Retrograde migration within subcutaneous of totally implanted vascular access

FOURNIER IAN, DUBUIS CELINE, HALLER CLAUDE, DANZER DANIEL
Service de chirurgie vasculaire, thoracique et viscérale
Hôpital du Valais (RSV), Sion

Introduction:
Spontaneous fracture or distal intravascular dislodging of the tip of implantable port catheter is an uncommon but widely described complication. We report one case of progressive retrograde extravascular catheter tip migration and review the current literature in order to understand the underlying mechanism of this displacement.

Method:
A 63 years old female showed, 5 months after implantation of a port chamber catheter via surgical venous cut down of the left cephalic vein, a progressive retrograde migration without clinical consequence until complete exteriorization leading to a non functional catheter with subcutaneous contrast filling on the venography. [Fig 1 and 2]
Surgical explantation didn’t show any mechanical explanation.

Results:
Catheter migration occurs with catheter tip migration remaining in the vascular compartment (secondary displacement) but to our actual knowledge there is no description of retrograde total venous exteriorization. Technical amelioration with silicone catheter being more flexible and less thrombogenic might promote their displacement because of non tissular integration. Cephalic or subclavian placement might be followed by minimal but significant retraction of the catheter during abduction with insufficient propulsion during adduction of the shoulder because of friction forces at the vascular entry site leading to significant retraction. [Fig 3a-b]

Conclusion:
Explanation for intravascular migration such as coughing, sneezing, elevation of intra thoracic pressure by Vasalva or even “jetting effects” have been suggested 1-3. If chamber-vascular insertion site distance modification during abduction/elevation maneuver of the shoulder is the trigger effect of extravascular migration, jugular access may prevent these secondary displacements. There is still place for technical or material improvement for indwelling totally implantable catheter.

Fig 1: Initial catheter tip placement (arrow)  Fig 2: Subcutaneous winded up catheter with contrast extravasation

Fig 3a-b: catheter subcutaneous displacement during shoulder abduction/elevation (arrow)

1. C.-Y. Wu et al. Risk factors and possible mechanisms of Intravenous Port Catheter Migration. EJVES 44(2012)82-87