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Case Report

The midfacial glomangiopericytoma – Case report

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ARTICLE INFO

Article history:

Received 15 December 2014

Accepted 7 February 2015

Available online 5 March 2015

Keywords:

Glomangiopericytoma

Nasal cavity tumor

Nasal obstruction

Epistaxis

ABSTRACT

Glomangiopericytoma is classified as a borderline low malignancy tumor but recurrence rate is reported to be about 16.8%–30%, probably caused by the lack of radical resection.¹ It is a rare tumor arising from pericytes surrounding capillaries. The tumor has a predilection for the nasal cavity and paranasal sinuses.

We report a case of glomangiopericytoma with an aim to present how it can invade and destroy both maxillary bones and lower part of nasal cavity. Due to its dimensions the tumor required extensive resection within tumor-free margins. On the basis of immunohistochemical staining the tumor was diagnosed as glomangiopericytoma.

Strict follow-up of 16 months after radical resection revealed no recurrence of the tumor.

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1. Introduction

Glomangiopericytoma is an uncommon sinonasal neoplasm with perivascular myoid phenotype. The proposed cell of origin is a modified perivascular myoid cell. The tumor arises from the pericytes surrounding capillaries.¹ Histologically the lesion is composed of a diffuse, subepithelial proliferation of uniform, closely packed spindle cells growing in a variety of patterns. Vascular network is composed of variably sized vascular channels ranging from capillary to large-sized.

Perivascular hyalinization is often present in the small to medium ones.

Trauma, hypertension and steroid usage are thought to be potential causes of glomangiopericytoma formation.¹ It has a marked predilection for the nasal cavity and paranasal sinuses although it's been reported about benign atrial glomangiopericytoma.² The location such as thigh, retroperitoneum, pterygomandibular space are also known.³ That's why it is an equivalent term for sinonasal-type hemangiopericytoma.⁴ The term hemangiopericytoma only previously used for such type of tumors has been abandoned as they have better prognosis despite their similarity to the conventional tumors.³

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<http://dx.doi.org/10.1016/j.jobcr.2015.02.003>

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Fig. 1 – Axial CT scan showing glomangiopericytoma occupying middle part of facial skeleton.

Glomangiopericytoma tumors also differ from conventional soft tissue hemangiopericytomas in location, biologic behavior and histologic features – they express more myogenic differentiation.

Glomangiopericytoma is a rare tumor that accounts for less than 0.5% of all sino-nasal tumors.¹ There is a slight female preponderance and the tumor's peak incidence occurs during the seventh decade of life. Most affected patients suffer from nasal obstruction and epistaxis along with a wide range of other nonspecific symptoms such as difficulty in breathing, sinusitis, headache. The glomangiopericytoma tumors are used to grow as grayish polypoid masses.⁵

The differential diagnosis of glomangiopericytoma comprises glomangioma, myopericytoma and angioleiomyoma.^{6,7}

Fig. 2 – Tumor located subepithelially (haematoxylin–eosin, original magnification $\times 120$).

Fig. 3 – Tumor showing vascular pattern with spindle cells composed in short fascicles (haematoxylin–eosin, original magnification $\times 500$).

It has a low malignant potential with excellent prognosis after surgical resection although mild nuclear pleomorphism and mitotic figures are occasionally seen.⁴ The survival rate achieved after surgical resection exceeds 95%.⁵ The gold standard for treatment is resection within tumor-free margins. Endoscopic excision of tumors of the sinonasal tract has been recommended.¹

2. Case report

A 80-years old man presented with 2 years history of slowly growing firm tumor raising left ala of the nose, causing constant nasal obstruction. The patient's medical history was of no significance. The etiology remains unclear as the patient denied any history of trauma, hypertension or steroid usage. The examinations such as: thorax X-ray and ultrasonography of abdominal cavity revealed no lesions.

Intraoral examination disclosed a tumor located in about the midline with small preponderance to the left site occupying hard palate and anterior part of the maxillary alveolar bone process bilaterally. The tumor was painless on examination and the patient claimed that there was no epistaxis until the biopsy was performed.

