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Case Report

Hemangioma in The Supraclavicular Area in The Neck: A case report

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Abstract

Arteriovenous malformations are congenital anomalies resulting from defects in the embryological development of the vascular system. Diagnosis and treatment of these malformations remain difficult due to their low prevalence and variable clinical symptoms of the disease. In this case report, a 10-year-old patient is discussed to contribute to the literature on the localization and treatment of arteriovenous malformations in children.

Keywords: Hemangioma, supraclavicular, neck, anteriovenous malformations

INTRODUCTION

Arteriovenous malformations (AVMs) are rare, congenital, fast-flow malformations characterized by the presence of arteriovenous shunting (without intervening capillaries). These lesions may develop congenitally.

It is asymptomatic at first, but can later grow and lead to serious complications such as bleeding, skin ulceration, skin deformity, neck mass, and heart failure (1-3).

Extracranial malformations are most commonly seen in the head and neck region. Early diagnosis and timely and sufficient intervention help treat patients effectively. In this case report, we present a patient diagnosed with AVM who presented with a mass in the right supraclavicular area to contribute to the literature.

CASE

A 10-year-old male patient was referred to us from an external center due to swelling on the right side of the neck. His family first noticed this swelling 8 years ago. The lesion was very small, but it has tended to grow rapidly in the last year. He did not receive any medical treatment for this lesion. He had no comorbidities.

During the physical examination, a 4*4cm mobile lesion in the right supraclavicular area, oropharynx normal, rhinoscopy normal, nasopharynx normal, and laryngeal structures normal were observed.

In the ultrasonography performed on the patient, a vascularized lesion with tubular-cystic areas of approximately 4*3cm in size and millimetric calcification was observed in the right supraclavicular region.

In computed tomography angiography (CTA), there is an irregularly shaped lesion with calcific foci in it, approximately 4*4 cm in size, extending from the right side of the neck to the supraclavicular area (**Figure 1**).

In the neck magnetic resonance examination (MR), a lesion measuring approximately 48 x 39 mm in the skin tissue at the level of the right supraclavicular region, hypointense on T1A, hyperintense on T2A, with a multiloculated appearance, and showing heterogeneous contrast enhancement is observed. It has been associated with AVM-hemangioma-like lesions (**Figure 2**).

Excision was recommended to the patient with an AVM in the right supraclavicular area. The patient's parents were informed about the surgery and informed consent was obtained.

The lesion in the right supraclavicular area was completely removed (**Figure 3**).

No complications developed in the perioperative and postoperative periods. In the pathology re-port, it was stated that the lesion was 4.5x4x3.5cm in size, yellow-brown in color, and had a multi-loculated and hemorrhagic appearance on the cut surface. The diagnosis was reported as Caver-nous Hemangioma. No additional treatment was planned for the patient. No recurrence was obser-ved in the patient who was followed for 6 months.

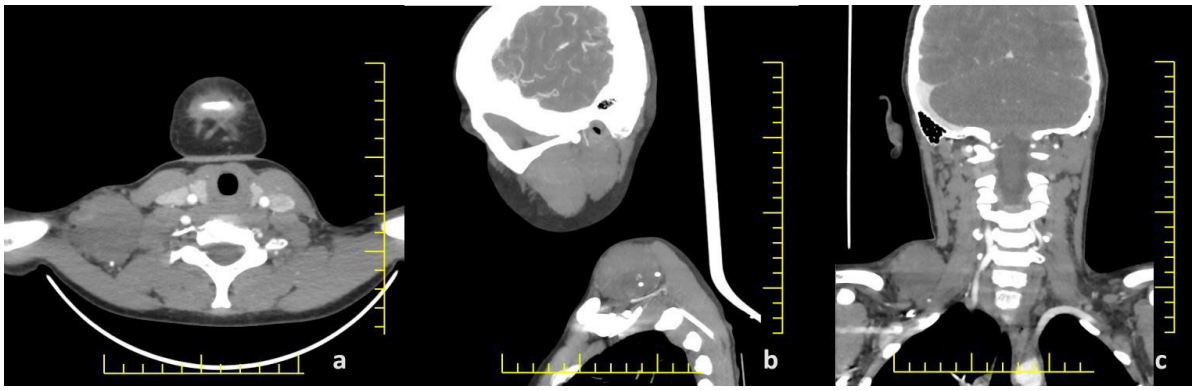

Figure 1. CT images of the AV malformation a) axial b) sagittal c) koronal

DISCUSSION

Extracranial arteriovenous malformations (AVMs) are complex high-flow vascular malformations that must be diagnosed and treated. They consist of congenitally developing arteriovenous shunts with chronic vascular dilatation, collateralization and local tissue infiltration. There is no normal capillary system. The reasons remain unclear. There is currently promising research on the identification of genetic markers and molecular targets.1-3 AV malformations may occur due to mutations in the TGF-B, RASA 1 and PTEN genes, which are responsible for vasculogenesis (4). However, there is no recognized pharmacological treatment for AVM yet.

