A guide wire is inserted, and the CVC is introduced in the vein after dilating the skin. A chest radiograph is used to confirm the position of catheter after the procedure” Nair et al (2019).

Extract:

Central venous catheter (CVC) placement is a common procedure done in the practice of anesthesia and critical care medicine for several indications. The right internal jugular vein (IJV) is usually preferred as it has a straight course and has less tendency for thrombosis and venous stenosis.[1] Arrhythmias on negotiating a guidewire during CVC insertion is considered as a confirmatory sign of entering right atrium (RA) by many clinicians. Atrial and ventricular premature contractions are the most common however supraventricular tachycardia can also result when the guide wire touches atioventricular node for a prolonged duration.[2] Electrocardiographic (ECG) guidance is also used for confirming correct entry of CVC into superior vena cava (SVC) and RA. However, it requires special equipment and Schummer et al. described that increase in P wave size need not always correspond with the entry into of guide wire into RA. Moreover, ECG guidance is also unable to distinguish between venous and arterial catheter placement.[3]

CVC under ultrasound (US) guidance is considered standard of care.[4] The needle is introduced under US guidance using either an out of a plane or an oblique approach to puncture the vein in real time. Most clinicians remove the US probe once the vein is punctured. A guide wire is inserted, and the CVC is introduced in the vein after dilating the
skin. A chest radiograph is used to confirm the position of catheter after the procedure. The incidence of CVC malposition can be up to 5.01%.[5] Malpositioned CVC have been found occupying arteries, mediastinum, pleura, pericardium, trachea, esophagus, and subarachnoid space. Once malposition is confirmed on chest radiograph, the CVC is usually rewired redirected/repositioned over a guide wire with or without fluoroscopy. The process of repositioning not only adds to patient’s discomfort and anxiety, it also delays further treatment for the patient. Repositioning can also compromise sterility.

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