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ПРИКАЗ БОЛЕСНИКА / CASE REPORT
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Giant Destructive Sinonasal Polyposis

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SUMMARY

Introduction Authors report their clinical experience in managing a 46-year-old male patient with long lasting nose breathing difficulties caused by nasal obstruction due to a large bilateral tumor masses in both nasal cavities.

Case Outline Physical examination, laboratory and biochemistry analyses, as well as computed tomography showed an inhomogeneous soft-tissue tumor mass completely filling both nasal cavities, maxillary, ethmoidal, sphenoidal, and frontal sinuses on both sides, accompanied by destruction of bony walls of all sinuses. Preoperative histopathology analysis showed a polyp with squamous metaplasia. The gigantic polypoid mass was removed by bicoronal approach to the frontal and ethmoidal sinuses and by direct approach to the maxillary sinuses and nasal cavity. Definite histopathology analysis confirmed the initial diagnosis, but the presence of fungal hyphae in allergic mucus was also observed.

Conclusion Polypoid growth in the nose rarely grow to such gigantic dimensions that it causes destruction of all walls of paranasal sinuses. Considering so far published reports from the literature, the presented case is among the biggest nasal polyps reported until now.

Keywords: giant sinonasal polyp; squamous metaplasia; surgical treatment

INTRODUCTION

Nasal polyposis is a chronic, inflammatory disorder of mucous membranes of the nose and paranasal sinuses, presenting with soft, smooth, pedunculated, tumor-like masses in the nasal cavity. According to the data from the literature, the prevalence of nasal polyposis in general population is 1-4% [1, 2, 3], while the prevalence is much higher in persons with comorbidities such as asthma, aspirin intolerance or cystic fibrosis. In cases of allergic fungal rhinosinusitis, nasal polyposis can be seen in 66-100% of cases [4]. Etiopathogenesis of sinonasal polyposis yet remains unclear, but it has been shown that inflammation plays the major role in the development and progression of the disease [5-10]. The most common symptoms of nasal polyps include nasal obstruction, nasal secretion and hyposmia. Others signs and symptoms such as severe headaches and eyelid proptosis may suggest imminent complications, especially in patients with diabetes mellitus who are more susceptible to fungal infections. Furthermore, appearances of diplopia or VI cranial nerve paralysis are signs of intracranial irritation.

Although in general sinonasal polyposis does not belong to the group of life-threatening conditions, cases of eosinophilic pansinusitis with polyposis and destruction of bony walls of the middle and posterior cranial fossa have been described in the literature. Aspergilosis of sinuses can have a complicated clinical course with destruction of the skull base [11] and in some cases eosinophilic fungal sinusitis can cause destruction of frontal sinuses and compression of the dura of the middle cranial fossa in young adults [12].

We report a case of a massive, gigantic nasal polyposis with destruction of bony structures (medial and anterior walls of maxillary sinuses, anterior and posterior walls of frontal sinuses) in an adult patient who was successfully treated surgically. The Ethic Committee of the Clinical Centre of Serbia approved this case report.

CASE REPORT

A 46-year-old male patient was admitted at the Clinic due to nasal obstruction and impaired nasal breathing lasting for several years. Six months before admission, the patient noticed a left-sided edema of the face, diplopia and inability to feel odors. Physical examination of the patient revealed massive polypoid masses completely filling both nasal cavities (Figure 1). The patient had divergent strabismus. Computed tomography (CT) of the brain and paranasal sinuses showed an inhomogeneous soft-tissue mass, which completely filled both nasal passages, maxillary and frontal sinus on both sides, accompanied by destruction of bony walls, medial and anterior walls of maxillary sinuses, both medial orbital walls, ethmoidal cells, sphenoid sinus and anterior and posterior walls of frontal sinuses (Figure 2). The mass was in contact with the dura.

Routine laboratory and biochemistry analyses were within the normal range, except el-

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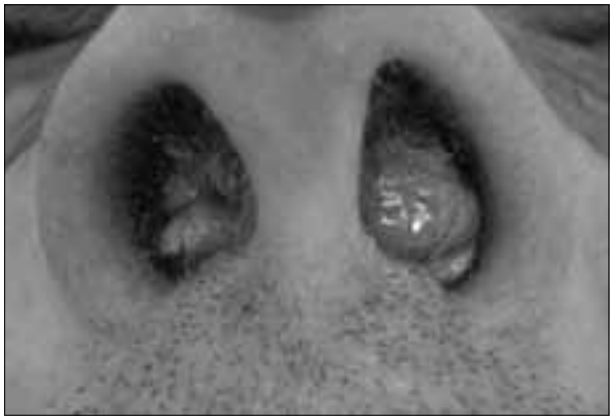

Figure 1. Massive polypoid masses completely filling both nasal cavities

evated total serum levels of IgE. Cutaneous PRICK test for standard inhalation allergens was negative.

