The Role of a Plastic Surgeon in Complex Joint Reconstruction: a report of 83 cases by a single unit.

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Abstract:

Background: 160,000 hip and knee replacements are performed each year in the UK. After multiple revisions, soft tissues become sub-optimal and chronic wounds develop causing infection or metalwork extrusion[1-5]. We present our experience with 83 patients at a tertiary orthopaedic hospital.

Methods: A prospective chart review of patients whom required reconstruction as a result of complex joint revision surgery was performed between February 2006 and February 2014. All primary joint replacements were excluded.

Results: 83 operations were performed which were separated down into the following categories: Group 1 (n=18) had acute wound breakdown and exposed metalwork but no laboratory evidence of infection. Group 2 (n=29) had delayed wound breakdown (1-6 weeks post-operatively) with positive bacteriology but no raised inflammatory markers. Group 3 (n=36) had longstanding wound breakdown with positive bacteriology and raised inflammatory markers. 47 belonged to Group 1 or 2 and were as performed as an emergency with metalwork being left in situ. Group 3 were subdivided into Group 3a (n=5) where revision and reconstruction occurred in a single stage and Group 3b (n=31) managed by a two-stage reconstruction, with metalwork being replaced by an anti-microbial spacer and flap coverage of the wound. The second stage should be planned once biochemical parameters have normalised after being 6 weeks free of antibiotics. A total of 15 different types of flap were used. The average age was 67.5 years and mean follow-up 14 months (1-29 months). The long-term success rate was 85% of patients being ambulant and infection free at 6 months.

Conclusions: The best results are achieved using a combined approach with multi-disciplinary input from orthopaedic and plastic surgeons with constant specialist clinical microbiology input. All patients had deep tissue samples taken, a long-line inserted and according to microbiology advice, a tailored 6-week regime of intravenous antibiotics. A two-stage approach improves outcomes of chronic wounds however patients often have multiple co-morbidities that necessitate a single-stage plan.

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