Jurnal Ners Volume 8 Nomor 1 Tahun 2024 Halaman 291 - 296
JURNAL NERS
Research & Learning in Nursing Science
http://journal.universitaspahlawan.ac.id/index.php/ners

CHALLENGES IN THE CLINICAL MANAGEMENT OF A SUBSTANTIAL ANTROCHOANAL POLYP: A CASE REPORT OF PERSISTENT ANATOMICAL OBSTRUCTION

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Abstract

Antrochoanal polyps (ACPs) are rare, predominantly benign nasal growths originating from the maxillary antrum's mucosal lining, representing a small fraction of nasal polyps. This report discusses the case of a 17-year-old male with a significant ACP, focusing on the difficulties encountered in treatment. Despite medical and surgical efforts, the patient continued to suffer from nasal obstruction and related symptoms. Clinical and imaging assessments, including computed tomography, identified a large ACP causing significant obstruction in the sinonasal complex, alongside other issues like sinusitis, nasal concha hypertrophy, and nasal septal deviation. These findings highlight the complexity and need for thorough diagnostic evaluations in ACP cases. The patient is undergoing treatment with cetirizine and tranexamic acid and awaits Functional Endoscopic Sinus Surgery (FESS) to address the sinus pathologies comprehensively. The case illustrates the diagnostic and management challenges of ACPs, emphasizing the importance of prompt, accurate diagnosis and adaptable treatment strategies. Research into ACPs' disease mechanisms is vital for improving diagnostic accuracy and patient outcomes. This case underscores the need for a holistic approach in treating such conditions, integrating comprehensive diagnostics and personalized therapeutic plans.

Keywords: *Antrochoanal polyp, sinonasal complex, chronic sinusitis*

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PENDAHULUAN

An antrochoanal polyp (ACP) is a predominantly benign growth originating from the maxillary antrum's mucosal lining. Its development typically initiates within the confines of the antrum, progressing through its ostium into the middle meatus and further extending into the posterior choana with the potential to penetrate the nasopharynx.(Agha et al., 2020; Chaiyasate et al., 2015) These polyps, characterized by their solitary nature, demonstrate a particular affinity for manifestation in young adults, especially those below 40. Despite constituting a mere 5% of sinonasal polyps, ACPs exhibit a higher incidence among the male demographic.(Iziki et al., 2019; Konstantinidis et al., 2008)

This case report elucidates the clinical presentation of a 17-year-old male who sought medical attention due to the emergence of a substantial antrochoanal polyp. Despite the patient's attempts at treatment, the persistent complaint indicated a lack of improvement. The growth intricately resulted in pronounced obstruction within the right maxillary sinus, nasal cavity, nasopharynx, oropharynx, and hypopharynx. This comprehensive manifestation emphasizes the potential for antrochoanal polyps to impact multiple anatomical regions within the sinonasal complex significantly and underscores the challenges encountered in achieving resolution even with medical intervention.

The progression of ACPs from their origin in the maxillary antrum to their extension into various anatomical structures emphasizes the dynamic nature of these proliferations.(Al-Qudah, 2011; Oner et al., 2015) Further exploration of such cases contributes to understanding the clinical variability and anatomical complexities associated with antrochoanal polyps.

CASE REPORT

A 17-year-old male patient underwent examination at the Otolaryngology Clinic located at Sumber Waras Hospital, presenting with a history of bilateral nasal obstruction persisting for the past 9 months. Initially, the symptoms were intermittent, but over the last 2 months, they escalated, leading to breathing difficulties and a proclivity for mouth breathing. Additionally, the patient reported recurrent episodes of clear, odourless nasal discharge. Prior treatment at a Primary Health Center with unspecified medication proved ineffective. Consequently, the patient was referred to another hospital where surgery was conducted 2 minggu sebelum datang ke poliklinik tht; nevertheless, the symptoms persisted.

The patient displayed moderate distress upon physical examination, with vital signs falling within normal parameters. Otoscopic and nasal examinations revealed reduced airflow through the right nostril, constriction in both nasal cavities, and secretions, and a pale, efficiently mobilized polypoid mass obstructing the right inferior nasal meatus. Nasofibroscopy indicated secretions in both nasal passages and a pale, mobile polypoid mass originating from the ostium of the right maxillary sinus.

