

Intravascular Lipoma of the Superior Vena Cava: Case Report

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Article Information

Article Type:	Case Report	*Corresponding Author:	Citation:
Journal Type:	Open Access	Knop Gustavo,	Knop G, Margaria RA, Feroglio S, Margaria M and Margaria R (2021). Intravascular Lipoma of the Superior Vena Cava: Case Report.
Volume:	Issue: 1	Department of Cardiothoracic Surgery, FRCS,	Radiology open Acc J. 1(1); 1-4
Manuscript ID:	ROAJ-1-103	Heart Institute of the Caribbean, Kingston,	
Publisher:	Science World Publishing	Jamaica, E-mail: gustavo.lionel@hotmail.com	
Received Date:	22 July 2021		
Accepted Date:	04 Aug 2021		
Published Date:	09 Aug 2021		

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ABSTRACT

Lipomas of the superior vena cava (SVC) are exceptional. We present a case of an incidentally discovered asymptomatic lipoma located in the SVC with right internal jugular and innominate vein extension [1]. Primary tumours of major central veins are very unusual. Vein wall Lipomas are even rarer benign tumours, being the most common location the inferior vena cava (IVC) [2]. SVC lipomas may be asymptomatic, or they may cause venous obstructive symptoms on the SVC drainage territory, being most discovered as incidental findings on CT examinations performed for other reasons [3]. Some authors suggested that surgical excision is indicated only when the tumour causes pain or compression of adjacent structures. However, other experts propose that surgical resection is mandatory as a result of being the only way to make a definitive distinction between benign lipoma and liposarcoma [4].

INTRODUCTION

Primary venous tumours are unusual occurrence. Lipomas are a type of benign soft tissue tumour that are most commonly located in the subcutaneous tissue. These tumours very rarely originate from the vein wall, being the inferior vena cava (IVC) the most frequent location. However, a few cases of superior vena cava

(SVC) lipomas have been described in the literature despite the fact of being extremely rare [5]. Lipomas do not cause any specific symptomatology. If present, the clinical picture would be reflected according to the size and localization of the tumour. Regardless of this, they are frequently asymptomatic and are mostly described as an incidental finding.

We present a case of an SVC Lipoma that was accidentally found in a Chest Computed Tomography (CT imaging) in the context of a patient admitted to hospital with a SARS- Cov2 bilateral pneumonia.

CASE REPORT

A 59-year-old male, without contributory prior medical history, who tested positive for SARS-Cov2 Test, presented to the emergency department of the local hospital with dyspnoea functional class 2, and non-productive cough for four days. The physical examination showed that the patient was afebrile, with 90% oxygen saturation. It was deemed necessary to proceed with Oxygen therapy. For this reason, the medical staff decided the admission of the patient to the local hospital to proceed with diagnostic investigations and treatment. According to the clinical presentation and the physical exam, it was imperative to perform a CT Chest. The

images demonstrated the presence of a bilateral pneumonia. Additionally, the contrast Computed Tomography Angiography (CTA) displayed an elongated low-density mass (fat density) at the level of the right brachiocephalic venous trunk extending to the internal jugular vein and the SVC but not reaching the right atrium (Figure 1-11). Other neighbour vascular structures were preserved and free of tumour.

