

CASE REPORT

Acute superior vena cava obstruction causing total airway obstruction in the anaesthetic recovery room

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ABSTRACT:

Acute superior vena cava obstruction is commonly benign and often due to thrombosis following central venous catheterization or placement of pace maker wires. Acute obstruction due to malignancy is rare. We report a young patient known to have a malignant anterior mediastinal tumor developing acute SVC obstruction causing total airway obstruction in the anaesthetic recovery room following surgery unrelated to the mediastinum.

Key words: Superior vena cava, Mediastinal tumor

Ref: Gunaratne A. Acute superior vena cava obstruction causing total airway obstruction in the anaesthetic recovery room. *Anaesth Pain & Intensive Care* 2009; 13(1): 25-27.

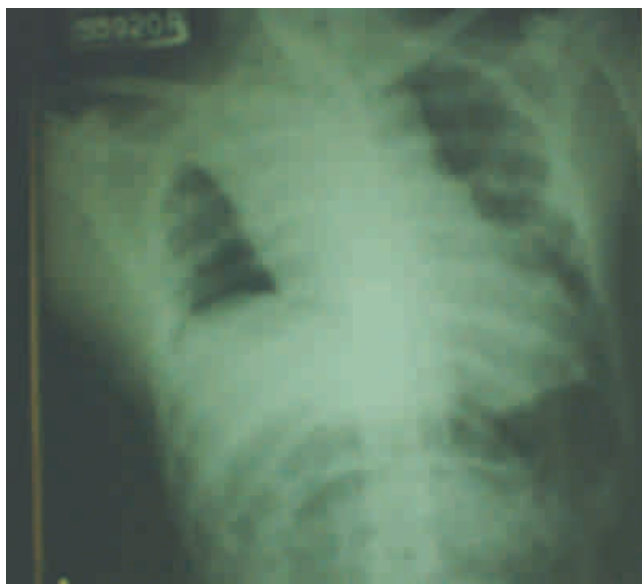
INTRODUCTION:

Majority of cases of acute onset superior vena cava (SVC) obstruction is due to thrombosis caused by central venous catheters¹. Most other causes of acute obstruction are benign. Malignancies generally cause a gradual obstruction and the commonest of these is bronchogenic carcinoma². Lymphoma and thymoma are the other main non benign causes. However, acute onset obstruction is rare in these patients.

CASE REPORT

A 29-year-old male patient with neurofibromatosis presented with a painful neurofibroma at the back of the chest. He had had a similar painful neurofibroma at the right elbow which was surgically excised earlier. The histology of it was reported as a neurofibroma undergoing malignant transformation. The patient was also known to have a malignant mediastinal tumor. This had been an incidental finding in a routine chest x-ray done in a medical unit where the patient had presented with a persistent cough (Fig 1). Subsequently a CT of the chest was performed and a tumor in the anterior mediastinum was confirmed (Fig 2). The histology of the CT guided biopsy

revealed a malignant epithelial peripheral nerve sheath tumor. He was treated with four cycles of chemotherapy by the oncologist. A biopsy taken from the painful neurofibroma of the current presentation once again revealed a neurofibroma undergoing malignant transformation. A palliative wide local excision of the lesion was planned.



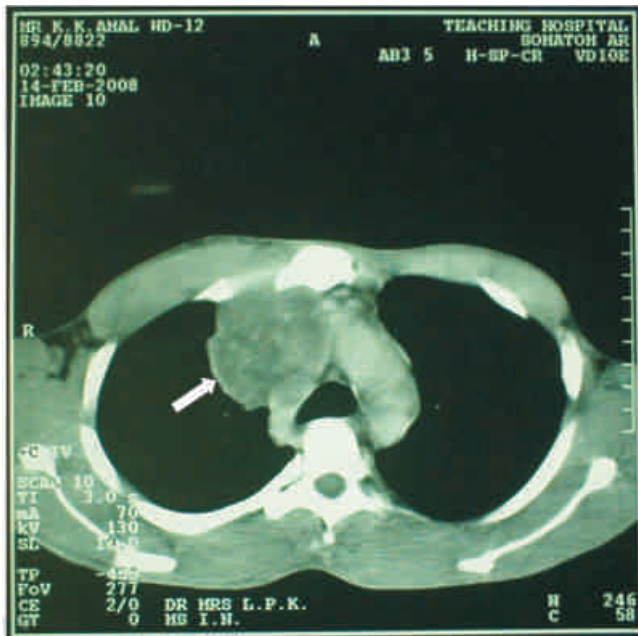


Figure 1: Mediastinal tumor on plain x-ray chest

Figure 2: CT Scan of chest of the same patient. White arrow shows mediastinal tumor

