DELAYED MALPOSITION OF SPLIT TIP TUNNELED CUFFED CATHETER

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BACKGROUND

- Malposition complicates approximately 5% of central venous catheter placements.[1]
- Commonly related to abnormal anatomy, congenital or acquired (thrombosis &/or stenosis).
- Malposition is more likely to occur *during* placement of a split-tipped catheter[1]
- We are reporting a case of malposition of split-tip tunneled cuffed catheter (TCC) *after 2 years* of insertion with retrograde folding of the arterial tip

CASE PRESENTATION

- 66 y male, history of diabetes, hypertension and CKD- Stage VD (diabetic kidney disease) initiated on hemodialysis (HD) via right IJV TCC 2 years ago
- Presented with sub-optimal blood flows during last 2 dialysis sessions and partial extrusion of the TCC
- The cuff as well as part of stem of the catheter was out

FIG. 1: On X-ray chest malposition of tip of the catheter was seen

Previous chest CT scan (done for unrelated reasons 3 months ago) was reviewed. Fig. 2 (scout film) and Fig. 3 (reconstructed lateral image) showed normally placed TCC, with both tips in right atria (red circle).

FIG. 2

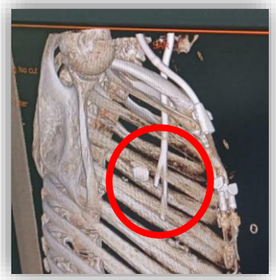

FIG. 3

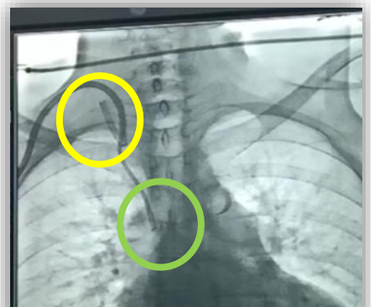

FIG. 4: In cathlab, fluoroscopy revealed that 1 tip had folded onto itself, going into the Right IJV (yellow circle) and the other tip was in SVC (green circle)

INTERVENTION

- Dye injected through the venous port was seen exiting freely from the tip in SVC without any filling defect
- Dye injected via arterial port exited from the misplaced tip in right IJV with filling defects.
- This TCC was gently pulled out under fluoroscopic vision without much resistance.
- Repeat right TCC insertion was done. On follow-up, there are good blood flows on dialysis

DISCUSSION

- Delayed mechanical complications of TCC insertion are fibrin sheath formation, catheter occlusion, catheter impingement or fragmentation, damage to the port chamber and malposition.[2]
- Symmetrical tip and step-tip catheters have lesser risk of malposition than split tip catheters.[2]
- To our knowledge this is the first report of tip folding onto itself with use of split tip catheter

REFERENCES

1. Wang L et al. Malposition of CVC: Presentation and Management. Chin Med J (Engl). 2016;129(2):227 234.
2. Machat et al. Complications of central venous port systems: a pictorial review. Insights Imaging 10, 86 (2019).