Etiology of SVC Syndrome and its Role in Determining Best Treatment Approach
A Case Report

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INTRODUCTION

- Obstruction of the Super Vena Cava (SVC) can result in symptoms, such as facial plethora and swelling.
- It can be due to a variety of underlying causes besides lung malignancies.
- The rates of underlying causes have which have changed over time.
- The underlying etiology is used to determine the best management strategy.

OBJECTIVE

- To discuss the role of etiology in determining the best initial treatment for SVC syndrome (SVCS).
- To outlines a unique management approach for a patient that represents the changing demographics of SVCS causes.

CASE PRESENTATION

- A 73-year-old male with end-stage renal disease (ESRD) and metastatic carcinoma of the colon presented with swelling of the jaw, neck, and tongue.
- CT scan showed chronic thrombosis of the SVC and bilateral brachiocephalic veins.
- He had been receiving hemodialysis and chemotherapy through central venous catheters (CVCs) that transversed the SVC and terminated in the right atrium, resulting in venous stasis.
- Treatment involved double-barrel stent reconstruction of the SVC with temporary repositioning of the chemotherapy port catheter and exchange of the hemodialysis catheter.
- He experienced relief of symptoms and was able to continue his hemodialysis and chemotherapy appointments.

DISCUSSION

- For cases of SVCS due to underlying lung malignancies, which has been and remains the most common cause, endovascular stenting is reserved as a palliative measure when treatment of a refractory malignancy fails to resolve the obstruction and for when symptoms are severe because most cases are not life-threatening.
- However, increased use of CVCs has caused a rise in SVCS due to thrombosis, for which stenting is the first-line treatment. Rare causes of SVCS that may require surgical correction include mediastinal fibrosis and thymomas.
- Of the few previously published case reports that depict bilateral SVC stenting and temporary repositioning of a CVC, they all describe cases due to lung malignancies or mediastinal fibrosis.
- Outlining this case presentation can increase awareness of thrombotic stenosis as an increasingly common cause of SVCS, which may occur in patients with a broader range of underlying conditions, ages, and life expectancies and require a wider array of physicians to be knowledgeable of management strategies.
- While stenting technology has improved dramatically since its inception, follow-up on stent patency will help determine if expanding treatment for lower acuity cases is beneficial.

Etiology	Current Proposed Treatment [3]
Lymphoma	Chemoradiation
Small-Cell Lung Cancer (SCLC)	
Germ-cell Tumor	
Non-Small-Cell Lung Cancer (NSCLC)[5]	
Thymoma	Surgery with reconstruction
Mesothelioma	Stenting considered first line
Mediastinal Fibrosis [4]	
Thrombosis from Indwelling CVCs[2]	

Urgent stenting required if severe symptoms[6]

Figure 1: Etiology and Most Common Treatment Strategy

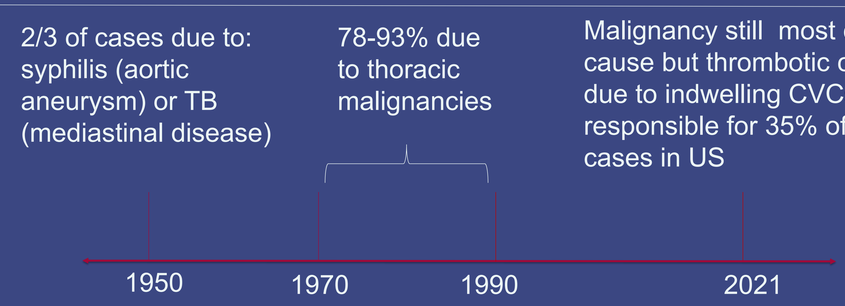


Figure 2: Etiology of SVCS change with Time

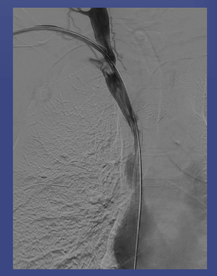
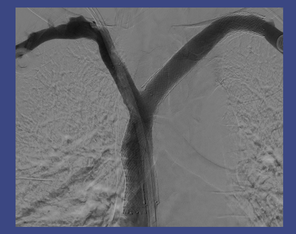


Figure 3: Stenosis of SVC

Figure 4: Patency of SVC following deployment of bilateral kissing stents with replaced CVCs



CONCLUSION

- Endovascular stenting is the treatment of choice for thrombotic causes of SVCS, which is becoming more common due to the increased use of CVCs.

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