University of Vermont
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Case Report: Superior Vena Cava Syndrome Causes Retropharyngeal Effusion after Tunneled Central Catheter

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CASE DESCRIPTION

A **57-year-old female** presented to her local emergency department with a 48-hour history of **atraumatic neck edema, dyspnea, and dysphagia**. Two days prior, a hemodialysis tunneled catheter was placed in the right internal jugular vein (IJ). Past medical history notable for autosomal dominant polycystic kidney disease with end stage renal disease (ESRD).

INTRODUCTION

- **Superior Vena Cava (SVC) Syndrome** results from malignancy 70% of the time. **Intravascular nidus**, like pacemakers and central catheters, is the **second most common** etiology **with a rising incidence of up to 40%**
- **Rare presentation:** SVC syndrome causing chronic, symptomatic, non-infectious retropharyngeal effusion in the setting of central tunneled catheter placement

TIMELINE

Community hospital (2 days prior)

- Hemodialysis tunneled catheter placed in right internal jugular (IJ) vein

Initial presentation

- Atraumatic neck edema, dyspnea, dysphagia
- Physical exam reveals ecchymosis and facial swelling around catheter site
- Hemoglobin 8.7, Hematocrit 27.2, White Blood Cells 4.53
- CT neck with ~6cm retropharyngeal fluid collection
- Normal flexible laryngoscopy
- Otolaryngology and interventional radiology (IR) consulted

Admission

- Patient admitted for close airway monitoring, short course of IV Decadron, and increased anticoagulation dosing
- Repeat CT demonstrated near resolution of fluid collection (1.4 x 0.6 x 1.5 cm)

Re-Admission (3 months later)

- Interval CT neck and chest (Figures 1,2) demonstrated persistent large retropharyngeal fluid collection (6.2 x 1.3 x 3.5 cm), induration and thickening of the platysma, and small caliber SVC with enlargement of collaterals to the superior neck jugular system
- DDX: SVC syndrome secondary to catheter-related thrombosis causing non-infectious (presumed transudative) retropharyngeal effusion
- IR performed bilateral central venography demonstrating occlusion of the SVC with numerous collaterals in the neck and upper chest
- SVC recanalized and stented
- Tunneled common femoral line placed for future hemodialysis treatments
- Full resolution of facial plethora, neck swelling , and chronic retropharyngeal fluid collection

IMAGING & FINDINGS

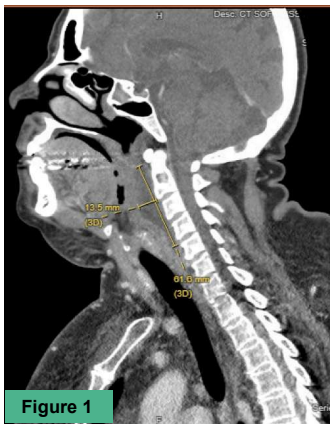


Figure 1

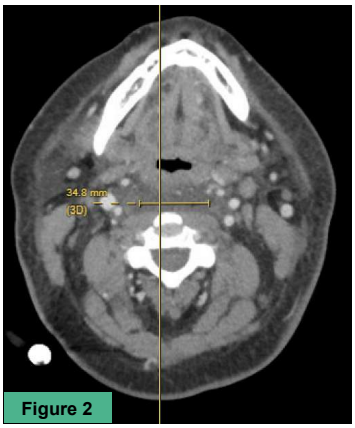


Figure 2

Figure 1. Computed Topography (CT) Neck Sagittal View from re-presentation (three months after initial presentation). Chronic retropharyngeal effusion measuring 6.2 x 1.3 x 3.5 cm in size with low-density appearance and no rim enhancement.

Figure 2. Computed Topography (CT) Head Axial View showing retropharyngeal fluid collection.

DISCUSSION

- SVC syndrome results from obstructed venous return and can present with retropharyngeal effusion or abscess. Underlying etiologies can be malignant (most common) or benign, with increasing incidence of intravascular nidus-related causes. Chronic symptomatic effusions are rare.
- **Clinical features**
  - Facial, neck, and upper extremity swelling, distended veins, dyspnea, dysphagia, and in severe cases airway compromise
- **Retropharyngeal (RP) imaging findings**
  - **Infectious RP Abscess**: initially phlegmonous or cellulitic, can develop a rim-enhancing appearance in the setting of infectious clinical findings.
  - **Non-infectious RP Effusion:** non-enhancing appearance, low-density fluid collection may be visualized, consistent with the transudative nature of the effusion. Prominent collateral vessels may be seen, as they can become engorged and tortuous in SVC syndrome.
- **Management**
  - Increasing role for **endovascular therapy** in treatment of SVC
    - Resolves associated retropharyngeal fluid collection with rapid symptomatic relief

KEY POINT

A chronic retropharyngeal effusion in SVC syndrome occurs secondary to venous congestion and transudative fluid shift. Consequently, surgical intervention without addressing the underlying etiology is not therapeutic and introduces potential morbidity and mortality risks.

REFERENCES

Available upon request.

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