



Content from Quarterly Updates in
Optimizing Cardiac Surgery®

Where product, protocol and information intersect.



Platelet Gel Update



*Edward Lawson Woods,
M.D., FACS*

**Geisinger Medical Center
General Surgery**

Practicing Specialties:

- Thoracic Surgery, Board Certified, 1999
- Cancer
- Surgery
- Heart Surgery
- Minimally invasive surgery

Clinical Interests:

Adult cardiac surgery; coronary artery bypass, including minimally invasive (off pump and beating heart) surgery; heart valve repair and replacement, including minimally invasive procedures; surgery for atrial fibrillation; surgery for thoracic aortic diseases; ventricular remodeling procedures; robot-assisted mitral valve repair; apical-aortic conduit

Improve Sternal Wound Healing with Platelet Rich Plasma

Edward Woods, MD, staff cardiothoracic surgeon at the Geisinger Clinic in central Pennsylvania, is a proponent of using platelet rich therapy to reduce sternal wound infections. He recently discussed his outstanding success rate, its limitless applications and its ease of use. Dr. Woods' complete 8-minute audio interview can be heard at: www.terumo-cvs.com/optimizing, and click on Platelet Therapy.

History

"In our effort to improve wound healing and lower the infection rate, we've introduced platelet rich plasma into our treatment cascade," begins Dr. Woods.

Dr. Woods began using platelet rich plasma in October of 2002. "And to this date, I have used this on every one of my sternotomy incisions, except people who are going to surgery with endocarditis or who are so hemodynamically unstable that I can not adequately draw the blood in a safe fashion.

"Since I initiated using the platelet rich plasma, I have had, in that 5 year period, one deep sternal wound infection which required help from the plastic surgeons – and that patient was morbidly obese, he had extremely poor lungs, and was done as an emergency. All the other patients' wounds have healed primarily.

"So my own approach – since it adds no time to the case and the expense is certainly modest – is to apply it to every patient, because you're never quite sure who's going to come down with a sternal wound infection or an unstable sternum, and I feel that this aids in bone healing just as it does in orthopedic surgery," says Dr. Woods.

Cost not a factor

"The actual cost in a cardiac surgery patient -- since the perfusionists are already involved, the devices are already in use -- is really, in a percentage basis, negligible," states Dr. Woods. "The comparison is, that a sternal wound infection, basically results in easily a \$50,000 bill, and I would say more commonly in today's era, a \$100,000 hospital bill, and quite prolonged hospitalization and returns. So the economic benefit of preventing even one sternal wound infection, for a health care system, is tremendous.

"The use of the platelet rich plasma is both clinically and economically justified," he adds. "It appears that the growth factors which are contained and released by the platelet rich plasma significantly reduce the infection rate and also significantly stimulate bone healing and wound healing.

"Also the use of PRP is simple, it's easy and it doesn't impact on OR time," he says. "The use of PRP should be considered on any patient in which wound healing is an issue, particularly with the 2008 Medicare changes pending.

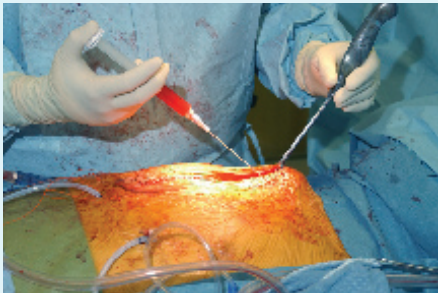
"We use the Harvest device, because our own data here support the fact that the product quality is better and we find it more effective," he says. Harvest Technologies manufactures the SmartPRP2 Platelet Concentrate System, and it is distributed in the United States and Canada by Terumo Cardiovascular Systems.

(continued on next page)

Platelet Gel Update



APC Disposable Chamber



PRP Sternal Application



PRP EVH Application

"Anything we can do that reduces these infections and also aids in sternal wound healing is worth doing," Dr. Woods concludes.

Dr. Woods' application protocol at the Geisinger Clinic:

1. After the lines have been placed by the anesthesiologist, draw off 120 cc's of blood from the patient.
2. That blood is processed in a Harvest SmartPRep2 device which separates it into the platelet rich plasma and the platelet poor plasma.
3. Draw 10ml's of PRP into syringe and combine 1ml of Calcium Thrombin mixture into activator syringe.
4. Wipe/remove any foreign materials from sternal plane, e.g. bone wax
5. Place sternal wires and approximate sternal planes, usually within 1-2 in.
6. Apply approximately 2 ml's of PRP onto each plane
7. Pull sternum together, twist and cut wires
8. Tighten and bury wires into the bone
9. Assess approximation of sternal planes
10. Apply 2 ml of PRP to sternum/soft tissues
11. Apply 2 ml of PRP over each subcutaneous layer
12. Avoid suctioning or wiping away PRP

EVH Closure

1. EVH conducted using standard techniques
2. Draw 10ml's of PRP into syringe and combine 1ml of Calcium Thrombin mixture into activator syringe.
3. Milk canal of any excess clots or drainage
4. Run applicator tip up from distal end and apply PRP (7-10 ml) while removing applicator
5. Following application, roll along canal to remove any liquefied material

Other applications

In addition, cardiac surgeons at Geisinger apply platelet rich plasma to other wounds, such as a groin wound for cannulation. Platelet rich plasma is also used at Geisinger by bariatric surgeons, plastic surgeons, vascular surgeons, orthopedic surgeons and dermatologists.

"There's a general consensus that the positive outcomes of reduction in wound infection and bone healing -- which we in cardiac surgery are involved in both -- is economically justifiable because basically every service in our hospital uses it," adds Dr. Woods.