

SVC Obstruction

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Superior vena cava syndrome is an uncommon but serious complication that occurs in palliative care patients with lung cancer or metastases. As a tumour compresses superior vena cava a patient suffers from increasing swelling and discomfort in the arms and face and eventually dyspnoea and stridor develops as laryngeal oedema worsens. Treatment with steroids and radiotherapy or stenting can significantly improve symptoms but longer term the develop of SVC obstruction portends a poor prognosis.

Epidemiology

About 1 in 20,000 people per year develop an SVC obstruction in the United States.¹⁾ It is usually caused by cancer either causing extrinsic compression on the SVC or invading directly into it. The most common causes are:

- Primary lung cancer
- Lymphoma
- Metastases (e.g. breast cancer)
- Iatrogenic causes (e.g. central lines)

Clinical features

As pressure distal to the SVC rises, patients develop a feeling of fullness in the head and facial and upper limb swelling. This generally develops over a number of days. Pemberton's sign might be positive.

In addition to facial and arm oedema, there is laryngeal oedema and a tight feeling in the chest and neck, that may be associated with a stridor and/or wheeze and dyspnoea.

Pleural effusion (chylous) occur in many patients with SVC obstruction, probably due to reduced lymphatic flow. Effusions usually improve and resolve when the SVC obstruction is treated.

Investigations

Imaging

Investigation of choice is imaging with a CT venogram.



Management and Prognosis

In patients for whom active treatment is appropriate urgent treatment with steroids + a more definitive intervention to reduce the blockage is indicated. There will be times where aggressive active therapy seems less appropriate however and in these cases symptomatic treatment with steroids, opioids and benzodiazepines is appropriate.

Active treatment

Initial treatment is with high dose steroids, for example:

Dexamethasone 16mg SC daily.

When a tumour compresses and invades the SVC there is often associated thrombus in the SVC. It is unclear if treatment with anti-coagulation is beneficial but it is reasonable to consider therapeutic dose enoxaparin. Some have reported positive effects of using catheter-directed fibrinolytics such as urokinase.

After initial treatment with steroids, urgent treatment to remove the blockage should be considered. The options for this include:

- SVC stent insertion by an interventional radiologists
- Radiotherapy
- Chemotherapy

A combined approach of stent insertion plus radiotherapy approach makes good logical sense. Urgent chemotherapy may be appropriate in some cases such as when the SVC obstruction is due to newly diagnosed small cell lung cancer or diffuse large B cell lymphoma.

Symptomatic treatment

The feeling of fullness and headache and dyspnoea and stridor can be very distressing. Steroids will often help reduce these symptoms but of course this comes with its own set of problems if high dose steroids are continued for weeks or months. Many patients require benzodiazepines and opioids for the distress that symptoms cause.

[oncology](#), [respiratory](#), [condition](#), [complication](#), [textbook](#)

¹⁾ Ronny Cohen et al. Superior vena cava syndrome: A medical emergency? Int J Angiol. 2008 Spring; 17(1): 43-46.

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