Figure 1. Polypoid mass arising from the Ostium of the Right Maxillary Sinus

The findings from computed tomography (CT) scans of the paranasal sinuses elucidate a spectrum of sinonasal pathologies. Notably, the assessment discerned the presence of a retention cyst within the confines of the left maxillary sinus, indicative of a localized mucosal abnormality. Concurrently, the right maxillary sinus exhibited signs of sinusitis, characterized by inflammation, with additional polyp identification, suggesting a benign proliferative growth within the sinus cavity. Furthermore, the CT scan revealed a degree of obstruction in the right ostiomeatal complex, indicating potential impairment in the drainage pathway of the sinus. Bilateral hypertrophy of the nasal conchae, as observed in the imaging, raises suspicion of rhinitis, a condition typified by nasal mucosal inflammation. This multifaceted diagnostic panorama is further compounded by the discerned deviation of the nasal septum, demonstrating a leftward deflection of approximately 6 degrees. Such nasal septal deviation contributes to the overall nasal obstruction and may play a role in the pathogenesis of sinus-related symptoms.

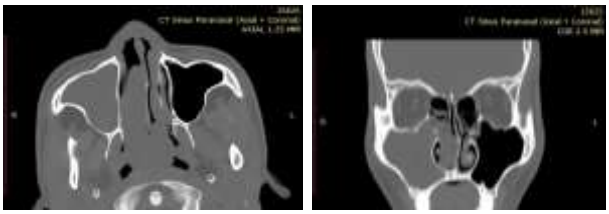

Figure 2. Right-sided nasal polyp associated with right maxillary sinusitis.

The patient is currently undergoing a treatment regimen that includes 10mg of cetirizine daily and twice-daily intranasal steroid application. These medications are intended to control allergy symptoms and provide relief from the patient's complaints. Cetirizine, an antihistamine, targets allergic reactions, while the intranasal steroid addresses nasal inflammation. This pharmacotherapy is a preliminary measure to manage symptoms ahead of a more definitive intervention: Functional Endoscopic Sinus Surgery (FESS). FESS, a targeted minimally invasive surgery, is planned to rectify the patient's sinus pathology. The surgery aims to improve the patient's sinus health by addressing the underlying issues in the sinus anatomy.

The therapeutic strategy encompasses both immediate symptom relief through medication and long-term resolution via FESS. The patient's medication regimen will be regularly evaluated and adjusted as needed, based on their response and progress. This approach ensures a patient-specific, effective treatment plan. During the FESS procedure, the patient's sinus tissue was observed to be irregularly shaped, with a volume of approximately 8 cc. The tissue appeared white to brownish in color and had a soft yet firm consistency (Figure 3).

Figure 3. Extracted Tissue

The anatomical pathology examination of the patient's sinus tissue revealed characteristics indicative of polypoid formations. These formations were coated with a layer of stratified ciliated columnar epithelium, typical of respiratory mucosa. The underlying stromal tissue exhibited signs of edema, indicating inflammation. Surrounding this swollen stroma, a significant infiltration of various immune cells was observed, including lymphocytes, plasma cells, neutrophils, and eosinophils. These cell types are commonly associated with an active immune response, particularly in inflammatory conditions. Furthermore, the pathological assessment noted an increased density of blood vessels within the affected tissue, a common occurrence in inflammatory processes due to the need for increased blood flow to deliver immune cells and nutrients to the site of inflammation. Accompanying this vascular proliferation were areas of hemorrhage, likely resulting from the fragility and increased permeability of the newly formed blood vessels. Additionally, areas of fibrosis, or scar tissue (referred to as "kerosis" in the report), were present, suggesting a chronic aspect of the inflammatory process, where healing and repair mechanisms lead to scar tissue formation. The overall pathological findings were conclusive in diagnosing the tissue changes as characteristic of inflammatory polyps. This type of polyp is often associated with chronic inflammatory conditions of the nasal passages and sinuses, such as chronic sinusitis.

Subsequent to the surgery, the patient returned for a follow-up consultation three months later. Remarkably, the patient reported a complete resolution of previous complaints, a positive indication of the surgery's success. A thorough physical examination of the nasal cavity revealed no residual polyps, signifying effective removal during the surgery. Additionally, the patient's nasal septum, which might have been deviated, affected by the presence of polyps or chronic inflammation, was found to be realigned and straight. This observation is significant as a straight septum can improve nasal airflow and reduce the likelihood of recurrent sinus issues. The overall clinical picture at the follow-up visit suggested a successful surgical intervention with effective post-operative healing and resolution of the initial pathological condition.