They can occur at any age following an early period of inactivity. Focal AVMs have good outcomes following adequate treatment. Diffuse lesions have multiple feeding vessels, leading to a high rate of recurrence despite treatment. They have different clinical appearances. They may be potentially life-threatening due to progressive symptoms and infiltrative disease (1-3).

The auricle is the most frequently involved extracranially in the head and neck region, followed by the oral cavity (59%), nasal cavity (35%), perioral, parotid and neck regions (5-7). Our case was located in the right supraclavicular area.

Doppler ultrasound is the first imaging examination that should be performed. Then, depending on the relevant anatomical region, MR angiography or CTA may be recommended (3).

Accurate diagnosis and treatment of AVMs is difficult. Management of AVMs involves traditional surgical and/or endovascular techniques. The combination of embolization and surgical resection has become the treatment of choice in recent years.The main goal of both types of treatment is complete occlusion or resection of the lesion.Transcatheter embolization of vessels has improved over the years and new embolic agents have emerged.The anatomical classifications proposed by Cho and Yakes are both useful in choosing the best therapeutic approach: endovascular, direct puncture, retrograde venous approach, or a combination of these techniques.

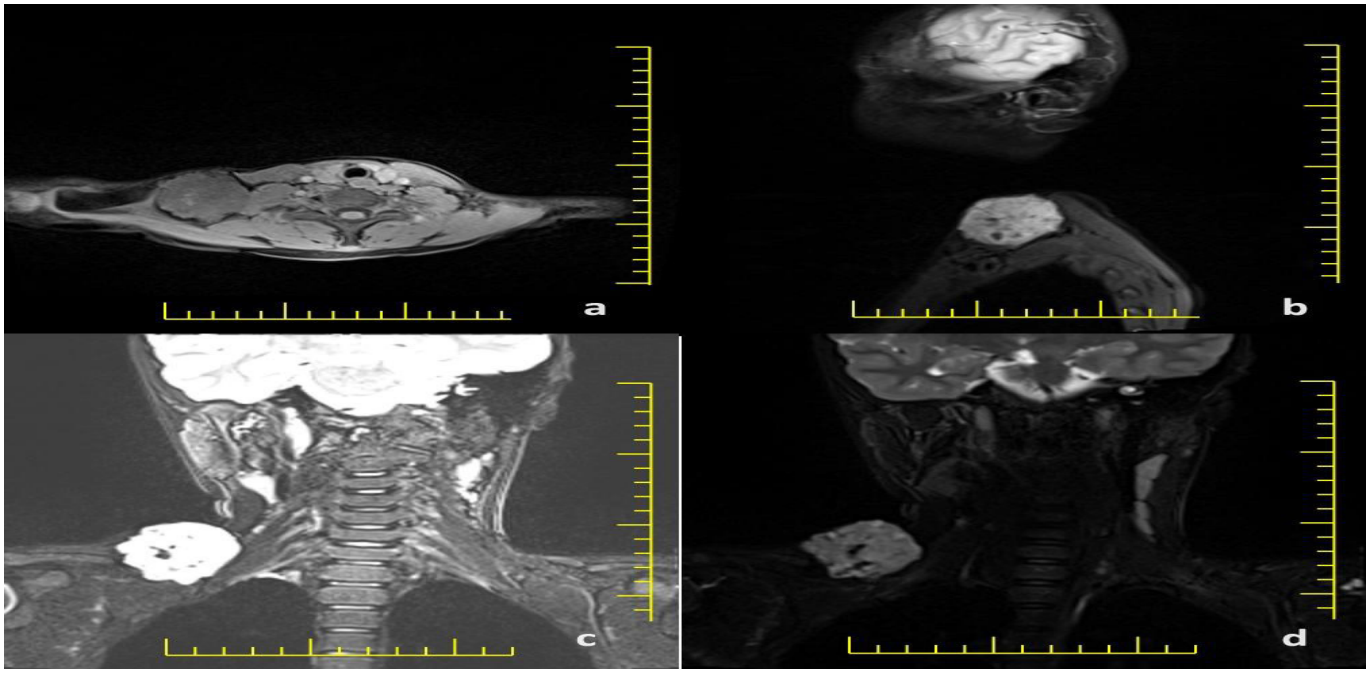

Figure 2. MR images of the AV malformation a) axial b) T2 sagittal c) T1 coronal d) T2 coronal

