Granulation Tissue-type Hemangioma in the Internal Jugular Vein

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Granulation tissue-type hemangiomas are rare benign vascular lesions that mainly affect the head, neck, and hands. In 75% of the cases, the lesion shows a striking predilection for the mucosa, while skin is the second common site for the lesions. Granulation tissue-type hemangiomas occur upon various stimuli such as chronic low-grade irritation, traumatic injury, and hormonal factors. The lesions occur predominantly in young females, possibly triggered by a vascular effect due to hormonal changes. They range in size from a few millimeters to several centimeters and can grow rapidly with frequently bleeding. The purpose of this article is to present a case of granulation tissue-type hemangioma and to briefly review the current literature for this condition.

A 55-year-old woman was admitted to our hospital due to the presence of a nodule in the left side of her neck for three months. The patient had no signs of fever, vomiting, weight loss, or any other subjective symptoms. In addition, the patient's medical history was unremarkable and all results of laboratory tests were normal. Furthermore, the physical examination of the patient revealed no abnormalities apart from the nodule, which was a filling defect in the left internal jugular vein under the contrast computed tomographic scan, while computed tomography angiography of the neck vascular system showed benign lesions within the left jugular vein [Figure 1a-1c].

The patient underwent surgical operation to remove a venous segment containing the neoplasm. The blood vessel in the lower part of the tumor was clipped [Figure 1d] and severed [Figure 1e], whereas the blood vessel in the upper part of the tumor was ligated [Figure 1f]. The reddish lesion was pedunculated with a firm and consistent texture and was measured approximately 4 cm × 1.5 cm × 1.5 cm [Figure 1g]. During the palpation examination, the tumor had a rough and hard surface [Figure 1h]. In addition, the lesion was confined to the vascular lumen and consisted of a complex network of vascular channels.

On the left side of the internal jugular vein, there was evidence of hyperplasia, vascular expansion, and significant proliferation of the vascular endothelium. In addition, a large number of lymphocytes, plasma cells, and neutrophils were present along with a lymphoid follicle in the process of formation [Figures 1i-1k]. Immunohistochemical staining results showed CD31(+), CD34(+), CD68 (tissue cells +), Ki-67 (germinal center + >90% and the germinal center <5%), F8(+) oven, and CK(−). The histopathological profile of this tumor in conjunction with its immunophenotypic features suggested that it was a granulation tissue-type hemangioma of the vein.

The patient recovered uneventfully and the surgical site appeared to be healing well at the 6-month follow-up. There was no evidence of lesion recurrence of the lesion, and the patient was asymptomatic. This case differed from previously reported cases in terms of its location and the extent of its lesions. Subsequently, a literature search was conducted to retrieve several reports of granulation tissue-type hemangiomas in the skin and mucosa, although none of these lesions affected blood vessels. Therefore,

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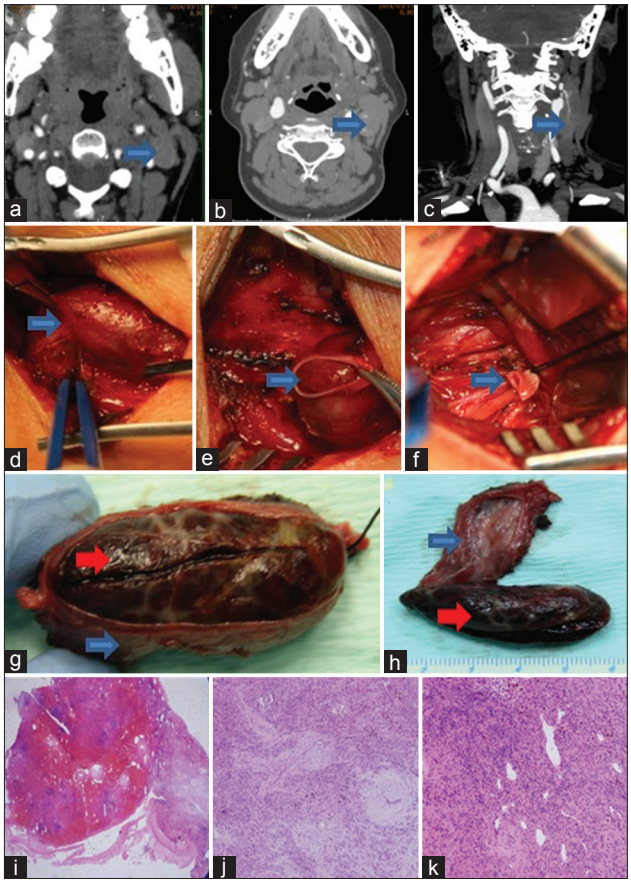

Figure 1: Representative images of the patient. (a) CT of the oropharyngeal level of the tumor (arrow is the lesion). (b) CT of the epiglottis valley level of the tumor (arrow is the lesion). (c) Neck CTA of the benign tumor lesions in the left jugular vein which is likely to be hemangiomas (arrow is the lesion). (d) Intraoperative images showing clipping of the blood vessel in the lower part of the tumor (arrow is the tumor). (e) Severing the blood vessel in the lower part of the tumor (arrow is the tumor). (f) Ligating the blood vessel in the upper part of the tumor (arrow is the vessel). (g) A red neoplasm in the left internal jugular vein, with an intact overlying envelope, the red arrow points to the tumor, and the blue arrow points to the envelope. (h) With the blood vessel retracted, the tumor was nontender with a rough and hard surface under palpation. The red arrow points to the tumor and the blue arrow points to the envelope. (i) Many hemorrhages in the great vessel were seen at low magnification (hematoxylin-eosin staining [H&E], ×40). (j) Many thick-walled blood vessels and many inflammatory cells around the blood vessels were seen at medium magnification (H&E, ×200). (k) Many thin-walled blood vessels and many inflammatory cells and hemosiderin around the blood vessels were seen at high magnification (H&E, ×200). CT: Computed tomography; CTA: Computed tomography angiography.

this case is presented here to demonstrate that granulation tissue-type hemangiomas can also occur in blood vessels.

Instead of a true hemangioma, the lesion has been considered as a reactive and hyperproliferative vascular response to a variety of stimuli rather than a true hemangioma.[1] One important factor in the pathogenesis of granulation tissue-type hemangiomas may be the excessive production of local tumor angiogenesis factors as a result of minor trauma or underlying cutaneous disease.[2]

Although radiographic and histopathological findings might aid diagnosis and treatment planning of granulation tissue-type hemangiomas, all clinically suspected lesions must be biopsied to rule out the possibility of more serious diseases, since the presence of certain histological features can help to differentiate granulation tissue-type hemangiomas from other lesions.

If the lesion is small, painless, and free of bleeding, clinical observation and follow-up are advised.[3] The treatment of granulation tissue-type hemangiomas includes conservative surgical excision (excisional biopsy), laser surgery (Nd:YAG, flash-lamp pulsed-dye laser), and electrodessication.[4] Injections of absolute ethanol, sodium tetradecyl sulfate (sclerotherapy), and corticosteroids have also yielded successful results in cases of recurrent lesions.[5]

In this study, overall, this distinct subtype of hemangioma is probably not as unusual as was initially believed. In addition, its prognosis is excellent and the lesion does not relapse.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s)/patient's guardians has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the article. The patients/patient's guardians understand that their names and initials will not be published and due efforts will be made to conceal the identity of the patient, although anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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