Introduction

The focal processes of the lamina propria of the nasal and paranasal sinus mucosa are known as polyps or polyposis. Inflammatory or allergic sinonasal polyps are the most common sinonasal lesions examined pathologically. Most of these lesions appear grossly as gelatinous, semitranslucent masses with, microscopically, expanded and markedly oedematous lamina propria with variable infiltrates of inflammatory cells. The aetiology of nasal polyps is still unknown and there is no agreement about the mechanism of polyp development. Nearly all of their microscopic features may be related to underlying vascular injury and subsequent stromal oedema.

Angiomatous nasal polyps are rare subtypes of inflammatory sinonasal polyps. They are characterised by extensive vascular proliferation and ectasia. In this, they differ from non-angiomatous polyps, which generally have a lower density of blood vessels compared to normal nasal mucosa. We report on a very rare case of an angiomatous nasal polyp originating from the right maxillary sinus.

Case report

A 27-year-old female patient presented with a three-month history of unilateral right-sided nasal obstruction and recurrent mild epistaxis. Anterior rhinoscopic examination was normal. Endoscopic examination identified a reddish-grey polypoid mass obliterating the right middle meatus and extending posteriorly to the choana. Endoscopic examination of the left nasal cavity was normal. Paranasal computed tomography revealed a soft tissue mass completely filling the right maxillary sinus and extending through the nasal cavity (Figure 1).

An endoscopic punch biopsy was performed and the pathological examination showed an oedematous fibrous stroma surrounded by respiratory epithelium. The treatment plan was to start with an endoscopic approach and, if necessary, proceed with a Caldwell-Luc procedure if the removal of the polyp from the maxillary sinus proved unsatisfactory. Under general anaesthesia, the uncinate process was removed and the maxillary sinus ostium was widened in an endonasal endoscopic procedure. The major part of the polypoid lesion was removed from the nasal cavity endoscopically, the maxillary antrum was explored using a Caldwell-Luc approach, and the remnant of the lesion was resected. The gross appearance of the polypoid mass demonstrated reddish-grey, soft and translucent areas. The pathological examination of the surgical material revealed large, dilated, but thin-walled capillary-like blood vessels in addition to the findings from the initial examination (Figure 2). The postoperative course of the patient was uneventful and 13 months of follow-up showed no recurrence.

Discussion

Angiomatous nasal polyps are an uncommon subtype of sinonasal polyps, which are characterised by large numbers of dilated capillary spaces, with scanty inflammatory

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Abstract. An angiomatous nasal polyp: a very rare variant of sinochoanal nasal polyps. Angiomatous polyps are the extremely rare variant of sinochoanal polyps that are characterised by dilated, large vascular spaces. A 27-year-old female patient presented with a three-month history of unilateral right-sided nasal obstruction and recurrent mild epistaxis. Paranasal computed tomography demonstrated a mass in the right maxillary sinus extending through the nasal cavity. It was resected with both endonasal endoscopic and Caldwell-Luc approaches. Histopathological examination identified an angiomatous nasal polyp. Follow-up of thirteen months showed no recurrence.
infiltrates and abundant extracellular fibrin.\textsuperscript{5,6} By contrast, the blood flow to sinonasal polyps is less than to normal nasal mucosa.\textsuperscript{4}