The patient had a general anaesthetic for his surgery which was uneventful. At the recovery following surgery, he became acutely short of breath. His face and the neck started to swell rapidly and the oxygen saturation dropped. As he could not be ventilated with the mask, a decision was made to intubate him. However, all attempts at intubation failed and the patient suffered a respiratory arrest. An emergency percutaneous mini tracheostomy attempted at this stage was successful. As the patient could now be ventilated, he was taken back to the operating room where the surgeon performed a formal tracheostomy. The patient was then transferred to the intensive care unit (ICU) for ventilation. He was reviewed by the oncologist again and was treated with radiotherapy. During the course of his treatment the swelling of the face and neck completely disappeared. He was spontaneously breathing through the tracheostomy which was still in situ. Decannulation was done three weeks later before his discharge from the ICU.

DISCUSSION

SVC obstruction is a serious condition which can be

caused by a benign or malignant disease. In one case series malignancy was by far the most common etiology². The most frequent malignancies are bronchial carcinoma followed by non-Hodgkin lymphoma. Benign lesions are usually reported due to thrombosis related to central venous catheters¹. It has also been reported due to other causes such as a primary tumor of the SVC, rupture of a bronchial or innominate artery, aneurysm or aortic dissection. Essentially any mediastinal mass may compress or invade the SVC.

With slowly progressive obstruction of the SVC, adequate collaterals may develop. In acute obstruction there is no time for their development and symptoms develop rapidly. The most common symptoms are facial and neck swelling, bilateral upper extremity swelling, headache and shortness of breath.

In the assessment of the patient the presence or the absence of venous thrombosis must be determined. Ultrasonography is useful for excluding thrombosis. If the SVC cannot be directly imaged its patency may be indirectly determined with normal wave forms in the subclavian and brachiocephalic veins. In patients with a suspected mediastinal mass CT of the thorax should be performed³. Obtaining a tissue diagnosis by means of a percutaneous biopsy under CT guidance is the first step in the treatment of patients with SVC syndrome caused by a mediastinal mass. Patients with malignant obstruction of the SVC have a short life expectancy. The goal in treating these patients is to provide relief of symptoms. Surgical treatment in this patient population is extremely limited. Radiation or chemotherapy is the main mode of treatment. The decision to use either or both is made on the basis of histological characteristics of the tumor. Patients have improved with both modalities with response rates greater than 70%⁴. SVC stents have been used in patients in whom the condition failed to respond to traditional therapy or in whom symptoms recurred after such therapy. Relief of symptoms has been demonstrated in more than 90% of patients with stents^{5,6}.

Patients with a benign lesion often have a normal life expectancy and are treated with angioplasty or stent placement. Long term patency of SVC stents has not been proved. Surgical bypass of the SVC obstruction is extremely invasive and requires a high level of expertise, however, good patency rates have been reported⁷. Those with central venous thrombosis should receive anticoagulation for 3-6 months because they can have significant pulmonary embolization. A timely diagnosis and appropriate treatment will result in a favorable outcome.

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LETTER TO EDITORS

Assalamu alikum

I am Dr. Jamal Tashkandi an anaesthetist from Saudi and I have received your anaesthesia journal recently which I would like to thank you and the good Doctor who send it to me.

Little remark on the sign which carries your journal name (PAIC), at the bottom of it there is an Arabic writing which I would like to comment on if you may allow me, I believe it is a part of (AYA) from the holly Quran , so if it is it should say

الذي علم بالقلم

sorat al alag, AYA 4

while what is written

الذي يعلم بالقلم

the highlighted red colour letters are the spelling mistakes

Wish you all the best

Yours sincerely,

Dr. Jamal Tashkandi, FANZCA

Editor's Reply

My respected Dr Tashkandi,

Many thanks and Jazakallah for the correction. In fact only a few days back one of my friends pointed out the same mistake. He said that if the phrase is meant to be an Aya from Holy Quran, it should have been exactly as you have quoted in your e-mail. If not, the meanings of the phrase are quite meaningful (but without reference to Holy Quran). The mistake shall be corrected in the next issue of the journal.

Thanks once again.

Editor