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Clinical Record

Maxillary haemangioma successfully resected by endoscopic approach

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Abstract

Objective: We report an extremely rare case of maxillary haemangioma.

Method: Case report and review of the literature concerning haemangioma arising from the nasal cavity and paranasal sinuses.

Results: Maxillary haemangioma is rare and sometimes requires wider resection than nasal haemangioma if a large tumour is found. We present a case of maxillary haemangioma in a 37-year-old Japanese woman, which was completely resected by pre-operative embolisation and endoscopic sinus surgery.

Conclusion: Our findings suggest that if a large maxillary haemangioma is diagnosed pre-operatively, the treatment of choice is pre-operative embolisation followed by endoscopic sinus surgery, in order to avoid the surgical complications associated with wide resection.

Key words: Endoscopy; Vascular Tissue Neoplasm; Maxillary Sinus

Introduction

Haemangioma is one of the most common soft tissue tumours. In the head and neck region, the gingival, lip, tongue and buccal mucosa are the most common sites of mucosal haemangioma,[1] whereas this tumour is unusual in the nasal cavity and rare in the paranasal sinuses.[2] Most nasal haemangiomas have as their primary site of origin the mucosa covering the anterior end of the nasal septum.[3] Thus, nasal haemangiomas of limited size can be easily diagnosed. On the other hand, maxillary haemangioma can only be detected when it has formed a large mass, because of its location. Therefore, some cases of maxillary haemangioma require wide resection, employing such procedures as the Caldwell–Luc operation or lateral rhinotomy, in order to remove the tumour completely.[4–7] On the other hand, the use of endoscopic sinus surgery for this tumour has some advantages, including precise determination of tumour extent, preservation of normal mucosa and bony structures, and avoidance of external scars.[8]

We report here a case of maxillary haemangioma which was able to be successfully resected by endoscopic sinus surgery, because pre-operative embolisation markedly reduced the tumour size and risk of haemorrhage.

Case report

A 37-year-old Japanese woman, referred from elsewhere, had presented with a five-month history of recurrent epistaxis, bloody nasal discharge, right-sided nasal obstruction and cheek pain.

Neurological and ophthalmological examinations revealed no abnormalities. The results of routine laboratory analyses were normal.

On anterior rhinoscopic examination, a mass of necrotic appearance was found to fill the entire left nasal fossa.

A computed tomography (CT) scan revealed a mass in the left maxillary sinus which extended into the left nasal cavity and appeared to be destroying its medial wall. Further evaluation using magnetic resonance imaging (MRI) showed a gadolinium-enhancing mass of heterogeneous density arising from the left maxillary sinus and extending to the nasal cavity through the ostiomeatal complex, which also showed a hyperintense signal on T2-weighted images (Figure 1).

A tumour biopsy ruled out the risk of massive haemorrhage. The results of histopathological analysis were consistent with haemangioma, and surgical resection was planned.

In order to avoid serious haemorrhage, pre-operative arteriography and embolisation of the sphenopalatine artery, the feeder vessel for the tumour, were performed. Following pre-operative embolisation, the tumour's size markedly decreased, and it was found to arise from the posterior wall of the maxillary sinus (Figure 2). The tumour was excised completely under general anaesthesia by endoscopic sinus surgery without any evidence of bleeding.

On gross inspection, the removed tumour comprised a greyish-white mass. Histopathological features, as determined in paraffin sections, showed no evidence of malignancy and were considered to be consistent with a lobular capillary haemangioma (Figure 3).

On follow up after five months, the patient was asymptomatic without any sign of recurrence.