The unilateral location and similar clinical and radiological findings of sinochoanal polyps may lead to confusion with angiomatous polyps. Sinochoanal polyps, a subtype of sinonasal polyps, pass through an accessory maxillary sinus ostium into the nasal cavity, and extend further into the choanal area.\textsuperscript{6} The most common sinochoanal polyp is the antrochoanal polyp.\textsuperscript{7,8} Antrochoanal polyps arise in the lumen of the maxillary sinus and they herniate through an accessory ostium into the nasal cavity and extend further into the choanal area.\textsuperscript{9} Antrochoanal polyps are believed to develop as a complication of chronic inflammatory antral disease, particularly chronic sinusitis. It has also been suggested that chronic obstruction and secondary enlargement of the mucus glands during the recovery phase of sinusitis play a role in the development of antrochoanal polyps.\textsuperscript{10} They usually appear in children and young adults.\textsuperscript{9} There are two theories related to the development of angiomatous polyps. Batsakis \textit{et al.}\textsuperscript{6} suggests that angiomatous polyps most often develop secondary to change in a choanal polyp and describes four specific sites that are susceptible to vascular compromise: the ostium exit site, the posterior end of the inferior turbinate, the choana and the nasopharynx. It is hypothesised that the initial vascular dilatation, stasis, oedema and infarction occur in these sites following compression of blood vessels. Reactive and repetitive changes ensue with neovascularisation and fibrosis.\textsuperscript{2,6} The haemodynamic conditions in angiomatous polyps predispose to the extensive extravasation of blood components through the enlarged but thin-walled blood vessels.\textsuperscript{2} According to Som \textit{et al.}\textsuperscript{11} the angiomatous polyp is a fibrosed and vascularised nasal or nasopharyngeal mass and presumably occurs following a minor trauma. Unilateral nasal obstruction is the most common presenting symptom of an antrochoanal polyp.\textsuperscript{6,12} The other major symptoms include rhinorrhea, epistaxis, postnasal drip, and snoring.\textsuperscript{13} The presenting symptoms of angiomatous nasal polyps are nasal obstruction, snoring, epistaxis and facial swelling.\textsuperscript{5,6}

Blood flow in sinonasal polyps is decreased and there are fewer blood vessels compared with normal nasal mucosa.\textsuperscript{4} The angiomatous polyps, by contrast, are characterised by large numbers of dilated capillary spaces, scanty inflammatory infiltrates, and abundant amorphous, amyloid-like material. Large pleomorphic spindle cells in the stroma are part of the reactive secondary changes seen only occasionally in sinonasal polyps overall but which are particularly prominent in angiomatous polyps.\textsuperscript{2} As with vascular proliferation, pseudosarcomatous changes appear to be also more common in choanal polyps.\textsuperscript{10}

Clinically, radiologically and also pathologically, angiomatous polyps may be confused with vascular neoplasms, including
juvenile angiofibroma. The early identification of the cases simulating juvenile angiofibroma is important for preoperative and perioperative management. In such cases, angiography can distinguish between angiofibroma and angiomatous polyp.11 The hypovascular or avascular appearance of angiomatous polyps in angiography, although paradoxical, is explained by the fact that angiomatous polyps do not have a normal arborising vascularity pattern but rather irregular racemose arrangements of dilated capillary-type vessels and newly endothelialised spaces that often show superimposed thrombosis.2 The treatment of both lesions is surgical. However, while the removal of a sinochoanal polyp is a relatively simple surgical procedure, the resection of an angiofibroma requires preoperative embolisation and cross-matching of blood due to the likelihood of severe perioperative haemorrhage.12

Paranasal computed tomography is an ideal method for the demonstration of choanal polyps.14 The paranasal computed tomography findings in the present case revealed a soft tissue mass completely filling the maxillary sinus and extending through the nasal cavity. There was no finding indicating bony destruction, and this supported the benign nature of the lesion. Bony destruction with benign sinonasal polyps has been reported rarely.15,16

Sinochoanal polyps are treated surgically. Endoscopic excision of sinochoanal polyps has emerged as a safe and effective procedure in recent years. However, in cases where there is a suspicion of incomplete removal, the Caldwell-Luc procedure is required to prevent recurrence.17,18 In the present case, the antrol portion of the polyp was excised in a Caldwell-Luc approach in order to prevent recurrence and the choanal portion was excised in an endonasal endoscopic approach.

Conclusion

Angiomatous nasal polyps are rarely described in the literature. Despite the benign nature of these lesions, they may be confused with neoplastic processes. This paper presented a case of angiomatous polyp, reviewing the literature with a particular emphasis on pathophysiological and pathological features.

References


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