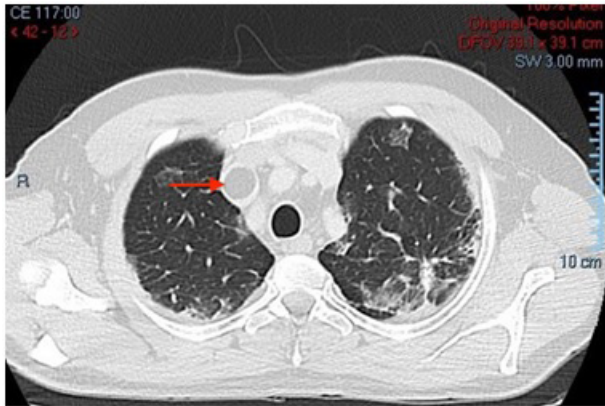


Figure 1



Figure 2

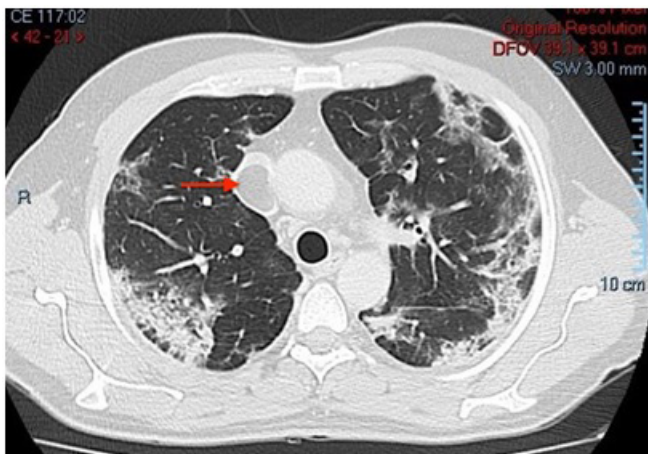


Figure 3

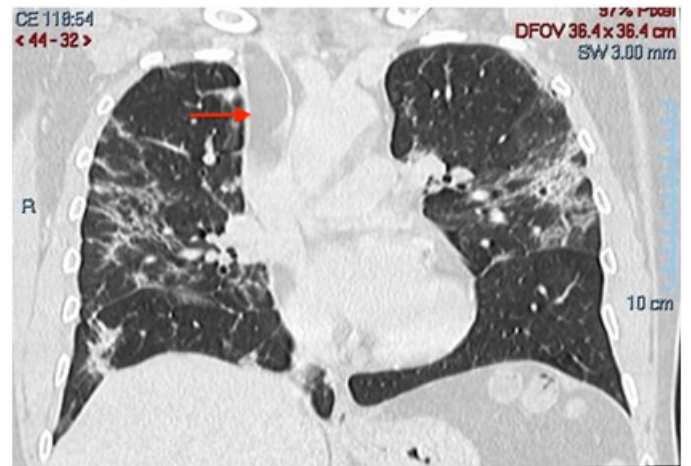


Figure 4



Figure 5



Figure 6

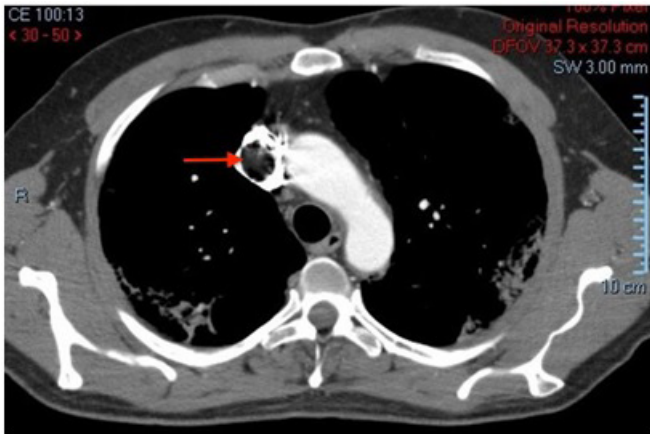


Figure 7



Figure 10

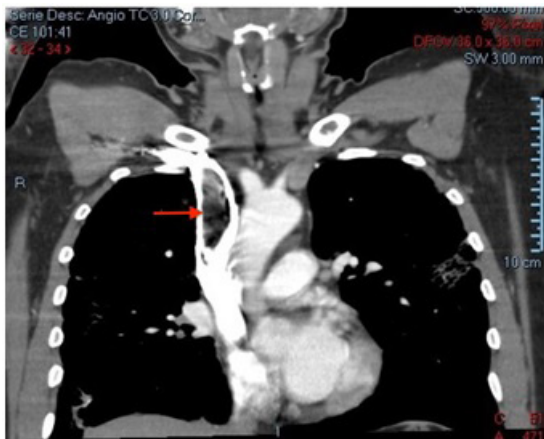


Figure 8



Figure 11

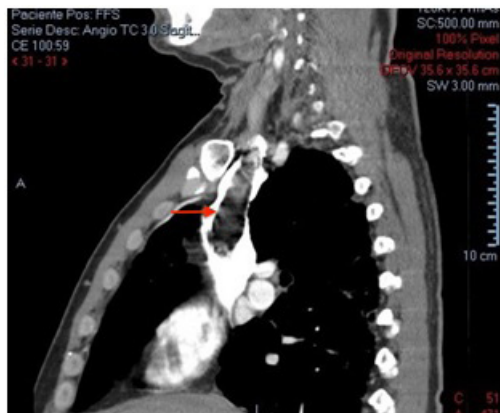


Figure 9

DISCUSSION

Intravenous lipomas are exceedingly rare benign tumours with few cases reported [6]. These tumours arise from the wall of the veins. The most common location reported has been within the inferior vena cava. From its origin in the vein wall, they could grow into the vascular lumen, or spread extraluminally invading the extravascular fatty tissue [6]. As commented in the introduction, most of these intravascular benign tumours are usually diagnosed incidentally during CT or MRI performed for other reasons, such as in this patient case [4]. Although SVC lipomas are exceptional and much less frequent than IVC ones, they can present with a florid picture of Superior Vena Cava Syndrome due to mediastinal compression and/or SVC obstruction causing head, facial, neck and arm swelling, upper limb paraesthesia and venous thromboembolism [8]. Contrast CT scan is a highly susceptible method to determine fat coefficients (Hounsfield units: given values between 30 to 150) which facilitates a non-invasive diagnosis of intravascular lipomas located in the great venous vessels.

In the present case a contrast CT imaging of the chest was per-

formed. According to the calculations of fat densitometry, the images obtained correspond to an intravascular Lipoma involving the right brachiocephalic and internal jugular vein, extending proximally to the SVC, but not reaching the right atrium. It is accepted that symptomatic patients should be operated on. Intravenous thrombus formation must be considered in the differential diagnosis, but densitometry would define the definitive characteristics of the intraluminal mass.

CONCLUSION

Although lipomas are the most common soft tissue tumors, such a case of a primary intraluminal lipoma located in the SVC is extremely rare. Intravascular lipomas may be asymptomatic, incidentally revealed by imaging, or they may cause a venous obstruction or mediastinal syndromes by virtue of an excessive size causing compressive effects. We present an intraluminal lipoma originating in the confluence of the right subclavian and internal jugular veins and extending down to the SVC-right atrial junction. We believe that symptomatic patients should be operated on. Intravenous thrombus formation must be ruled out by densitometry calculation of the intraluminal mass.

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