

POSTOPERATIVE CELL SALVAGE (PCS) BLOOD COLLECTION FOR REINFUSION

AREA of APPLICATION

PCS is used mostly in orthopaedic procedures where a significant amount of blood is lost in the immediate postoperative period. The technique involves collecting blood lost postoperatively via a wound drain. This blood can then be given back to the patient after it is processed by filtration or by washing. Collection can be undertaken with or without further processing and reinfusion.

STAFF

All staff involved in the collection of autologous blood from wound drains for reinfusion.

PROCEDURE

Preparing the patient

Check that the patient has been consented to the procedure in line with local policy. Venous access should be adequate to allow for reinfusion of the autologous blood. If it is anticipated concurrent drug infusion will be required postoperatively then a separate peripheral venous cannula for blood infusion may be required. To avoid delays on the ward, it is advised that this cannula is sited at the time of anaesthesia. A valid prescription will also be required before reinfusion can commence.

Setting up the collection device within the surgical field

Before opening any packaging, check that the sterility of the system is still in date and that the packaging is not damaged

Most systems are supplied with wound drains. Normal surgical procedure should be followed for inserting the drain ensuring sterility, and that the perforated section of each wound drain is below the skin surface. The number of drains used is at the discretion of the surgeon. Some systems may have a limit to the number of drains that can be connected to a single collection device.

Connect the drain(s) to the collection device using the Y-connector or standard connection device provided.

The system should remain clamped off for at least 15 minutes (follow manufacturer's guidelines) after wound closure/tourniquet release time to ensure that the clotting cascade has completed. This will allow defibrination of the wound drain blood and prevent clotting in the collection device.

As soon as reasonably practicable, when the sterile field has been cleared away, the collection receptacle must be labelled with the patient's identification details (from the wristband) and the expiry date and time. The maximum collection time should be determined by local policy, however AABB guidelines state that autologous blood collected postoperatively should be reinfused within 6 hours of the start of collection. The collection period should therefore end allowing sufficient time for reinfusion within the 6 hour time frame.

The above dates & times should also be recorded within the patient record. The disposable component Lot numbers should also be recorded in the event of equipment failure. Most manufacturers provide labels for this purpose.

Care should be taken to avoid disconnection of the drain during patient transfer from the operating table.

If the system leaks blood or lets in air at the wound site from perforated holes in the wound drain being above the skin surface or at the connection junction, the sterility of the collection has been compromised. In this case discard the collection device and replace with a standard vacuum wound drain.

Activation in recovery/ward

When the patient enters recovery, the collection receptacle & documentation should be checked against the patient's wristband to confirm ID details have been transcribed correctly.

The collection system should be securely attached to the side or base of the bed close to the wound.

The collection should be started by activating the vacuum. Depending on the system used, the vacuum may need to be periodically refreshed as drainage progresses (bellows devices).

Normal post-operative observations should be performed. The blood collection process should be routinely monitored. Excessive or sustained blood loss should be reported to the surgeon or anaesthetist according to local policy.

In the event that the system reaches its maximum capacity within the defined collection period, the collection device may be detached and replaced with either a fresh unit or a standard drain system. The collected blood can then be reinfused following the recommended procedure (see factsheet 4: Reinfusion of postoperative cell salvage (PCS) blood).

Reference

AABB Standards for Perioperative Autologous Blood Collection and Administration, 4th edition, 2009, ISBN #978-1-56395-288-3