Urology Case Reports 32 (2020) 101217

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: http://www.elsevier.com/locate/eucr

Oncology

A rare case of scrotal angiolipoma and the literature review

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ARTICLE INFO

Keywords:
Angiolipoma
Scrotum
Immunohistochemistry

ABSTRACT

Angiolipoma has been reported in many cases, which often occurring subcutaneously in the trunk and limbs. However, angiolipoma rarely occurs in the scrotum. In order to better understand its biological characteristics, clinical features and prognosis, in this case, a 41-year-old male with painful angiolipoma in the scrotum was reported.

Introduction

Angiolipoma, frequently occurring on the spine, especially in the dorsal lateral cord of the midthoracic vertebra, is a subcutaneous benign tumor of the trunk and limbs. It has been considered that angiolipoma may be a transitional state of a spectrum spanning from lipoma to full-rank angioma. Angiolipoma is rare uncommon in scrotum and there were few cases reported in the previous literatures. For better understanding the pathological features, clinical manifestations and diagnostic characteristics, in this case, a 41-year-old male with scrotal angiolipoma was reported, and reviewed relevant literatures.

Case presentation

A 41-year-old male went to our clinic with a complaint of scrotal mass accompanied by pain for 1 week. Physical examination revealed that there was a mass at the bottom of the right scrotum disconnecting from the right testicle, and with a size of about 3.0 × 4.0 cm and a smooth surface without adhesion to the skin. Ultrasound study indicated that a slightly hyperechoic zone was detected subcutaneously at the bottom of the right scrotum, and the size of lesion was about 3.5 × 2.2 × 2.0 cm. The boundary was clear and the internal echo was not uniform. Color doppler flow imaging (CDFI) showed blood flow signal was visible inside (Fig. 1). Serum HCG and AFP were in normal level.

Subcutaneous mass resection at the bottom of the right scrotum was performed under local anesthesia with 1% lidocaine. The tumor, with the size about 3.5 × 2.5 cm, was nourished with an independent arteriovenous system (Fig. 2). After the operation, the pathological study made an angiolipoma diagnosis. Immunoenzyme labeling study showed positive in CD34, CD31 and S100 (Fig. 3), which supported angiolipoma diagnosis.

The man was followed up for 12 months after the procedure, and there were no complaints of discomfort. Ultrasound study showed that there was no neoformation reoccurrence in the primary site.

Discussion

Angiolipoma is composed of mature adipose tissue and abnormal vascular components. Some scholars believed that angiolipoma is a transitional state between lipoma and hemangioma. In 1912, Bowen reported the first case of angiolipoma, describing it as multiple masses subcutaneously, with a hemangioma-like appearance but a fatty component. It was until in 1962, Howard and his colleagues described angiolipomas as multiple subcutaneous nodules, vascular components, and stroma components replacing fat tissue, which gave an explicit description on the tumor.[1]

Panagopoulos I and his colleagues conducted G banding chromosome analysis on three short-term cultured angiolipomas. They found that there was abnormal loss or structural rearrangement of chromosome 13 in all three angiolipomas.[2]

The most common sites of angiolipoma are the subcutaneous areas of trunk and limbs. Other sites, such as the spinal cord, especially the midthoracic vertebra, are also common. While, other site, such as paratesticular, have also been reported. Srivastava A reported a case of a 77-year-old man, complaining increasing discomfort in scrotum, underwent surgical resection of scrotal mass and an angiolipoma lesion was confirmed in the subsequent pathological study.[3] Sriram Rajagopalan reported that a 2.5-year-old boy who was treated for a painless scrotal

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https://doi.org/10.1016/j.eucr.2020.101217
Received 27 March 2020; Accepted 21 April 2020
Available online 24 April 2020

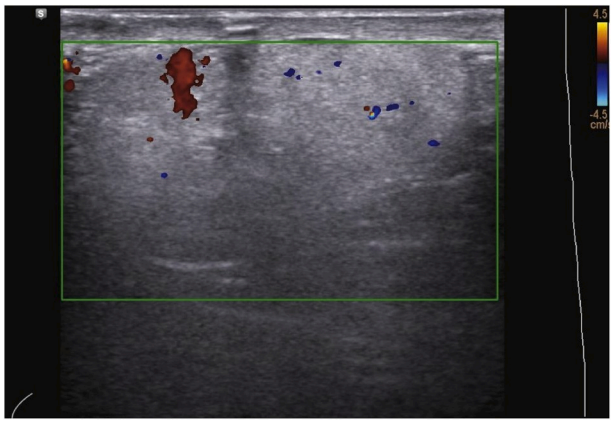

Fig. 1. A slightly hyperechoic zone in the ultrasound CDFI image.

mass.[4] Postoperative pathology study revealed angiolipoma. The age of this man was 41 years old, it may conclude that the age of scrotal angiolipoma can be seen at any age from infancy to adulthood.

Pathologically, in the gross appearance, the angiolipomas have their good capsules, and their section colors can be an intermediate color of a spectrum spanning from red to yellow, depended on the different proportions of fat and vascular content. Microscopically, the tumor is composed of mature adipocytes with indented nuclei peripherally, and a single lipid droplet frequently intermingled with abnormal blood vessels of varying diameter.[5] Although, the proportion of adipose tissue and vascular structure varies greatly, but in general, adipose tissue dominates. The diagnosis of angiolipoma can be made by HE staining directly, but immunohistochemistry is still needed to confirm the further diagnosis. Frequently, S100 was positive distributed in fat cells in varying degrees from focal to diffuse. The vascular components of CD34 and CD31 were also positive in the epithelial cells.

