fifteen-year old boy with clinical discomfort after falling down from a height. Pneumolabyrinth was diagnosed by CT scan of the temporal bone and it had remained unrecognized for almost two weeks. The patient was treated conservatively. As the hospital treatment started too late the final result of this injury was complete and permanent hearing-loss of the impaired ear.

Key words: pneumolabyrinth, temporal bone fracture, hearing loss, perilymphatic fistula

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ABSTRACT

The reports of sphenochoanal polyps in the literature are relatively rare. Computed tomography and nasal endoscopy contribute in diagnosis of sphenochoanal polyps. Simple polypectomy which partially leaves a polyp inside the sphenoid sinus increases the risk of a relapse. Using powered instrument-assisted endoscopic sinus surgery we surgically removed sphenochoanal polyp in a ten year old boy. We widely opened the orifice of sphenoid sinus and removed the cystic polyp part from sphenoid sinus. At the annual follow-up examination, this patient remains free of signs of polyp recurrence.

Key words: sphenochoanal polyposis, endoscopic surgery, computed tomography (CT scan)

INTRODUCTION

Choanal polyps are rare benign mucous tumors of the nose and the paranasal sinus which grow from the sinus orifice and spread through nasal meatus into choanae and nasopharynx. They make 3-6 % of all the polyps of the nose (1). Based on the origin of the polyp’s petiole, polyps are divided into the three types: antrochoanal (originating in the maxillary sinus), ethmoidochoanal (originating from the etmoid sinus) and sphenochoanal (originating from the sphenoid sinus) (2).

Polyps whose source is in the orifice or in sphenoid sinus are distinctly rare (2,3). They were first described by Zuckerkandl in 1892 (4,5). Clinically, the glistening and pale masses are identical to typical nasal polyps; careful inspection using endoscopy can disclose a stalk leading to the sinus of origin (6). It must be emphasized that the stalk of antrochoanal polyp can be easily visualized but it is very difficult to visualize sphenoid orifice in children even without polyps. In case of sphenochoanal polyp only stalk from sphenethmoid recess can be seen. In general, the diagnosis of choanal polyps is established by nasal endoscopic examination and CT (3,6).

In this paper we presented a case of endoscopic treatment of a ten year old male with the sphenochoanal polyp.

CASE REPORT

The patient was a 10-year old male, with symptoms of heavy respiration through his nose, with incessant frontal rhinorrhea, purulent mucous discharge with occasional snoring. He had been adenoidectomised three years earlier in another hospital due to heavy respiration through the nose. After the operation he showed no postoperative improvement. Using a front rhinoscopy, an abundance of mucous and purulent secretion was found in both nasal cavities. Physical examination by endoscope revealed an intranasal pearly
polyp creation in the right nasal cavity, situated in a lower nasal meatus and in left nasal cavity, obstructing the entire nasal cavity (Figure 1).

Computed tomography (CT scan) of nasal cavity and paranasal sinuses in axial and coronal projection confirmed a shading of both sphenoid sinuses, partly of frontal ethmoids left, and both nasal cavities alongside unobstructed maxillary sinuses.

With the powered instrument-assisted endoscopic approach under general endotracheal anesthesia, we identified a pearly polyp-creation centered between the middle nasal concha and a septum of the left nasal cavity with a petiole spanning from the left sphenoid sinus. We endoscopically removed the polyp petiole intersection which originates from the anterior wall of the left sphenoid sinus. Enlarging the orifice of the sphenoid sinus we removed a cystic part of intrasinusal polyp along with mucous membrane (Figure 2).

Free orifices of the maxillary sinuses are mutually displayed. Pathologic analysis of the creation confirms a diagnosis of chronic polypus inflammation. The patient experienced successful operative and post-operative process without any complications. One year after this procedure was completed, the left sphenoid sinus orifice is wide opened and both nasal cavities and the sinus remain free of recurrence.

A polyp which grows from the singular sinus and spreads out through choanes into nasopharynx is called the choanal polyp. Sphenochoanal polyps are the polyps whose roots arrive from sphenoid sinuses. Compared with common nasal polyposis and antrochoanal polyps, sphenochoanal polyps are relatively rare, with only 35 cases reported in the English literature to date (7). Histologically, majority of all the polyps look similar and include a cystic center that is usually caused by gland hyperplasia which is surrounded by edematous parenchyma with infiltration of inflammatory cells whereas the polyp surface is covered with respiratory epithelium. This histological appearance is not always present in case of sphenochoanal polyps (8). There are numerous theories explaining polyp development. Two of them are mostly described by Berg and Mills (8,9). Sphenochoanal polyp occurs evenly in male and female population from childhood till the fourth decade of life (10). The polypoide mass in our case contains few mucous glands and has a myxoid stroma, with variable densities of inflammatory cells concentrated near the surface which can confirm the polyp development as a result of mucocela expansion caused by blockade and burst of acino-mucus glands in bacterial rhinitis phase during the period of recovery from a chronic infection according to Mills (9).

Clinically, choanal polyps produce symptoms of nasal obstruction, rhinorrhea, pain in the facial area, partial deafness caused by dysfunction of Eustachian tube, otalgia, snoring and a presence of a creation in nasal and oral cavity (11). Sphenochoanal polyps as the one from our case are clinically present as unilateral, solitary, bluish or yellowish mass involving the nasal fossa between the middle nasal concha and septum and the choana can differ from antrochoanal polyp which takes up osteomeatus complex between the middle nasal concha and the lateral wall of the nasal cavity. Both polyp types can obstruct nasal cavities

Figure 1. Endoscopic picture of a sphenochoanal polyp centered between a middle nasal concha and septum (I. Pajić Penavić, 2007.)

Figure 2. Endoscopic view of wide opened orifice of a sphenoid sinus (I. Pajić-Penavić, 2007.)
and may spread through the choanae into the nasal pharynx, then spread down into the oral cavity. Frontal rhinoscopy, flexible and rigid nasal endoscopies are obligatory for the diagnosis of sphenochoanal polyposis. They are recommended for the description of a location of the polyp petiole.

To distinguish an antrochoanal polyp from sphenochoanal polyps computed tomography or magnetic resonance of the paranasal sinuses can be used (12).

Sphenochoanal polyp can be seen on CT scan as an opacification of the sphenoid sinus and mass in common meatus extending to the nasopharynx without evidence of pathology in maxillary sinuses. When choanes are filled with necrotic sphenochoanal polyposis CT with contrast or angiography towards suspect angiofibroma is recommended (13). Surgical treatment of sphenochoanal polyp involves endoscopic removal of choanal portion of the polyp and widening ostium of sphenoid sinus with no need of middle meatal antrostomy as it is suggested in treatment of antrochoanal polyp (6,13).

A comprehensive discussion of the differential diagnosis should include the possibility of an antrochoanal polyp, hypertrophic adenoid, Tornwald’s cyst, pituitary tumor, lymphoma, meningoecephalocoele, angiofibroma, inverted papilloma and fungal rhinosinusitis (13,14). Treatment of sphenochoanal polyposis involves complete surgical removal. Choanal polyposis recidivate in 25% cases if removed by simple intranasal removal of polyp by forceps. Endoscopic approach with a review of petiole and wide microdebrider or forceps removal of the polyp in nasal cavity and in the sinus is a surgical technique of choice (15).

In conclusion, sphenochoanal polyp is an extremely rare type of choanal polyp and it can be easily confused with antrochoanal polyp. An adequate preoperative preparation with CT scan and endoscopy is crucial to establish an exact diagnosis and for planning of an adequate surgical technique to reduce the percentage of possible polyp recidivism.

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REFERENCES