



Superior Vena Cava Syndrome

Rarely the emergency it looks like · Get the tissue diagnosis before the steroids, unless the airway is threatened

TISSUE FIRST

steroids can mask lymphoma

RECOGNIZE IT *the obstruction is usually subacute, and collaterals have had time to form*

WHAT YOU SEE

Facial and neck swelling, worse on waking and on bending forward · arm swelling · distended, non-pulsatile neck and chest wall veins · plethora and conjunctival edema · breathlessness, cough and hoarseness. **Pemberton's sign**: raising both arms above the head produces facial congestion within a minute.

THE FEATURES THAT MEAN URGENCY

Stridor, or any airway compromise — laryngeal edema is the genuine emergency · **confusion, headache or visual change**, suggesting cerebral edema · **hemodynamic instability**. **Most patients have none of these**, and in that majority there is time to obtain a diagnosis properly.

THE CAUSES

Malignancy remains the commonest: lung cancer, particularly small cell and right-sided, and **lymphoma**. But **intravascular devices are a fast-rising cause** — central lines, ports, pacing and defibrillator leads — producing thrombotic obstruction, which is managed quite differently from tumor compression. Also fibrosing mediastinitis and prior radiotherapy.

THE PRINCIPLE THAT MATTERS MOST *this is where the harm is done*

Point	Detail
Do not give empirical steroids or radiotherapy before tissue	Corticosteroids partially treat lymphoma and can render the biopsy non-diagnostic, and mediastinal radiotherapy does the same. A patient may then lose the chance of a precise diagnosis and of curative-intent chemotherapy. In a stable patient, the diagnosis comes first — always.
The exception	Airway compromise, stridor or cerebral edema justify immediate treatment without waiting. Endovascular stenting is generally preferred to steroids even then , because it relieves the obstruction fastest and does not compromise histology.
It is usually not a true emergency	The older teaching that SVC obstruction demands treatment within hours has been superseded. The obstruction develops over weeks and venous collaterals form , so death from the obstruction itself is rare. Urgency comes from the airway and from the underlying tumor , not from the vena cava.
Grade the severity to set the urgency	Severity scales run from asymptomatic or mild edema , through moderate disease with visible swelling and cough, to severe with cerebral or laryngeal edema and life-threatening with obtundation or hemodynamic collapse. The grade, not the CT appearance, decides how fast you must act — extensive-looking obstruction in a comfortable patient does not need an overnight intervention.
About a third have no known cancer	SVC obstruction is frequently the presenting feature of a new malignancy . That is precisely why establishing the histology matters so much — the treatment differs completely between small cell carcinoma, lymphoma, germ cell tumor and thrombosis.

WORK IT UP *image, then get tissue by the least invasive adequate route*

- Contrast-enhanced CT of the chest is the key investigation.** It confirms the obstruction, defines the **level and extent**, distinguishes **extrinsic compression from intraluminal thrombus**, maps collaterals, and usually identifies the underlying mass and a biopsy target in one study.
- Get tissue by the least invasive adequate route**: sputum or pleural cytology, an accessible peripheral node, endobronchial ultrasound-guided sampling, a CT-guided core biopsy, or mediastinoscopy. **Send a core rather than a fine-needle aspirate wherever lymphoma is plausible** — architecture is needed for classification, and a cytology specimen commonly forces a second procedure.
- Supportive measures while you wait**: **sit the patient up**, give oxygen for symptomatic relief, and provide analgesia and anxiolysis. **Use the lower limbs for intravenous access**, since infusions into an obstructed upper-body vein reach the circulation unreliably. **Diuretics and steroids are widely given but have a weak evidence base**, so do not let them substitute for a definitive plan.
- Treat the underlying disease**. **Small cell lung cancer, lymphoma and germ cell tumors respond quickly to chemotherapy**, which frequently relieves the obstruction without stenting. **Non-small cell lung cancer** is generally treated with radiotherapy or a stent.
- Endovascular stenting gives the fastest relief** — usually within 24 to 72 hours — and is preferred for **severe symptoms, for tumors unlikely to respond quickly, and after failed or exhausted radiotherapy**. It does not interfere with subsequent histology or treatment. **If the cause is device-related thrombosis**, treat with **anticoagulation**, and consider catheter-directed thrombolysis or line removal.

TWO THINGS TO GET RIGHT *the steroid question, and the line you may not need to pull*

STEROIDS: ONLY WITH A REASON

Do not give them reflexively. They can render a lymphoma biopsy non-diagnostic and cost the patient a precise diagnosis. **When genuinely indicated** (airway compromise, cerebral edema, or a known steroid-responsive tumor already diagnosed), **dexamethasone 4 mg every 6 h** is typical. **If tissue is still outstanding, get the biopsy first** unless the airway will not wait.

CATHETER-RELATED OBSTRUCTION

Now a fast-rising cause, given ports, PICCs and pacing leads. **Anticoagulate**, and **the line does not automatically have to come out**: a functioning, still-needed catheter can often stay if symptoms settle on anticoagulation. **Remove it if it is infected, no longer needed, malpositioned, or symptoms persist**. Anticoagulate for at least 3 months, and for as long as the line stays in.

DO NOT ANCHOR *the mimics and the parallel problems*

CONSIDER INSTEAD

Cardiac tamponade and constrictive pericarditis raise venous pressure with a similar look but come with **hypotension and pulsus paradoxus**. **Right heart failure** gives a pulsatile, waveform-bearing JVP, whereas SVC obstruction gives distended veins with **no discernible pulsation**. Also consider **angio-edema, nephrotic syndrome and bilateral internal jugular thrombosis**.

WHAT ELSE TO LOOK FOR

A mediastinal mass rarely acts alone. Check for **pericardial effusion and tamponade, pleural effusion, and tracheal or esophageal compression**. Ask about **Horner's syndrome and hoarseness**, which localize disease and change staging. **Anticipate tumor lysis** once chemotherapy starts in bulky lymphoma or small cell disease, and **discuss anesthetic risk before any procedure**, since a large mediastinal mass can cause cardiovascular collapse on induction.

PEARLS & PITFALLS

- Do not start steroids before the biopsy** in a stable patient. A masked lymphoma can cost the patient a curative diagnosis.
- It is usually not a hyperacute emergency**. Stridor and cerebral edema create the urgency, not the obstruction itself.
- Send a core biopsy, not cytology**, whenever lymphoma is plausible — architecture is required to classify it.
- Use lower limb venous access**. Drugs given above an obstruction arrive slowly and unpredictably.
- Check for a line or pacing lead**. Device-related thrombosis is an increasingly common cause and is anticoagulated, not irradiated.
- Warn the anesthetist about the mediastinal mass**. Induction can precipitate airway and cardiovascular collapse.

References: ESMO and NCCN guidance on oncological emergencies and superior vena cava obstruction · systematic reviews of stenting, radiotherapy and chemotherapy for SVC obstruction · national acute oncology service standards.

Educational aid; verify against local acute oncology, interventional radiology and thoracic protocol and patient factors.