Patients with scrotal angiolipoma come to the clinics commonly accompanying the complaint of scrotal mass, painful or unpainful, which might enlarge progressively. In addition to angiolipoma, the other common abnormal mass in scrotum can be divided into cystic mass and solid mass. The formal concluded hydrocele, epididymal cysts and varicocele, and other mesothelial and dermoid cysts. Cystic masses are easily diagnosed by Ultrasound study. The lateral ones should include polyorchidism and rhabdomyosarcoma.

In general, angiolipomas are benign tumors, and no malignant angiolipoma has been reported in the literature. After complete surgical resection, recurrence is not easy and the prognosis is good.

Conclusion

In summary, scrotal angiolipoma is extremely rare, and usually discovered in physical examination. When the scrotal mass is solid

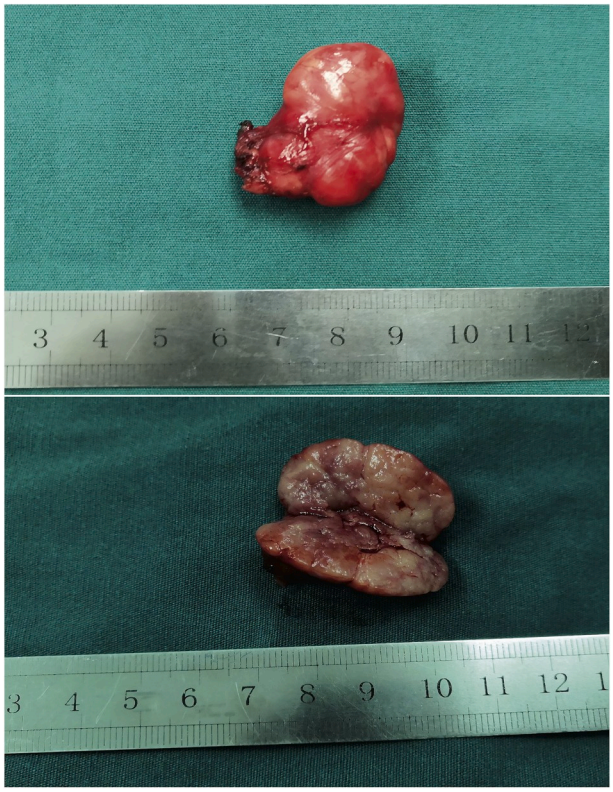

Fig. 2. The gross appearance of the scrotal lesion.

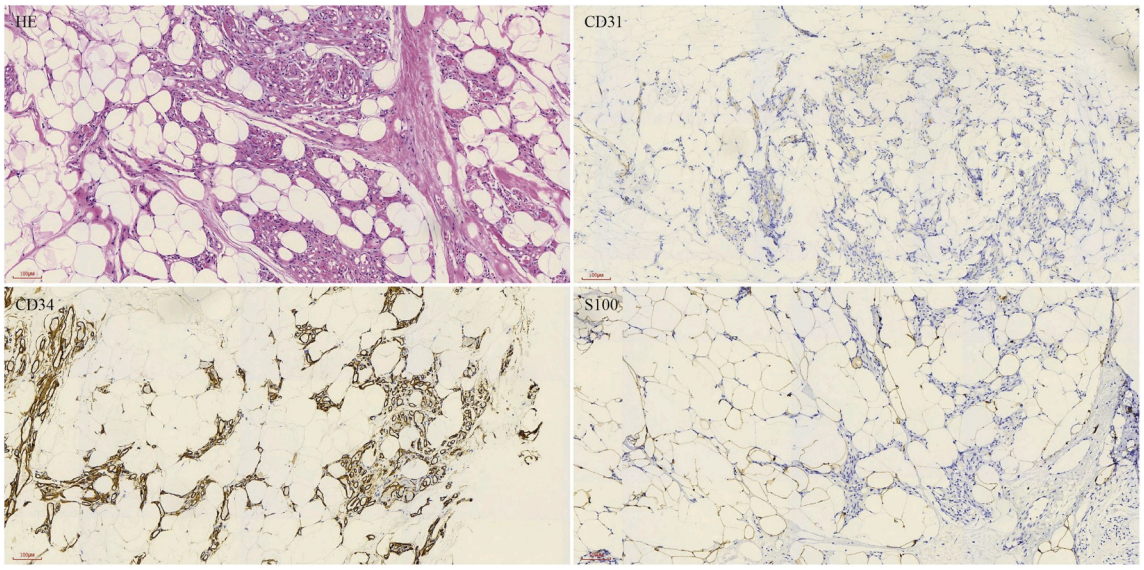

Fig. 3. Immunohistochemistry study of the scrotal angiolipoma. top-left, HE; top-right,CD31; bottom-left CD34; bottom-right, S100.

especially, physicians should consider the possibility of angiolipoma. For its benign characteristic, once the angiolipoma is given a surgical resection, it will not easily reoccurrence and with a good prognosis.

Acknowledgments

This study was supported by the Med-Engineering Cross Foundation, Shanghai Jiaotong University (No. YG2019QNB28) and the Research Fund of Shanghai Tongren Hospital, Shanghai Jiaotong University School of Medicine (No.TRYJ(LC)201805), the Group Foundation of the Shanghai JiaoTong University Affiliated Sixth People Hospital (ly201902).

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