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Procrastination of wound drainage and malnutrition affect the outcome of joint arthroplasty

Background: The association between wound drainage and subsequent periprosthetic infection is well known. However, the most appropriate treatment of wound drainage is not well understood.

Methods: We retrospectively reviewed the records of 10325 patients (11785 procedures). Among whom 300 patients (2.9%) developed persistent (greater than 48 hours postoperatively) wound drainage. Wound drainage stopped spontaneously between 2 to 4 days in 217 patients treated with local wound care and oral antibiotics. The remaining 83 patients (28%) underwent further surgery.

Results: A single debridement resulted in cessation of drainage without subsequent infection in 63 of 83 patients (76%), whereas 20 (24%) patients continued to drain and underwent additional treatment (repeat debridement, resection arthroplasty, or long-term antibiotics). Timing of surgery and the presence of malnutrition predicted failure of the first debridement. There were no differences between the success and failure groups with regard to all other examined parameters, including demographic or surgical factors.

Conclusion: We found patients who underwent debridement at a mean of 5 days following the onset of drainage were more likely to be infection free at one year postoperatively compared to patients who underwent debridement at a delayed time mean, 10days. Our data confirmed that malnourished patients (serum transferrin less than 200mg/dL, serum albumin less than 3.5g/dL, total lymphocyte count less than 1500/mm³ are more likely to develop deep infection and require further treatment after irrigation and debridement. Based on these findings, we recommend early (within 7 days) surgery for persistent wound drainage in general, and particularly for those with malnutrition.

Recent Publications:

1. Hanssen A D and Rand J A (1999) Evaluation and treatment of infection at the site of a total hip or knee arthroplasty. Instructional Course Lecture 48:111-20.
2. Masterson E L and Masri B A, Duncan C P (1997) Treatment of infection at the site of total hip replacement Journal of Bone & Joint Surgery - American Volume 79:1740-1749.
3. Weiss A P and Krakow K A (1993) Persistent Wound drainage after primary total knee arthroplasty. J Arthroplasty 8(3):285-9.
4. Patel V P, Walsh M, Sehgal B, Preston C, De Wal H and Di Cesare P E (2007) Factors associated with prolonged wound drainage after primary total hip and knee arthroplasty. Journal of Bone & Joint Surgery - American Volume 89(1):33-8.
5. Vince K G and Abdeen A (2006) Wound problems in total knee arthroplasty. Clinical Orthopedics and Related Research 452:88-90.

Biography

Fereidoon M Jaber is a Professor of Orthopedic Surgery at Shiraz University of Medical Science in Iran. He practices in fields of his fellowships in: Arthroscopic Joints Surgery from McGill University at Montreal, Canada; Adult Reconstruction, Hip and Knee Arthroplasty from Rothman Institute Joint Research at Thomas Jefferson University in Philadelphia, USA and Foot and Ankle Reconstruction from Toronto Western Hospital, Canada.

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