The tissue sample was obtained and histopathology analysis showed a polyp displaying combination of stromal edema and containing a mild infiltrate of eosinophils, plasma cells and lymphocytes. The surface epithelium was of the respiratory type, with areas of squamous metaplasia (Figure 3). Allergic mucus was observed with sporadic fungal hyphae.

After a thorough preoperative preparation, the patient was treated surgically by bicoronal approach. During surgery a defect of bony anterior wall of the frontal sinus was found measuring 10×10 mm on the right and 8×5 mm on the left side. Both frontal sinuses were filled with polyps, mucosa with chronic changes and with thick, mucous secretion. The defect of the posterior wall of the sinus was almost ¾ of the area, with no signs of lesion of the dura and cerebrospinal fluid leakage. Defect of both superior orbital walls was noted. Bilateral ethmoidectomy was also performed and polyps from ethmoidal cells and sphenoid sinus were removed. The maxillary sinus was accessed using Caldwell-Luc approach, and destruction of both anterior walls was observed. Medial walls were also completely missing. In the end, the polyps were removed from the nasal cavity and endoscopic examination was performed. Defect of the posterior wall of frontal sinus was reconstructed with a pericranial flap and sealed with Beriplast®, and the defect of orbital roof was reconstructed with aliphatic polyester urethane (Neuro-Patch®) and also sealed with fibrin sealant (Beriplast®). Repositioning of the anterior wall of the frontal sinus and its fixation was done with two titanium microplates.

Antibiotic and corticosteroid treatment was administered immediately after surgery. Moreover, antimycotic

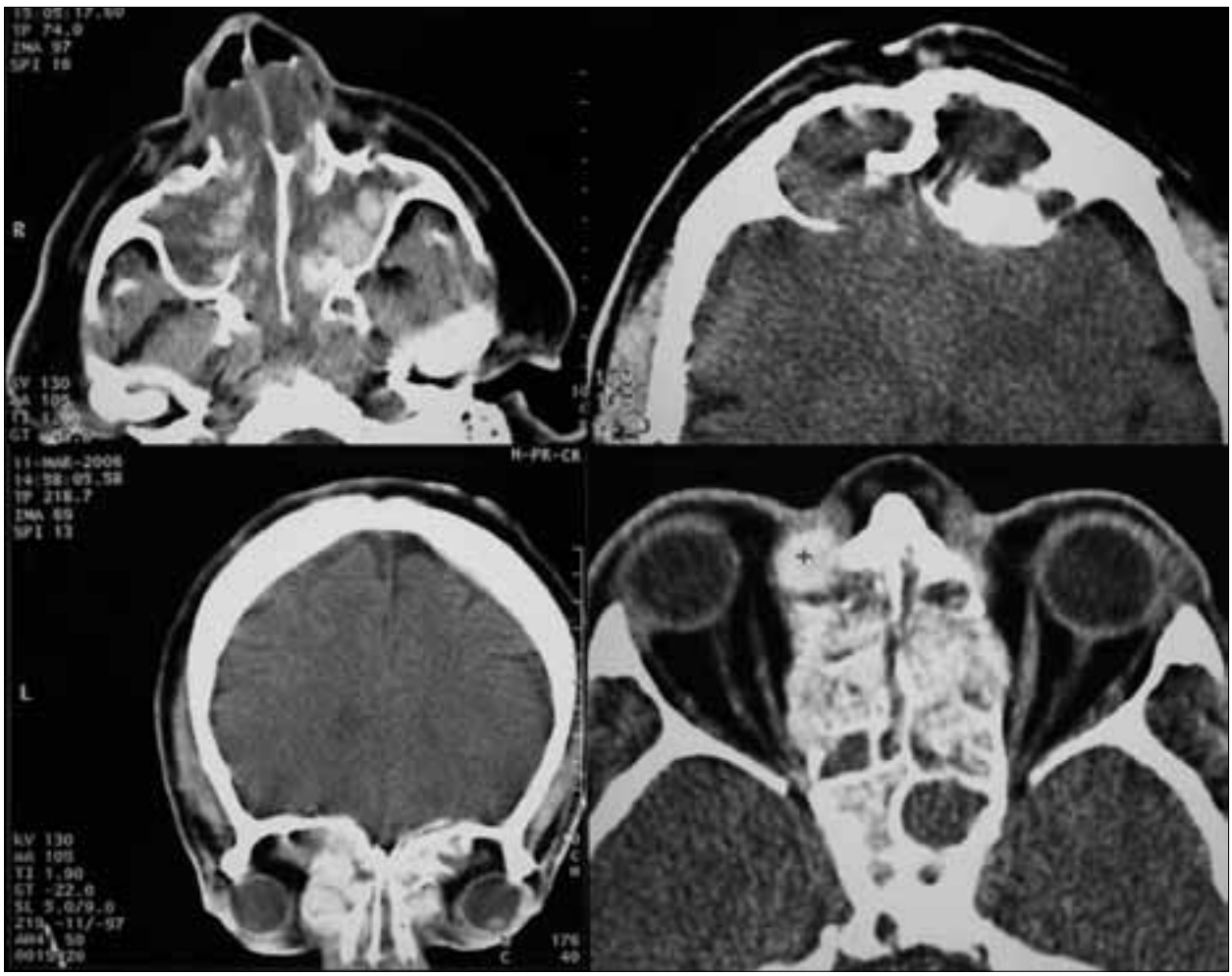

Figure 2. Computed tomography (CT) of the brain and paranasal sinuses showed a soft-tissue mass completely filling both nasal passages, maxillary and frontal sinuses, ethmoidal cells, sphenoid sinus, accompanied by destruction of bony walls

