

If SC central line ends up in IJ vein ?

It is always a possibility that central venous catheter placed in subclavian (SC) vein may take path upward and travel in internal jugular (IJ) vein. Incidence is about 5.4% and does not vary with side of insertion or with the head position during the procedure ¹.

First 2 preventive measures,

1) One study clearly showed that if you direct 'tip of J-wire' caudally, the relative risk for cannulating the ipsilateral internal jugular vein is low ².

OR

2) After cannulating subclavian vein, apply little pressure at ipsilateral IJ vein while passing wire. If wire stop threading or resistance felt, it means you need to pull back wire for few centimeters (making sure you don't loose vein cannulation) and thread again.

Alternatively, after you place subclavian catheter, before applying sutures there are 2 ways to make sure you are not in IJ vein.

1) Hook central line to central venous pressure (CVP) measurement. Apply firm pressure over the ipsilateral IJ vein in the supraclavicular region for approximately 10 seconds. Quick change in transducer pressure and waveform, like CVP increased by 5 mm Hg (fictitious rise in CVP) or flattening of waveforms indicates jugular misplacement of the catheter tip. Its called Internal Jugular Vein Occlusion Test ³.

OR

2) Flush about 3 -5 cc of saline and put your stethoscope or even finger on ipsilateral IJ vein to hear or feel the bruit/flow.

In case, you don't do above maneuvers while inserting SC central line and CXR shows IJ placement, pull central venous catheter back upto 4-5 cm from puncture point and try above maneuvers. Another trick you can apply in case you have to pull back catheter and pass over J-wire again - thread J-wire only partially till you are sure you are in vein, pull back catheter completely (preferably use new catheter to avoid risk of infection) , slightly curve the tip of catheter downwards (like S tip PA-catheters) and pass with little twist.

References: Click to get abstract/article

1. Misplacement of subclavian venous Catheters: Importance of head position and choice of puncture site. BJA1990; 64: 632-33
2. Direction of the J-tip of the guidewire, in Seldinger technique, is a significant factor in misplacement of Subclavian vein catheter: A randomized, controlled study - Anesth Analg 2005;100:21-24
3. Internal Jugular Vein Occlusion Test For Rapid Detection Of Misplaced Subclavian Vein Catheter - The Internet Journal of Anesthesiology. 2005. Volume 9 Number 1