Discussion

Although haemangiomas are common lesions of the head and neck, they are unusual in the nasal cavity and paranasal

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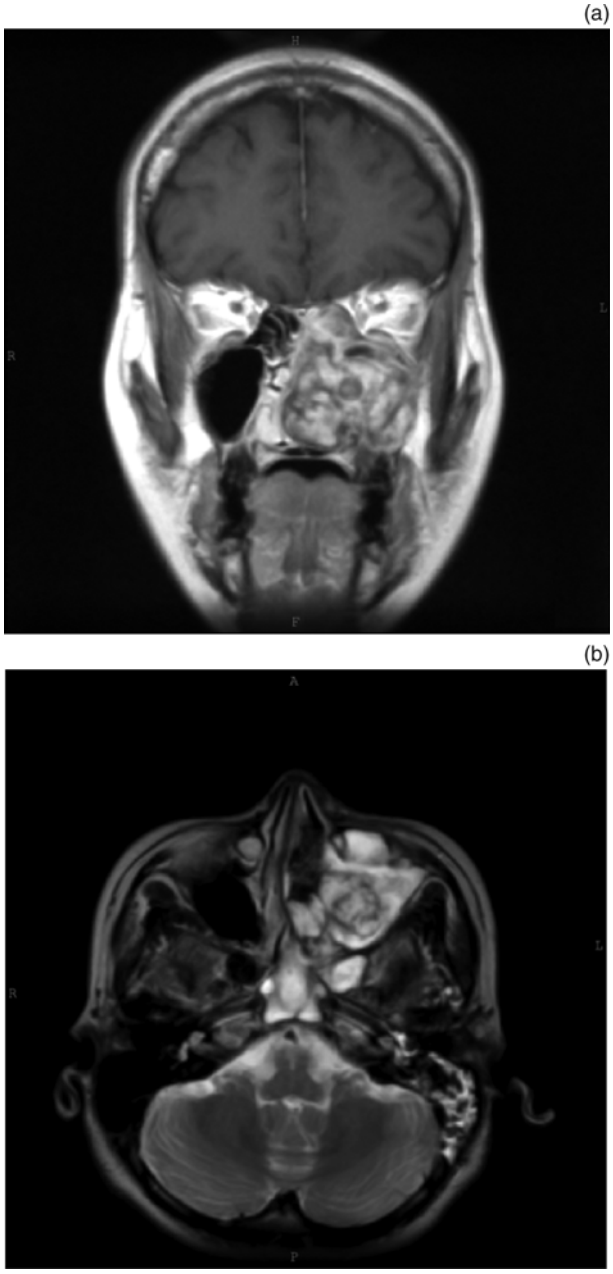

FIG. 1

(a) Coronal and (b) axial magnetic resonance imaging scans, showing a gadolinium-enhancing mass of heterogeneous density arising from the left maxillary sinus and extending to the nasal cavity through the ostiomeatal complex (a); the mass also shows a hyperintense signal on T2-weighted images (b).

sinuses, and maxillary haemangiomas are rare. Fu and Perzin described 31 nasal haemangiomas, among 85 cases of vascular tumours but no maxillary haemangiomas.[2] Although there are many clinical studies on nasal haemangioma,[9–11] there are only a few case reports on maxillary haemangioma.[4–7]

Sinonasal haemangiomas are associated most commonly with recurrent epistaxis, nasal obstruction and cheek swelling, but these symptoms are not specific.[9] Computed tomography usually reveals a highly vascularised tumour, and MRI shows a hyperintense signal on T2-weighted images; however, neither of these findings is pathognomonic.[11] Both CT and MRI are useful for delineating lesions in relation to soft tissue extension and surrounding vital structures, but pathological examination is required for the definitive diagnosis.

