Safety Notice 004/14

Removal of Central Venous Access Devices (CVAD)

Background
Recently NSW Health received notification of an adverse event where a patient has sustained severe neurological damage post removal of a Central Venous Access Device (CVAD) due to an intravascular gas embolism. The removal of the device whilst the patient was sitting upright in a chair is believed to have been a contributory factor.

Air embolism results from the introduction of air into the circulatory system. With patients in the sitting position, negative thoracic pressure will suck air into great veins. This can occur during insertion manipulation or removal of a CVAD and cause sudden vascular collapse. Symptoms include cyanosis, hypotension, increased venous pressures, and rapid loss of consciousness.

Requirements for removal of Central Venous Access Devices
NSW Health Policy Directive PD2011_060 “Central Venous Access Device Insertion and Post Insertion Care” outlines the requirements for removal of CVAD. These requirements include:

- Removal of CVAD must only be undertaken by trained or supervised clinicians.
- Removal of the CVAD must be undertaken using an aseptic technique that will minimise the risk of infection.
- The patient is to be positioned supine with head slightly down (if tolerated) during CVAD removal. This is to increase the pressure in the large veins to above that of atmospheric pressure, which reduces the risk of aspirating air into the venous circulation.
- Following CVAD removal, the site must be sealed with an airtight dressing which remains insitu for at least 24 hours to reduce the risk of late air embolism.
- The patient must remain in the supine position (or Semi-Fowlers if supine not tolerated) for between 30 and 60 minutes following CVAD removal. At least one set of observations should be done during this period, as well as immediately prior to retrieving the patient to the upright position.
- The removal of the CVAD and the presence of an intact tip must be noted in the patient’s health record.

We recommend you also inform:
- Medical Staff
- Nursing Staff

Expert Reference Group
Content reviewed by:
- ACI

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