

Superior vena cava obstruction

Superior vena cava obstruction (SVCO) is generally caused by extrinsic compression by metastases in upper mediastinal lymph nodes. It may also be caused by tumour infiltration or thrombus. 95% of SVCO is caused by malignancy (80% due to lung cancer). Venous thrombosis can cause an acute onset of symptoms.

Symptoms

- Dyspnoea
- Neck and facial swelling
- Head fullness / headache
- Trunk and arm swelling
- Cough
- Dysphagia

Signs

- Thoracic vein distension 65%
- Neck vein distension 55%
- Tachypnoea
- Plethora 15%
- Facial / conjunctival oedema 55%
- Central / peripheral cyanosis 15%
- Arm oedema 10%
- Vocal cord paresis 3%
- Horner's syndrome 3%

Investigations

- Assess for hypoxia
- CXR – bulky mediastinal shadow, pleural/pericardial effusion
- CT chest
 - assess level of obstruction
 - differentiate between thrombosis and tumour
 - differentiate between compression and infiltration
- Venous angiogram
 - discuss with oncology and radiology consultant
- Blood tests
 - blood gases
 - FBC, U&E, LFT. Clotting screen. Serum calcium. Uric acid
 - tumour markers: Beta HCG, AFP, LDH, CEA, CA15-3
- Histology
 - it is necessary to have histological confirmation before starting treatment. Urgent discussion must be carried out with oncology, radiology and thoracic surgery consultants regarding the optimal way to obtain histology.
 - CT guided core biopsy: 90-100% positive histology*
 - Mediastinal biopsy: 90-100% positive histology*
 - Bronchoscopic biopsy: 60% positive histology*
 - Sputum cytology: 40% positive histology*



Management

- **SVCO with severe symptoms is an emergency.**
- Nurse the patient in propped up position.
- Prescribe Dexamethasone 16 mg od PO or 8mg b.d PO
- If unable to tolerate oral medication prescribe Dexamethasone 16mg CSCI or IV /24 hours.
- Analgesics as required but avoid oversedation
- Self expanding metal stent
In patients with significant SVCO a stent can be introduced into the SVC via a brachiocephalic or femoral vein. This may be done while waiting for biopsy report and is especially useful in those patients who have tumours which are not radiotherapy or chemotherapy sensitive. Patients are anticoagulated with heparin before stent insertion. This treatment may also be considered for patients who fail to improve with radiotherapy and steroids or in whom SVCO recurs. Discuss with oncology consultant and interventional radiologist.
- Urgent oncology referral:
 1. Radiotherapy to the mediastinum is the treatment of choice for tumours which are sensitive to radiotherapy e.g. non-small cell lung cancer (75-90% respond: response often begins within 72 hours)
 2. Chemotherapy may be used for tumours that are sensitive eg small cell lung cancer, lymphomas, germ cell tumours.

Follow up

- Patient may need to continue on oxygen.
- Dexamethasone needs to be reduced gradually under medical supervision.

References

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