

Low Flow Vascular Malformation of the Chest Wall in an Adult-A Case Report

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Abstract

Vascular malformations of the thoracic wall are rare. Venous malformation is a congenital vascular malformation. Not many Case reports are available in the literature. Paucity of data presents therapeutic dilemmas.

We herewith present a case of venous malformation of the chest wall.

Keywords: Vascular Malformations; Thoracic Wall; Chest Wall; Adult

Case Report

A 51 year old female home maker presented to the department of Respiratory medicine with complaints of exertional breathlessness of 3 years duration and left sided chest pain of 6 months duration. Pain increases on coughing. She also gave history of swelling over the posterior aspect of left hemithorax since childhood without any other symptoms, which was gradually increasing in size. She denied any history of Diabetes or Hypertension. At presentation her vitals were Heart rate -90/min, BP-120/80, oxygen saturation -98% on room air.

Chest examination revealed a diffuse soft, compressible swelling over the posterior aspect of left hemithorax with engorged veins and no thrill (Figure 1a).

Her routine blood investigations like Complete blood count, Liver function test, Renal function tests were normal. 2D echocardiograph was normal. Patient was subjected to contrast enhanced Computed Tomography angiogram of thorax. It revealed multiple tubular vascular channels in the soft tissues of the left lateral chest wall from the level of D7 to L2 involving a large area of the chest wall. The lesion extended both anteriorly and posteriorly to the midline epicentered in the subcutaneous plane, superficially reaching up to the skin and deeper aspect involving the muscles of the chest wall latissimus dorsi, intercostal muscles, extrapleural and pleural spaces. These features were suggestive of vascular malformation with phleboliths and bone erosion involving the left lateral chest wall, favouring a diagnosis of slow flow venous malformation (Figure 1b-1d).

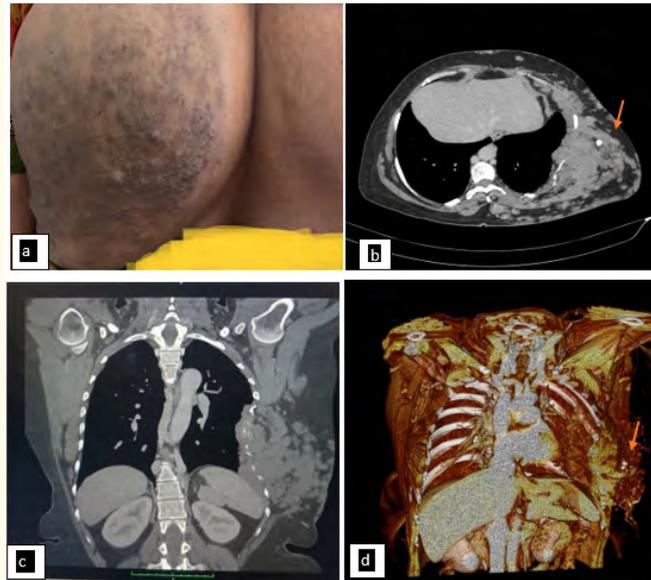


Figure 1: (a) Photograph showing lesions at back (b), (c) and (d) Axial, coronal and volume rendered contrast enhanced CT images of thorax shows an ill-defined enhancing left thoracic wall soft tissue attenuating lesion with phleboliths (arrow) and intra thoracic extension causing remodelling and erosions of the underlying ribs. No feeding arteries identified.

Patient was managed with analgesics for symptomatic relief. Cardiothoracic, vascular surgeon’s and interventional radiologists opinions were sought. She was advised to undergo conventional and direct puncture angiogram of the thorax to identify and embolise arterial feeders and coil outflow veins. Pre-operative sequential sclerotherapy by the interventional radiologist followed by staged excision was recommended. However, patient was unwilling for any intervention.

Vascular malformations of the thoracic wall are very rare. Thoracic vascular malformations are venous or arteriovenous. According to vascular hemodynamics type of flow can be grouped as low flow and high flow vascular malformations [1].

High flow malformations are most commonly AV malformations. Low -flow malformations include lymphatic malformation, capillary-venulous malformation, Venous malformations, glomuvenous malformations, and non shunting mixed lesions [1].

Venous malformation is the most common type of congenital vascular malformation. Although present at birth, they become clinically evident later in life. They tend to grow without spontaneous regression [1]. Venous malformations are usually found in the head, neck (40%), limbs (40%), and trunk (20%) and are composed of ectatic venous channels.

Malformations with arterial components are considered high flow lesions and those without arterial components are considered as low flow lesions [2].

Imaging is necessary for venous malformations to detect and evaluate the deeper lesions. For cases requiring therapeutic interventions angiography remains an adjunct imaging modality. Phleboliths are hallmark of venous malformations.^[1] Symptomatic clinical presentation of venous malformations tends to be location dependent. Spontaneous thrombosis in static venous lake is observed in 40% of patients.

Treatment is extremely difficult and challenging, must be individualized based on the site, extent and hemodynamics of the malformation. Lesions pathophysiology, etiology and the consequences of a procedure has to be reviewed before implementing any treatment.

High flow vascular malformations are treated by transvenous embolization techniques.

Asymptomatic venous malformation arising from the right pectoralis major muscle mimicking breast tumor has been reported [3].

Giant AV malformation of the chest wall treated with endovascular treatment by embolization with absolute alcohol [4] and coil embolization and stent exclusion of feeder vessels followed by en-block resection and reconstruction [5] have been reported.

Conclusion

Venous malformations are present at birth, clinical history and imaging are essential for diagnosis and planning management.

Multidisciplinary approach is required for symptomatic patients.

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Bibliography

1. Behraves S., *et al.* "Venous malformations: clinical diagnosis and treatment". *Cardiovascular Diagnosis and Therapy* 6.6 (2016): 557-569.
2. Lane F Donnelly., *et al.* "Vascular malformations and hemangiomas". *American Journal of Roentgenology* 174.3 (2000): 597-608.
3. Metaxa L., *et al.* "Vascular chest wall lesion mimicking a breast tumor on screening mammograms: Report of a case". *The Breast Journal* (2019): 1-3.
4. Yilmaz S., *et al.* "Giant arteriovenous malformation located on the chest wall - diagnosis and endovascular treatment: report of a case". *Surgery Today* 40.12 (2010): 1164-1168.
5. McCarthy C., *et al.* "Giant Chest Wall Arteriovenous Malformation: A Case Report and Literature Review". *Annals of Vascular Surgery* 46 (2018): 369.e7-369.e11.

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