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A case report: Venous malformation of right wrist

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ABSTRACT

Venous malformation is the most familiar type of congenital vascular malformation. The incidence and prevalence of venous malformation are low. They are asymptomatic and usually present at birth. Venous malformation cannot be easily diagnosed and are often misinterpreted with hemangioma in radiological image. An appropriate clinical history and Magnetic resonance imaging are useful in diagnosis and management. This case report will show the various methods to diagnose with imaging and surgical management of venous malformation of wrist.

Keywords: Venous malformation, Magnetic resonance imaging, Excision biopsy

1. INTRODUCTION

One of the commonest types of vascular malformation is venous malformation with 2 in 10,000 incidence and 1 percent prevalence (Vikkula et al., 2001 & Eifert et al., 2000). Venous malformations in general remain one of the most difficult vascular diseases to manage, particularly the lesions that occur in the hand and forearm. Venous malformation can also cause paint to patients and can lead to important systemic and local complications. They are present at birth, and are not easily seenclinically until older age of child and without anyspontaneous regression; the malformation grows (Richter et al., 2012). Venous malformation are formed of ectatic venous channels seen usually in the limbs, head, neck and trunk and are thought to be in rare occurrence in most cases, in spite of existence of familial inheritance patterns (Cox et al., 2014). Appropriate diagnosis has been animportant key factor in venous malformation management (Lee et al., 2013). Doppler ultrasound and magnetic resonance imaging are key imaging techniques used to specify the features and diagnose venous malformations. Assessing treatment and establishing strategy for long term management is done with magnetic resonance imaging. Treatment options may vary which include sclerotherapy, surgical intervention or ablative therapies. In this case we will review the approaches of diagnosing venous malformations and methods of management for this condition in 11 years old patient.

2. CASE REPORT

An 11 years old boy was brought to hospital by his father with the complaints of swelling in the right wrist since birth. The swelling was initially small in size approximately 1x1cm which gradually increased to 5x4cm in the past 11 years. He had no trauma history. His general condition is fair and vitals stable (Figure 1). On examination a swelling of size 5x4cm present in the medial aspect (ulnar) of right wrist, skin over the swelling appears normal and pinch able, swelling is non-pulsatile, soft in consistency and borders not well defined. Swelling is compressible and mobility is restricted, no axillary lymph nodes or any other swellings palpable (Figure 2). On genital examination, the urethral metal opening was found to be at lower level ventrally in glans penis (hypospadias), hood head appearance was seen. All routine baseline investigations were done and showed to be within normal limits. MRI imaging was done and showed relatively defined ovoid lesion in the subcutaneous plane along the dorsal aspect abutting underlying extensor compartment tendons with no obvious extension into the joint. The lesion was partly hyper intense and partly hypo intense- low flow vascular malformation may be considered (Figure 3 and 4).

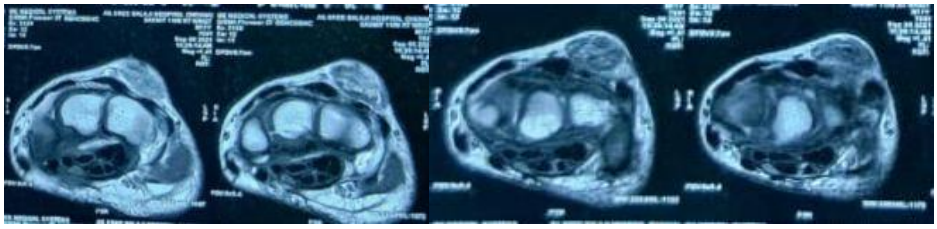

Figure 1 3T- High Field Magnetic Resonance Imaging – Right Wrist

Figure 2 Pre-operative image of right wrist

Figure 3 Intra operative image

Figure 4 venous malformation specimens

Urology opinion was sought in view of hypospadias. Anesthesia fitness obtained and was then taken up for surgery. Under aspetic precaution, under general anesthesia, excision biopsy was done with ligation of proximal and distal feeder vessel. Simultaneously meatotomy with Circumcision was done. Post operatively patient was stable and was started on appropriate antibiotics and analgesics. His condition improved and got discharged. He then came for review after 1 week with his Histopathology report which showed picture suggestive of venous malformation- cavernous hemangioma (Figure 5).

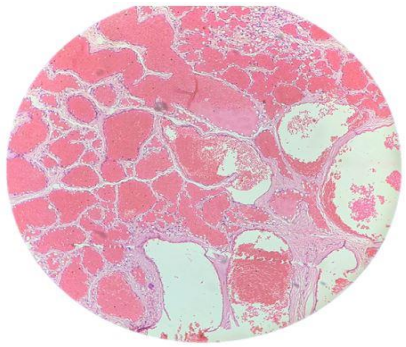

Figure 5 Histopathology image showing picture suggestive of venous malformation- cavernous hemangioma.

3. DISCUSSION

One of the most common vascular malformations to occur is venous malformation, in the hand region, itaccounts for about 40% approximately (Richter et al., 2003). It usually presents at birth and progresses slowly in childhood, they are of various sizes, thin-walled, sponge-like channels but absent in smooth muscle. Compressible mass is bluish and expands slowly with time (Frieden et al., 2010). Vascular malformations are congenital or acquired, congenital: Which result in lack of venous differentiation during vascular development, and acquired is associated with previous trauma history. A vascular malformation is diagnosed with patient's history, complaints and examination (Mulliken, 1982). Low flow vascular lesions progresses with trauma, age and after partial resection. We considered that our case corresponds to low flow vascular malformation because of its consistence, and the absent pulsation (Redondo, 2004; Driscoll et al., 2013). The Management of venous malformations can be done by observation irradiation, cryotherapy, electrocoagulation, aspirin (low dose), sclerotherapy, surgical excision and biopsy (Driscoll et al., 2013; Hoffman et al., 2014; Kondziolka et al., 2014). The agents used for sclerotherapy are sodium tetradecyl sulfate, and hypertonic saline, alone or in combination. But the recurrence rate in sclerotherapy is high and also can cause embolism. So in this case, surgery plays a major key-role in the venous malformation removal with ligation of feeder vessel, to avoid the further increase in size, compressing adjacent structures causing pain and fistula formation.

4. CONCLUSION

Venous malformations of the wrist can also be associated with many complications, correct diagnosis and selection of cases are important for the management and surgical treatment; in this case excision biopsy is a safe and effective method for treating venous malformations over the right wrist.

Informed consent

Written and oral informed consent was obtained from the patient included in the study.

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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