AAOS
American Academy of Orthopaedic Surgeons

Plain Language Summary

Surgical Site Infections

Background

This plain language summary provides an overview of the management of Surgical Site Infections.

What is a surgical site infection?

Surgical Site Infections (SSI) are defined as infections that occur after surgery in the part of the body where the surgery took place. Superficial SSIs in- volve only the skin where the incision was made, while serious infections can involve tissue and muscle, organs, or implanted devices.

Many factors may increase the risk of an SSI after hip and knee arthroplasty surgery. Significant research linked anemia, length of hospital stays, use of immunosuppressive medications, alcohol abuse, BMI over 40, depression, history of congestive heart failure, dementia, or the diagnosis of HIV/AIDS as higher risk factors. Additional studies found chronic kidney disease, diabetes, tobacco use, and malnutrition as risk factors for developing SSI. Limited evidence showed cancer, high blood pressure, and liver disease also as risk factors.

How is a surgical site infection diagnosed?

SSIs are diagnosed through a combination of synovial fluid (found within the joint), tissue cultures, blood tests, a physical exam, and diagnostic imaging. Synovial fluid cultures and tissue cultures are accurate tests that verify the presence of an infection. Research shows that collecting multiple tissue samples is better for confirming SSIs, as well as the need for these cultures to be grown for a period of 14 days. Tests using tissue samples have also proved more accurate than those of swab cultures. The use of Blood serum levels can be used to establish the presence or absence of an SSI, specifically the use of C-reactive protein levels. Physical exams can be used to diagnose an SSI, with a positive exam being a reliable rule-in test; however, exam findings are not reliable as rule-out, or establishing the lack of an infection, test. A positive exam would show the presence of one of the following: current painful joint, history of chronic joint pain, wound drainage, or a fever lasting for more than 48 hours in the first month following surgery. Limited evidence supports the use of diagnostic imaging to detect a suspected bone, joint or implant SSI.

What treatment options are available for surgical site infections?

Most SSIs are treated with antibiotics. However, additional surgery or procedures such as debridement (the removal of dead, damaged, or infected tissue), may be necessary. Research shows that the use of antibiotics for a short-term period of 8 weeks is sufficient and does not result in a notably different outcome than a longer-term duration of 3-6 months. Rifampin, when used with an antibiotic, also increases the likelihood of successfully treating an SSI.

This summary was written by the Committee on Healthcare Safety.

Learn more about the Committee's work HERE.