et al*. Clinical features and management of antrochoanal polyp in children: cues from a clinical series of 58 patients. Internal Journal of Pediatric Otorhinolaryngology 2018;114:87–91.

[4] Indriany P, Munir MA, Nancy O. Management of patients with antrochoanal nasal polyp at the poly ENT-HN Undata General Hospital Palu. Journal Medical Profession 2020;2(3):176–81.

[5] Galluzzi F, Pignataro L, Maddalone M, Garavello W. Recurrences of surgery for antrochoanal polyps in children: a systematic review. International Journal of Pediatric Otorhinolaryngology 2018;106:26–30.

[6] Gursoy M, Erdogan N, Cetinoglu YK, Dag F, Eren E, Uluc ME. Anatomic variations associated with antrochoanal polyps. Niger J Clin Pract 2019;22:603–8.

[7] Park M, Lee JS, Park MK. The effects of air pollutants on the prevalence of common ear, nose, and throat diseases in South Korea: a national population-based study. Clin Exp Otorhinolaryngol 2019;12(3):294–300.

[8] Mantilla E, Villamor P, Tore CD, Alvarez-Neri, H. Combined approach for paediatric recurrent antrochoanal polyp: a single-centre case series of 27 children. J Laryngo Otol 2019;133(7):627–31.

[9] Meir W, Matias AK, Yosepovich A, Halperin D, Cohen O. Inflammatory profile of antrochoanal polyps in caucasian population – a histologic study. American Journal of Rhinology & Allergy 2021;35(5):664–73.

[10] Torres GD, Sotelo LR, Vaz SL, Booscolo SM, Booscolo FN. Association between maxillary sinus pathologies and healthy teeth. Braz J Otorhinolaryngol 2016;82(1):33–8.

[11] Chen CL, WangYT, Yao Y, Pan L, Guo B, Zhu KZ, *et al.* Inflammatory endotypes and tissue remodeling features in antrochoanal polyps. Allergy Asthma Immunol Res 2021;13(6):863–81.

[12] Kun L, Guang PY, Hua YR, Qi SW, Xia PX, Xin N. Age-dependents changes of total differential bood cell counts in children. Chinese Medical Journal 2020;133(16):1900–7.

[13] Kodur S, Siddappa SM, Shivakumar AM. Giant antrochoanal polyp-a rare presentation. J Clin Diagnostic Res. 2017;11(1):1–2.

[14] Saha S, Moussavi Z, Hadi P, Bradley TD, Yadollahi A. Effects of increased pharyngeal tissue mass due to fluid accumulation in the neck on the acoustic features of snoring sounds in men. J Clin Sleep Med 2018;14(10):1653–60.

[15] Chagarlamudi K, O'Brien WT, Towbin RB, Towbin AJ. Antrochoanal polyp. Appl Radiol 2019;48(1):38–40.

[16] Ertugrul S. Origin of polyps and accompanying sinonasal pathologies in antrochoanal polyp patients: analysis of 22 patients. North Clin Istanbul 2018;6(2):166–70.

[17] Keshri N, Bansal A, Popli G, Venkatesh A, Goel S. Antrochoanal polyp arising from benign pseudocyst of maxillary antrum. J Indian Soc Pedod Prev Dent 2017;35(3):275–8.

[18] Peric A, Vukadinovic T, Kujundzic T, Labus M, Stoiljkov M, Durdevic BV. Choanal polyps in children and adults: 10-year experience from a tertiary care hospital. Eur Arch Otorhinolaryngol 2019;276(1):107–13.

[19] Yazici ZM, Gunes S, Aydin E, Gulustan F, Abakay MA, Sayin I. Association of antrochoanal polyps with contralateral site sinus obliteration. Eur J Rhinol Allergy 2020;3(1):13-6.