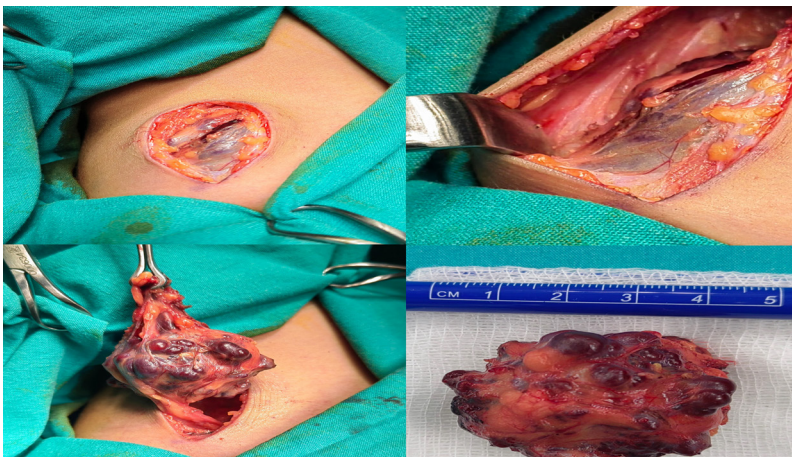

Figure 3. Surgery images

The types of materials available for embolization are classified as mechanical devices, liquid agents (Glue and Onyx) and mechanical occlusion (coil or amplatzer plugs). There is currently no common agreement on the ideal embolic agent. Efficacy, recurrence rate and most common complications were evaluated (1-3). Recurrence of AVMs after embolization or resection is reported in up to 80% of cases. Incomplete resection and embolization can lead to aggressive growth of remaining tissue, and the risk of progression can be as high as 50% within the first 5 years and recurrence can occur up to 10 years (1-3).

A multidisciplinary team of experienced physicians is required to make decisions regarding the best therapeutic approach. Careful analysis of clinical features and evaluation of treatment options form the basis for successful management of AVMs.

CONCLUSION

In this case, a 10-year-old male with a progressively enlarging supraclavicular arteriovenous malformation was successfully treated with surgical excision, resulting in a complication-free recovery and no recurrence during six months of follow-up. This report underscores the importance of early diagnosis, advanced imaging, and a multidisciplinary approach for optimal management of AVMs, contributing valuable insights into the treatment of rare vascular anomalies in children.

DECLERATIONS

Ethics Committee Aproval: Not available

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REFERENCES

1. Rosenberg TL, Suen JY, Richter GT. Arteriovenous Malformations of the Head and Neck. *Otolaryngol Clin North Am.* 2018;51(1):185-195. doi:10.1016/j.otc.2017.09.005
2. Fernández-Alvarez V, Suárez C, de Bree R, et al. Management of extracranial arteriovenous malformations of the head and neck. *Auris Nasus Larynx.* 2020;47(2):181-190. doi:10.1016/j.anl.2019.11.008
3. Soulez G, Gilbert Md Frcpc P, Giroux Md Frcpc MF, Racicot Md Frcpc JN, Dubois J. Interventional Management of Arteriovenous Malformations. *Tech Vasc Interv Radiol.* 2019;22(4):100633.
4. Burrows PE, Mulliken JB, Fishman SJ, Klement GL, Folkman J. Pharmacological treatment of a diffuse arteriovenous malformation of the upper extremity in a child [published correction appears in J Craniofac Surg. 2009 Sep;20(5):1629-30]. *J Craniofac Surg*. 2009;20 Suppl 1:597-602. doi:10.1097/SCS.0b013e3181927f1e
5. Wu JK, Bisdorff A, Gelbert F, Enjolras O, Burrows PE, Mulliken JB. Auricular arteriovenous malformation: evaluation, management, and outcome. *Plast Reconstr Surg.* 2005;115(4):985-995. doi:10.1097/01.prs.0000154207.87313.de
6. Kobayashi K, Nakao K, Kishishita S, et al. Vascular malformations of the head and neck. *Auris Nasus Larynx.* 2013;40(1):89-92. doi:10.1016/j.anl.2012.02.002
7. Pham TH, Wong BJ, Allison G. A large arteriovenous malformation of the external ear in an adult: report of a case and approach to management. *Laryngoscope.* 2001;111(8):1390-1394. doi:10.1097/00005537-200108000-00014