Orthopedic hardware infections are much feared and costly complications that can occur when these devices are implemented both in traumatic cases as well as in joint replacement surgery. Because these infections can lead to great morbidity, it is important to understand their pathophysiology as well as the principles behind their diagnosis and initial treatment. Plastic surgeons are frequently consulted as part of a multidisciplinary team to provide stable soft tissue coverage of the associated defects that result from these infections. Orthopedic implants have revolutionized treatment of bone fractures and noninfectious joint arthritis. Today, the risk for orthopedic device-related infection (ODRI) is <1%–2%. However, the absolute number of patients with infection continuously increases as the number of patients requiring such implants grows. Treatment of ODRIs most frequently includes long-term antimicrobial treatment and removal of the implant. Recent evidence from observational trials and 1 randomized clinical trial indicate that a subset of patients can be successfully treated with retention of the implant.
In the diagnosis of infection, one of the primary problems has been how to exactly define a deep periprosthetic infection and what variables constitute or contribute to the diagnosis. The American Academy of Orthopaedic Surgeons has proposed a clinical practice guideline to facilitate the diagnosis of PJI. This guideline recommends initial screening of patients with ESR and CRP and whether either is elevated to proceed with arthrocentesis. Fortunately, these two serum biomarkers are easy to obtain and facilitate the process of determining whether or not the clinician should proceed with arthrocentesis. The diagnosis of periprosthetic joint infection (PJI) following total hip arthroplasty and total knee arthroplasty has been one of the major challenges in orthopedic surgery. As there is no single absolute test for diagnosis of PJI, diagnostic criteria for PJI have been proposed that include using several diagnostic modalities. Focused history, physical examination, plain radiographs, and initial serologic tests should be followed by joint aspiration and synovial analysis. Newer diagnostic techniques, such as alpha-defensin and interleukin-6, hold great promise in the future diagnosis of equiv... Orthopaedics could benefit from enhanced preventive, diagnostic, and treatment methods. Copyright © 2015 Elsevier Ltd. All rights reserved. View.