

## **Superior vena caval obstruction**

Superior vena caval obstruction results from the compression of the superior vena cava (SVC) by either a tumour arising in the right main or upper lobe bronchus or mediastinal lymphadenopathy (usually right paratracheal or precarinal). Initially it is diagnosed clinically in the presence of neck swelling and distended veins over the anterior chest wall. There may also be swelling of one or both arms and symptoms of dyspnoea and headache. Malignancy is the commonest cause (>90%), most typically lung cancer, lymphoma, metastatic disease, mesothelioma and thymoma.

The initial assessment includes:

Full history including details of known malignancies and their treatment, the development of new or worsening respiratory symptoms, arm swelling and headaches. Comorbidity. Medication including use of and contraindications to steroids, anticoagulation.

Examine for distended external and internal jugular veins, collateral veins, facial, arm and neck swelling, and conjunctival redness.

The investigation of choice is a contrast enhanced spiral or multislice chest CT. This defines tumour extent, and often the site of occlusion or stenosis and the extent of any thrombus formation. Impending SVCO can be an incidental finding.

Treatment is either purely symptomatic or directed at the underlying cause and is dependent on the presentation. The treatments most frequently used are radiotherapy, stent insertion and chemotherapy.

### **New presentation with no known malignancy**

- Assess symptoms (as above).
- Ensure that the patient has no life threatening symptoms (eg associated stridor), and is fit enough for treatment.
- If no contraindication to steroids commence Dexamethasone 8mg bd, with GI cover for 48-72 hours. If symptoms improve gradually reduce the dose, dependent on outcome of CT scan/pathology. If there is no improvement stop.
- CT scan of thorax (unless recently done)
- If there is palpable lymphadenopathy a fine needle aspiration can be performed. If not discuss with respiratory physician to determine whether tissue can be obtained from urgent bronchoscopy.

If not suitable for bronchoscopy or no tissue obtained then discuss with interventional radiology to consider obtaining tissue by CT guided biopsy. They can also assess whether the patient would be suitable for SVC stent insertion.

Stent insertion should be considered if there has been a rapid onset of symptoms, or if there is likely to be a delay in obtaining histology or if the patient has not responded to steroids.

### **New presentation with known malignancy**

- Assess symptoms (as above).
- If no contraindication to steroids commence Dexamethasone 8mg bd, with GI cover for 48-72 hours. If symptoms improve gradually reduce the dose.

**1. Diagnosis of lymphoma or small cell.** These tumours respond well to both chemotherapy and radiotherapy, however primary treatment is usually with chemotherapy. If previous chemotherapy discuss with appropriate consultant/haematologist/oncologist as they are more likely to be considered for further chemotherapy or radiotherapy rather than stent.

**2. Cancer diagnosis other than small cell carcinoma or lymphoma.** The primary treatment is likely to be palliative mediastinal/chest radiotherapy or stent insertion.

- If the patient had previous radiotherapy to chest/ mediastinum then this is unlikely to be repeated and stent insertion should be considered. This should be discussed with interventional radiology.

- If the patient has not had previous radiotherapy the case should be discussed with an oncologist. Stent insertion may need to be considered depending on rapidity of onset of symptoms.

- Questions to be able to answer that may influence whether the patient should be considered for SVC stent or radiotherapy are:

- Symptoms and rapidity of onset (do symptoms include stridor)

- Type of cancer (stage and date of diagnosis and treatment that they have had for this)

- Is there a relative contraindication for radiotherapy? Previous chest/mediastinal radiotherapy?

- Is the patient able to lie reasonably flat?

- Performance status

- Availability of stenting

- Have they previously had chemotherapy or surgery?

- Date and result of most recent CT scan of thorax (does this confirm tumour in right lung or mediastinal nodes).

### **Recurrent SVCO**

If lymphoma or small cell carcinoma: discuss with consultant/haematologist/oncologist about further chemotherapy or palliative radiotherapy before considering stent insertion.

For all other cancers: if the patient has already had radiotherapy for SVCO then discuss with the interventional radiologist to consider either insertion or replacement of stent.

### **Anticoagulation and Stent insertion**

Discuss with interventional radiologist whether there was thrombus present. If so consider anticoagulation with low molecular weight heparin.

### **Dexamethasone**

If no contraindication to steroids commence Dexamethasone 8mg bd, with GI cover for 48-72 hours. If there is no improvement the steroids should be discontinued.

If symptoms improve the steroid dose should be gradually reduced, dependent on the treatment decision.

Patients who are to receive radiotherapy or chemotherapy should be given instructions to reduce the dose and discontinue ( probably over 2-3 weeks).

Patients who have a stent inserted should be able to discontinue steroids.