DISCUSSION

Antrochoanal polyps, atypical and benign growths originating from the maxillary antrum, represent a minority (4-6%) of nasal polyps, marked by an indistinct etiology with potential links to allergic factors. Despite divergent perspectives on the allergic aspect, patients consistently exhibit symptoms indicative of sinonasal disease. Investigative efforts are imperative to elucidate the interconnections between chronic sinusitis and antrochoanal polyps, exploring the roles of inflammatory mediators and the expression of tumor markers.(Frosini et al., 2009; Larsen & Tos, 2002) The conceivable emergence of a sphenochoanal polyp from the sphenoid sinus further adds complexity to this pathologic entity. Typically encountered in isolation, antrochoanal polyps predominantly affect individuals under 40, demonstrating a male predilection. While uncommon in the pediatric population, reports suggest an elevated incidence among individuals with cystic fibrosis.(Aydin et al., 2007; Warman et al., 2021)

Primary clinical manifestations encompass unilateral nasal obstruction, rhinorrhea, epistaxis, post-nasal drip, and snoring. The spectrum of differential diagnoses extends to masses associated with the maxillary antrum. The judicious utilization of diagnostic imaging, particularly contrast-enhanced CT scans and gadolinium-enhanced MRIs, assumes a pivotal role in attaining precision in diagnosis.(Alanazy et al., 2018; Yaman et al., 2010)

The swift diagnosis of antrochoanal polyps holds paramount significance in forestalling the potential onset of undesirable complications. Swift diagnostic resolution is imperative, given the propensity of this condition to instigate recurrent sinus infections and complicate subsequent surgical interventions.(Sabino et al., 2014; Sousa et al., 2011) Early diagnosis not only expedites prompt and efficacious surgical intervention but also forestalls further structural compromise or exacerbation of symptomatic presentations. Advocating for heightened awareness among both the public and healthcare practitioners concerning associated symptoms and fervently endorsing immediate medical attention plays a pivotal role in expediting diagnostic processes.(Ozdek & Ozel, 2014; Yaman et al., 2010)

In our case, patient has made efforts to undergo treatment at both the primary health center and the hospital, yet the complaints persist without improvement. Previous medical interventions involved two levels of healthcare services, namely at the primary health center, which generally provides basic health services, and at the hospital, where more complex healthcare services are available. Nevertheless, there has been no significant improvement in the patient's health condition. This suggests that the previous medical interventions may not have been entirely effective in addressing the patient's complaints related to the antrochoanal polyps.

It is important to note that the lack of response to previous treatment can provide valuable insights for the medical team caring for the patient. A reassessment of the previously applied treatment strategies and consideration of more advanced or specialized treatment approaches may be necessary steps to improve the patient's treatment outcomes. The overall case management needs to be directed toward a thorough understanding of the complexity of the disease and the patient's response to the therapies previously administered.

Moreover, an augmented comprehension of the intricate interplay between antrochoanal polyps and chronic sinusitis, complemented by ongoing research endeavors unraveling disease mechanisms, contributes substantively to the expeditiousness and accuracy of diagnostic approaches.(Bidkar et al., 2019; Yaman et al., 2010) The cumulative impact of these concerted efforts optimizes the overall management of antrochoanal polyps, effectively diminishing the propensity for complications and concurrently enhancing the overall quality of life for affected individuals.

CONCLUSION

This case underscores the complexity and challenges associated with antrochoanal polyps (ACPs). Despite constituting a minor proportion of nasal polyps, ACPs, particularly in this unique presentation of a 17-year-old male, demonstrate a potential for significant impact on multiple anatomical regions within the sinonasal complex. The diagnostic journey, marked by clinical examinations and advanced imaging, reveals the intricacies of ACP cases, including associated sinonasal pathologies and the need for comprehensive diagnostic assessments. The lack of resolution despite attempted medical intervention emphasizes the adaptive nature required in therapeutic strategies. The holistic

approach encompassing pharmacological management and scheduled Functional Endoscopic Sinus Surgery (FESS) reflects the evolving landscape of ACP treatment. Recognition of the interplay between ACPs and chronic sinusitis is paramount for swift and accurate diagnoses, mitigating potential complications. Ongoing research into disease mechanisms contributes to diagnostic accuracy, optimizing overall ACP management and improving patient outcomes. The presented case serves as a testament to the nuanced nature of ACPs, encouraging continued exploration for enhanced diagnostic and therapeutic approaches in the realm of sinonasal pathologies.

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