

Programme and abstracts



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[FP7] EARLY DEBRIDEMENT, ANTIBIOTICS AND IMPLANT RETENTION (DAIR) PROCEDURES IN COMPLICATED WOUND HEALING AFTER TOTAL JOINT ARTHROPLASTY – ARE ELEVATED SYNOVIAL FLUID LEUKOCYTE COUNTS ACCURATE IN DIFFERENTIATING SUPERFICIAL FROM DEEP INFECTIONS?

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Aim: Treatment of complicated wound healing after total joint arthroplasty is controversial. What exactly constitutes prolonged wound drainage is matter of debate and recommendations to manage it vary considerably. Nonoperative measures are often recommended. If drainage persists, surgery may be indicated. To further intricate decision-making, differentiating superficial from deep surgical site infection is also controversial and inherently complex. Specific cutoffs for synovial fluid leukocyte count and blood C-reactive protein(CRP) in the acute stage have been suggested as a way to superficial infection requiring superficial wound washout from deep infection requiring a formal debridement, antibiotics and implant retention(DAIR) procedure. The goal of this study is to analyze clinical and laboratory findings of an institutional protocol of “aggressively” proceeding with formal DAIR in all patients with complicated wound healing

Method: Our indications for DAIR in suspected acute postoperative periprosthetic joint infection (PJI) are: 1)prolonged wound drainage and CRP upward trend after day-3; 2)persistent wound drainage by day-10 regardless of CRP; 3)wound healing disturbance (e.g.“superficial” infection, “superficial” skin necrosis) anytime in early postoperative weeks. We retrospectively evaluated patients undergoing DAIR in the first 60 postoperative days between 2014-2018. Patients without multiple deep tissue cultures obtained intraoperative were excluded. Deep infection was defined by at least two positive deep tissue cultures or one positive deep culture and positive leukocyte count (>10,000 cells/mL or >90% PMN).

Results: A total of 44 DAIR procedures were included. Deep infection was confirmed in 79.5%(35/44) of cases. Mean CRP in infected cases was 93mg/L with 63%(19/30) of them below the 100 mg/L threshold. Unfortunately, only a small proportion of cases (10/44) had synovial fluid leukocyte counts available. Mean leukocyte count was 15,558 cells/mL and mean proportion of PMN was 65.3%. Of these ten, six confirmed deep infections were below the proposed >10,000 cells/mL or >90% PMN cutoff.

Conclusions: Early diagnosis of acute postoperative PJI is often hampered by its very subtle presentation. This study confirms that more often than not, deep infection is present when facing complicated wound healing after total joint arthroplasty, supporting our institutional “aggressive” protocol. We have been surprised by the number of confirmed acute PJI with low blood CRP levels and low synovial leukocyte counts. We hypothesize that the proposed acute PJI specific thresholds may lead to misinterpret a significant proportion of cases as superficial infections thus compromising timely intervention. The findings of this study lack confirmation in larger cohorts

[FP8] DAIR PROCEDURE IN PROSTHETIC JOINT INFECTION: PREDICTIVE TOOLS OF FAILURE

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Background: DAIR is an attractive treatment for PJI. The purpose of this study is to determine predictive factors of failure.

Materials and Methods: We reviewed all DAIR procedures for hip PJI performed between 2002-2017 (n=69). Data recorded included all factors correlated with treatment failure. KLIC score and an adapted McPherson score (sum of three criteria where the lower score is three for 3 A and the higher is 9 for 3 C) were analyzed.

Results: Infection eradication for early PJI (< 4 weeks) was achieved in 68% of patients and was correlated with treatment success (p=0.01). Success rate was only 37.5% in hematogenous infection and 28% in late infection. KLIC score (p=0.036), McPherson adapted score (threshold value 5.5/9) (p=0.01), CRP (with a cut-off value at 73.5 mg%) (p=0.025) and late PJI (p=0.031) were significantly predictive of failure treatment. For the KLIC score, patients with a score of ≤2, >2-3.5, >4-6.5, ≥7, respectively obtained a rate of failure of 33.3%,60%,71% and 100%.

We have established an equation in order to predict failure treatment. This tool predicts treatment failure when Logit P (equation result) is >0.476 with a sensitivity of 80% and a specificity of 83% (p = 0.05).

Conclusions: KLIC and adapted McPherson scores predict outcome of DAIR and should help making the decision in PJI treatment. Tsang et al, demonstrates that symptoms lasting for less than 7 days represent a significant threshold. Despite 80% of our patients operated within 7 days, the analysis wasn't significant. It seems that a DAIR procedure done promptly is not the only condition required for success and some others factors influence the outcome of treatment.

Logit P = 0.376 - (0.0533 * Kidney failure) + (0.933 * Age) + (0.640 * BMI) + (1.111 * Tobacco) + (0.031 * Fistula) + (0.164 * Deep infection) - (0.366 * Revision) - (2.684 * Exchange of the modular component) - (2.685 * Early PJI) + (1.243 * Hematogen PJI) + (0.127 * Polymicrobial PJI) - (0.309 * Staphylococcus aureus) + (0.393 * MRSA) + (0.907 * Resistance to quinolons/rifampicin) + (3.789 * CRP >73,5mg/L) - (2.578 * Onset of symptoms > 7days)