Figure 3. Polyp displays combinations of stromal edema and contains a mild infiltrate of eosinophils, plasma cells and lymphocytes (HE, 40x). The surface epithelium is of the respiratory type (lower part of the figure), with areas of squamous metaplasia (upper part of the figure).

drug ketoconazole (daily 200 mg) and topical nasal steroid mometasone furonate (Nasonex®) was used during two weeks and 6 months after surgery, respectively. Intensive saline solutions irrigations were applied.

Histopathology analysis of material obtained during surgery confirmed the findings of preoperative biopsy and specific Grocott staining for mycotic infection was applied.

The patent was under regular follow-up regularly and 7 years after surgery. There are no signs or symptoms of relapse.

DISCUSSION

Sinonasal polyposis is a chronic, inflammatory disease of mucosal membranes of the nose and paranasal sinuses. Apart from the patient's history, clinical and endoscopic examination, CT scans of paranasal sinuses are the golden diagnostic standard for accurate diagnosis. If there is suspicion regarding the development of intracranial complications, magnetic resonance imaging has higher sensitivity and specificity than CT scan.

Clinicians must always maintain a high level of suspicion in patients with nasal polyps, because allergic fungal sinusitis is commonly seen in these patients and it usually exhibits recurrent and intractable course of the disease. It was reported that in 20% of patients with allergic fungal sinusitis the propagation of pathologic process in the paranasal sinuses and erosion of bony structures was observed [13].

In polyposis with squamous metaplasia, the destruction of bony walls is rarely seen. If such destruction is present, a potential malignancy should be excluded. The necrosis of bone may appear due to the compression of polypoid tissue and can cause serious morbidity such as seen in our patient. Use of radiotherapy in such cases is proved to be inefficient and there is always the risk of neoplastic proliferation. The standard in treating patients with this condition is surgery [11].

With the development of functional endoscopic sinus surgery (FESS), the indications for classical surgical procedures are much narrowed. Endoscopic frontal sinusotomy is used even in cases of refractory chronic sinusitis with erosion of the posterior wall of the frontal sinus [14] and there are cases of endoscopic sphenoidectomy with removal of extensive allergic mucus and destruction of the clivus and parasellar region reported in the literature [13]. In diagnostically challenging cases with fungal coinfection even today, the conventional surgery of sinuses is justified [11].

Reported relapse in cases of sinonasal polyposis after endoscopic surgery is even more than 60% [15, 16, 17], and patients with this condition may be an important group of patients in whom conventional surgery provides a better control of the disease over a prolonged period of time [15, 18]. Postoperative administration of systemic or topical antifungal treatment in these patients is still controversial, but it has been shown that oral corticosteroid drugs are justified in preventing immunological response of the host on residual fungi and to minimize the need for further surgical interventions [19, 20].

Due to the elevation of total serum levels of IgE and histopathologic confirmation of fungal infection, we decided to perform the classical surgical intervention with reconstruction of eroded bony walls. We also avoided the need for revision of surgical interventions, which are very common in patients with this condition.

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Џиновска деструктивна синоназална полипоза

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КРАТАК САДРЖАЈ

Увод Аутори приказују своје клиничко искуство у лечењу 46-годишњег мушкарца са дуготрајним сметњама у дисању на нос услед великих туморских промена у обе носне шупљине.

Приказ болесника Физикални преглед, лабораторијске и биохемијске анализе и налаз компјутеризоване томографије параназалних синуса указали су на нехомогену, мекоткивну туморску масу, која потпуно испуњава обе носне шупљине, максиларне, етмоидалне, сфеноидалне и фронталне синусе с обе стране уз оштећење коштаних зидова свих синуса. Преоперациона хистопатолошка анализа указала је на полип са сквамозном метаплазијом. Џиновска полипоидна маса је уклоњена бикоронарним приступом фронталним и етмоидалним синусима и директним приступом максиларним синусима и носној шупљини. Коначна хистопатолошка анализа је потврдила почетну дијагнозу, уз присуство гљивичних хифа у алергијској слузи.

Закључак Полипоидни израштаји у носу ретко достижу овакве велике димензије које узрокују уништавање свих зидова параназалних синуса. Имајући у виду досад објављене радове у литератури, приказани случај синоназалне полипозе је међу највећим пријављеним до данас.

Кључне речи: џиновска синоназална полипоза; сквамозна метаплазија; хируршко лечење

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