Role of volumetric CT angiogram in diagnosis of perigraft seroma post modified blalock taussig shunt.

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Procedure: Shunts
Imaging Technique: CT-Angiography
Special Focus: Grafts Case Type: Clinical Cases
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Patient: 14 years, male

Clinical History:
A 14 year-old male with a past history of cardiac surgery for tetralogy of fallot 10 years ago, presented with cough, fever, hemoptysis and weight loss. His chest x-ray was performed which shows mediastinal mass. Chest CT was performed for the characterization of mediastinal mass.

Imaging Findings:
Axial, Sagittal and coronal CT angiogram images were performed in a patient for characterization of mediastinal mass [on chest radiograph (not available)] 10 years after MBTS. CT shows a well defined fluid density cyst with calcified walls (upper arrow) surrounding proximal end of a synthetic PTFE graft (lower arrow). No contrast opacification was found to suggest pseudoaneurysm. The finding was suggestive of perigraft seroma.

Discussion:
Modified Blalock Taussig shunt (MBTS) is a palliative procedure indicated in a subset of children with cyanotic heart disease not amenable to primary repair at the time of presentation. It is a side-to-side shunt between a systemic artery and the pulmonary artery with polytetrafluoroethylene (PTFE) graft [1]. It was first performed by Gazzaniga et al. in 1976. MBTS may be associated with significant morbidity and mortality [3]. Common reported early complications include graft failure, shunt stenosis and occlusion, infective endarteritis, nerve and surrounding structure damage at the time of surgery, over-circulation and inadequate pulmonary blood flow. Late complications include progressive shunt failure, seroma and pseudoaneurysm formation [2]. Perigraft seroma development around a modified Blalock-Taussig shunt is a relatively rare but, nonetheless, well-known complication. In recent literature, the prevalence of this complication has been reported as ranging from 2.5% to 9.5% [3]. Various diagnostic modalities include chest radiography, echocardiography and MDCT angiography. Chest radiography shows the mediastinal mass as first sign of the seroma after MBTS. Echocardiography can diagnose 73% of cases with reasonable accuracy and because of its portability and feasibility of bedside use, it is the initial imaging modality in suspected cases of perigraft seroma development. Volumetric CT angiography plays a vital role in the diagnosis and helpful in the differentiation of perigraft seroma and pseudoaneurysm. Management in pseudoaneurysm should be aggressive, as timely intervention may be lifesaving, while in seroma the management is most often conservative.
occasionally requiring surgical intervention [4].

**Differential Diagnosis List:** Perigraft seroma after Modified Blalock-Taussing Shunt surgery., Pseudoaneurysm, Mediastinal lymphadenopathy

**Final Diagnosis:** Perigraft seroma after Modified Blalock-Taussing Shunt surgery.

**References:**


Description: Axial CT angiogram shows a fluid collection showing calcified walls (horizontal arrow) surrounding PTFE graft (vertical arrow) Origin: Nizamani WM, Department of Radiology, Ziauddin University Hospital, Karachi, Pakistan.
Description: Coronal reformatted CT angiogram shows fluid collection showing calcified walls (upper arrow) surrounding PTFE graft (lower arrow) 

Origin: Nizamani WM, Department of Radiology, Ziauddin University Hospital, Karachi, Pakistan.
Description: Sagittal reformatted CT angiogram shows fluid collection showing calcified walls (upper arrow) surrounding PTFE graft (lower arrow) Origin: Nizamani WM, Department of Radiology, Ziauddin University Hospital, Karachi, Pakistan.
Description: Coronal reformatted CT angiogram shows perigraft seroma (arrow) surrounding MBTS graft. Origin: Nizamani WM, Department of Radiology, Ziauddin University Hospital, Karachi, Pakistan.