

Limb Reconstruction in Crisis and Conflict Related Injuries

Friday, October 7

6:30am-7:30am

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Locally applied and depot antibiotics and wound management

- 1) Infection remains a common problem and is often responsible for rehospitalization in both the military and civilian settings following trauma (Harris AM, J Orthop Trauma, 2009; Masini BD, J Orthop Trauma, 2009)
- 2) Infection is also a predictor of poorer clinical outcomes (Bosse M, N eng J Med, 2002)
- 3) The current standard to include IV abx and early debridement and irrigation remains inadequate
 - a. Civ: Osteomyelitis rate of 8.6% (Harris AM, J Orthop Trauma, 2009)
 - b. Mil: Deep infection rates of up to 37% (Johnson, J Orthop Trauma, 2009)
- 4) Adjuncts
 - a. Antibiotic beads/bead pouch
 - i. Technique (Decoster TA, J Am Acad Orthop Surg, 2008; Hake ME, Injury, 2015)
 1. Delayed abx addition = better elution (Amin TJ, J Bone Joint Surg Am, 2012)
 - ii. Advantages: Easy, safe, and effective
 - iii. Disadvantages: Additional surgery for removal
 - iv. Local therapy (grade B), may be improving given recent evidence for locally applied vanc powder (Okike K, J Bone Joint Surg Am, 2006)
 - v. Decreased rate of infection in severe open fractures (Keathing JF, J Orthop Trauma, 1996)
 - vi. Induced membranes/dead space management (aho O, J Bone Joint Surg Am, 2013)
 - b. Local antibiotics (no delivery device/absorbable)
 - i. Vancomycin powder
 1. Update on currently literature
 - ii. Calcium sulfate (Beuerlein M, J Orthop Trauma, 2010)
 - iii. Chitosan sponge (Stinner D, J Orthop Trauma, 2010)
 - c. Negative Pressure Wound Therapy
 - i. Tips on application
 - ii. Associated with decreased deep infection rate (Stannard JP, J Orthop Trauma, 2009; Blum ML, J Orthop Trauma 2012, Stannard JP, J Orthop Trauma, 2012)
 - iii. Animal studies (Lalliss SJ, J Orthop Trauma, 2010)
- 5) Combination Therapy/Techniques
 - a. NPWT + Silver (Stinner, J Trauma 2011)
 - b. NPWT + Antibiotic beads (Stinner, J Orthop Trauma, 2012)
 - c. Vac Drain