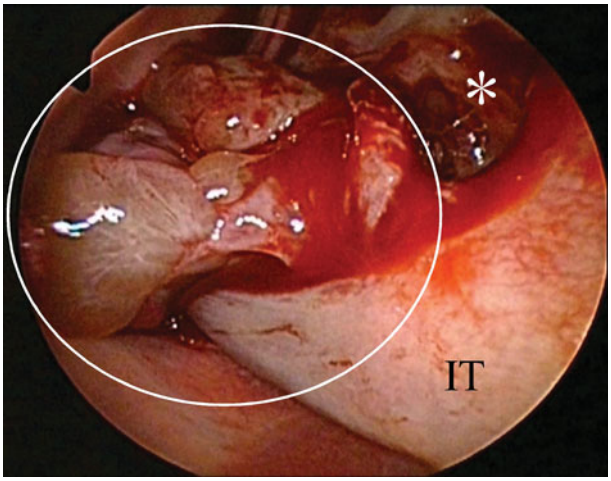

FIG. 2

Following pre-operative embolisation, the tumour size markedly decreased (white oval), and it was found to arise from the posterior wall of the maxillary sinus. * = destroyed ostiomeatal complex; IT = inferior turbinate

Thus, surgical resection is a significant diagnostic tool and also comprises the main treatment for haemangioma. The surgical management of haemangiomas reported in the literature varies from complete excision to partial resection in order to save vital structures.[7] The extent of surgical excision should be weighed against the resultant morbidity. In general, maxillary haemangiomas are larger than nasal haemangiomas. Thus, maxillary tumours require wide excision, employing such procedures as lateral rhinotomy and the Caldwell–Luc operation.[4–7]

However, the use of endoscopic sinus surgery has several advantages, such as precise determination of tumour extent, preservation of normal mucosa and bony structures, and

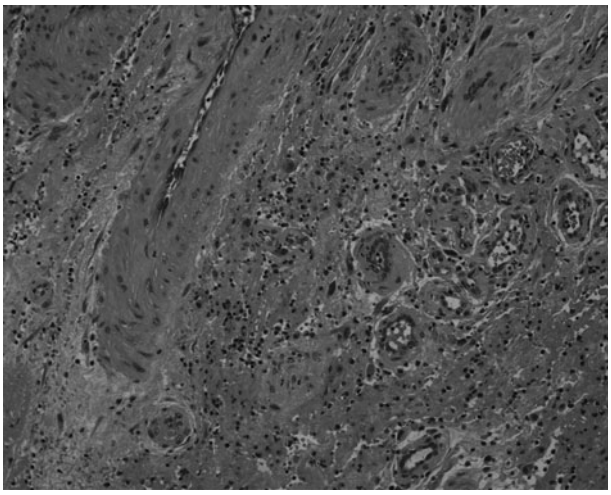

FIG. 3

Photomicrograph of the tumour, showing its composition of small to medium-sized vessels of capillary or venous type, although secondary change (e.g. fibrin exudates and inflammatory infiltrate) is notable. Some of these vessels proliferate in the form of vague lobules, an appearance characteristic of lobular capillary haemangioma.

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avoidance of external scars. In the treatment of chronic sinusitis, endoscopic sinus surgery has largely replaced the Caldwell–Luc operation because it has been proven safe and effective.[12] Many benign tumours such as papilloma, adenoma and osteoma can also be removed by endoscopic sinus surgery.[13] However, tumour size limitation and haemorrhage prevent the application of endoscopic sinus surgery for some maxillary haemangiomas.

Some reports have suggested that embolisation of the feeder artery should be performed before the operation.[6,7] The significant advantage of pre-operative embolisation for haemangioma is that it can decrease the tumour size and decrease the risk of haemorrhage during operation – this cannot be accomplished in the case of other tumour types.

Our patient's haemangioma was completely removed by endoscopic sinus surgery, with minimal risk of haemorrhage. In the case of a large haemangioma diagnosed pre-operatively, we consider the treatment of choice to be pre-operative embolisation of the mass followed by endoscopic sinus surgery.

- **Maxillary haemangioma is rare, and large tumours sometimes require wider resection than would be needed for nasal haemangioma**
- **The reported case suggests that, in the case of a large maxillary haemangioma diagnosed pre-operatively, the treatment of choice is pre-operative embolisation followed by endoscopic sinus surgery**

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