CT scans showed a lesion of about 5 cm in diameter that was invading and destroying maxillary bones, deforming both maxillary sinuses, invading a lower part of the nasal cavity, infiltrating both lower nasal conchas (Fig. 1).

The surgical approach was planned on the basis of CT scans. Surgical incision lines ran bilaterally around the ala of the nose and in the midline through the whole thickness of the upper lip. Intraorally they were led in the upper fold of vestibule. Such kind of incisions allowed for the optimal access to the tumor mass.

There was no communication with maxillary sinuses on operation. The tumor that had a pseudocapsule was easily detachable from surrounding tissues and was totally removed. It measured about 5 cm in diameter and clinically

Fig. 4 – Immunoreactivity of neoplastic cells for CD 34 antigen (Avidin Biotin Complex Method, original magnification $\times 320$).

was solid, polypoid, reddish to yellow, reddish to gray in colour.

Histological examination revealed that the tumor was covered with normal respiratory epithelium (Fig. 2). Closely packed cells were seen that appeared in short fascicles with rich vascularization (Fig. 3).

Immunohistochemically endothelial cells of the tumor's vessels were positive to CD 34 (Fig. 4), the muscle cells of the tumor vessels were positive to actin. The tumor cells were positive to vimentin, S-100 and negative to LCA, CD3, CD20, CD68. Immunostain for Ki-67 marker showed 2% nuclear positivity (Fig. 5). On the basis of histological findings the tumor was diagnosed as glomangiopericytoma.

The strict follow-up of 16 months revealed no recurrence of the tumor. The only complication that occurred were two oronasal fistulas located in the anterior part of the palate and vestibulum of the mouth. Patient was reluctant to undergo

Fig. 5 – Immunoreactivity of neoplastic cells for Ki-67 antigen (Avidin Biotin Complex Method, original magnification $\times 500$).

surgical closure of the fistulas due to his general condition and was satisfied wearing upper denture with an obturator.

Our patient underwent successful radical excision with no recurrence in a follow-up of 16 months.

3. Conclusion

The etiology of the tumor remains unclear as there was no history of trauma, hypertension and steroid usage which are believed to be the factors associated with the etiology of Glomangiopericytoma. The gold standard for treatment is resection within tumor-free margins. Tumor was radically resected by an extensive access due to tumor dimensions distantly exceeding the average size of about 3 cm. No recurrence in a follow-up of 16 months was observed.

Hence we conclude that a successful radical resection of Glomangiopericytoma reduces the chances of recurrence of the tumor.

Conflicts of interest

The authors decline any conflict of interest that might bias their work.

Acknowledgments

Special thanks to Prof. Stanisław Sporny (Department of Oral Pathology, Medical University, Łódź, Poland) for providing histological analysis.

REFERENCES

- Higashi K, Nakaya K, Watanabe M, Ikeda R. Glomangiopericytoma of the nasal cavity. *Auris Nasus Larynx*. 2011;38:415–417.
- Grobety M, Katchatourov G, Perret F, Schafer S. Benign left atrial glomangiopericytoma. *Kardiovaskulare Med*. 2008;11:288–289.
- Taglialatela Scafati C, D'Antonio A, Scafati S Taglialatela, di Clemente S Scotto. Glomangiopericytoma of the pterygomandibular space: an unusual case. *J Oral Maxillofac Surg*. 2007;45:673–675.
- Patnayak R, Jena A, Kumaraswamy Reddy M. Epithelioid hemangioendothelioma of nasal cavity. *J Lab Physicians*. 2010;2:111–113.
- Thompson LD, Miettinen M, Wenig BM. Sinonasal-type hemangiopericytoma: a clinicopathologic and immunophenotypic analysis of 104 cases showing perivascular myoid differentiation. *Am J Surg Pathol*. 2003;27:737–749.
- Lee BL, Lee KJ, Park HJ, Cho BK. Cutaneous glomangiopericytoma on the tip of the nose. *Acta Derm Venereol*. 2010;91:375–376.
- Jung Y-I, Chung Y-K, Chung S. Multiple myopericytoma of the face and parotid gland. *APS*. 2012;39:158–161.