



TECHNICAL BULLETIN



The Use of ON-Q with Perioperative Autologous Blood Transfusion Systems

Background

“Autologous” transfusion, or “autotransfusion” refers to those transfusions in which the blood donor and the transfusion recipient are the same. “Allogenic” transfusions refer to blood transfused to someone other than the donor.¹ While autologous blood transfusion is most commonly performed in the weeks prior to an elective surgical procedure, it also may be utilized during a surgical procedure in which the patient has significant blood loss. Although once used almost exclusively for open heart and vascular procedures, it is now commonly used for orthopedic, liver transplants, trauma and complex spinal surgeries. The advantages of autologous blood transfusion are many and include reduction of the risk of transmission of viruses, avoidance of allogenic transfusion reactions and supplementation of the sometimes-sparse supply of allogenic blood.²

In perioperative autologous blood transfusions, shed blood is collected from the patient during surgery and reinfused intravenously during surgery, or immediately postoperatively.

Autotransfusion can be accomplished either with a device that collects the whole blood and washes it to separate its components (Cell-Saver®, OrthoPAT™, CATS, or Medtronic Autolog or Sequestra 1000), or by a device that simply collects whole blood and filters it before reinfusion (ConstaVac™, Autovac™, Solcotrans®, or AT200™).³ The advantage of the former process is that the blood is separated into its components (RBCs, platelets, and plasma) and the patient can be given only the component needed.⁴ It also theoretically removes toxic byproducts, but may remove clotting factors in the process.³ The washing devices may require operation by a specially trained operator. While the hemofiltration systems are limited in function, they are easy to use and cost effective.²

Caution When Using Pain Pumps with Autotransfusion

Questions frequently arise in the surgical setting regarding the use of the ON-Q Pain Management system in conjunction with an autotransfusion system, like the Cell Saver®. The safety concern involves the potential for intravascular infusion of the local anesthetics used in the ON-Q pump, and the risk of toxic effects as a result. While the risk may be small, given that the pump is at a slow infusion rate, precaution should be practiced to avoid any such hazard to the patient.

Recommendations when using an autotransfusion system:

DON'T:

- Use ON-Q when blood is still being salvaged for autotransfusion
- Neglect to inform your clinicians of the risks involved.

DO:

- Recommend placing the primed catheter(s) into the wound and connecting them to the ON-Q with the **clamp closed** until the autotransfusion system is discontinued,
- Or, recommend placing the primed catheter(s) into the wound leaving the ends of the catheters **capped** until autotransfusion is discontinued; then connect the pump using aseptic technique.

References

1. American Association of Blood Banks web site:
http://www.aabb.org/All_About_Blood/FAQs/aabb_faqs
2. The National Heart, Lung, and Blood Institute web site:
<http://www.nhlbi.nih.gov/health/prof/blood/transfusion>
3. Fleischlag JA. Intraoperative blood salvage in vascular surgery – worth the effort? Available online at <http://ccforum.com/content/8/S2/S53>.
4. <http://www.haemonetics.com/site/content/products/cellsaver.asp?section=hospitals&subSection=hospitals>.

Please contact the Product Support Hotline at 800.448.3569 or 949.206.2700 if you have any questions regarding this information.

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