

PURPOSE

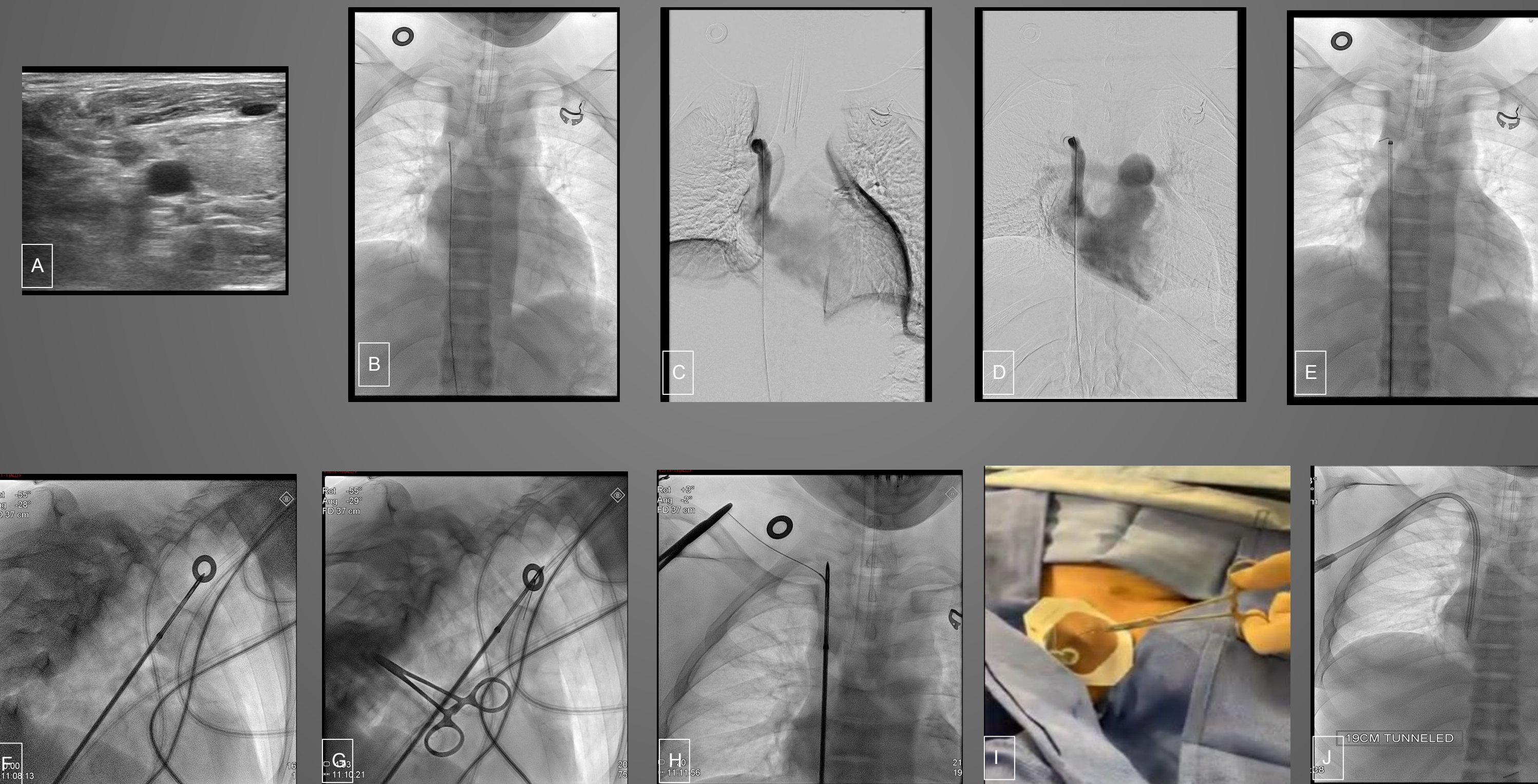
To highlight the importance of preserving access in patients with chronically occluded central veins. We will illustrate a case demonstrating the successful use of the Surfacer, a novel venous recanalization and catheter system to provide access for a patient with chronic thoracic central venous occlusion (TCVO).

MATERIALS AND METHODS

This is a case presentation of a 26 year old female with a past medical history of systemic lupus erythematosus and end stage renal disease on chronic catheter dependent hemodialysis who presented with bacteremia requiring tunneled right internal jugular (RIJ) catheter removal. Computed tomography (CT) venous phase imaging demonstrated TCVO with occlusion of the superior vena cava (SVC) to the level of the azygos vein. Given the patient’s age, the decision was made to reattempt thoracic venous access to preserve alternative venous access points (femoral, hepatic, lumbar, etc.)

MATERIALS AND METHODS

- A radiopaque skin marker is placed over the internal jugular vein (image A)
- The microsheath is advanced to the obstruction (image B)
- Diagnostic venography demonstrates occluded SVC with reflux of contrast into the azygos vein, bilaterally occluded brachiocephalic veins and bilateral internal jugular veins. (image C and D)
- Introducer sheath advanced to the level of obstruction over .035 guidewire (image E)
- Surfacer device advanced from the SVC (level of azygos vein) through the obstruction into the proximal right internal jugular vein with sharp recanalization. (image F)
- .018 nitinol needle was deployed laterally with 30 degree cranial obliquity towards the skin marker and advanced through fascia, muscle and skin (images G, H, I)
- Peel away sheath placed over the nitinol needle
- Tunneled catheter placed using standard technique (image J)



RESULTS

Utilizing the Surfacer device through right femoral vein access, sharp recanalization of the SVC to the RIJ was performed with inside-out deployment of a nitinol wire through the skin of the right neck. A tunneled dialysis catheter was placed over that wire and advanced into the cavoatrial junction.

CONCLUSION

There is significant increased morbidity associated with chronic TCVO and preserving thoracic venous access both decreases costs and improves long term outcomes for catheter dependent dialysis patients. The Surfacer device is a novel method for preserving thoracic venous access. Alternative treatment of TCVO is bypass, or endovascular stenting, both of which are more invasive than the illustrated inside-out approach. Using an inside out approach preserves viability of other central venous access sites.

REFERENCES

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