Autologous Platelet Gel Use in Sternal Healing
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Problem: Sternal infections can be a devastating event following any sternotomy procedure. The physical, emotional, and financial impact of non-healing is enormous. The purpose of this evidence-based research study was to decrease sternal complications with Autologous Platelet Gel (APG) for better patient outcomes.

Evidence: A literature review was conducted for strategies that improved sternal healing and decreased wound infection rates. APG use in wound healing was a common theme that emerged. APG promotes an early cascade of growth factors that contribute to wound integrity and healing. Expedited initial healing will result in decreased sternal complications for improved outcomes.

Strategy: Implementation of APG use in the cardiac arena was easily accomplished and economically justified. Several facets were in place prior to implementation including owning the APG centrifuge device, disposable items in stock, established procedures, and developed quality monitors.

Practice Change: APG is used on all sternotomy incisions including coronary revascularization, valve repair or replacement, ascending aortic dissection repair, thymectomy, and ablation procedures.

Evaluation: Sternal wound healing parameters were measured at the first clinic appointment approximately two weeks post-discharge.

Results: The study involved 163 patients, ages 32-90, who underwent sternotomy procedures during a 12 month period. Concurrent data collection included risk factors and perioperative variations. As a comparison analysis, a retrospective chart review was done on sternotomy patients during a 12 month period prior to the initiation of the APG study. Outcomes included 162 patients (99.4%) with well healed sternums, and one patient (0.6%) with a sternal dehiscence. The comparison study involved 115 patients that did not receive APG, in which four patients (3.5%) had sternal dehiscence. Sternal infection rates decreased from 3.5% to 0.6% with the use of APG.

Recommendations: Positive results from this evidence-based study have made the use of APG on all sternotomy incisions a standard of care.

Lessons Learned: Nursing can positively impact and improve surgical patient outcomes through the use of evidence-based practice.

Bibliography:

