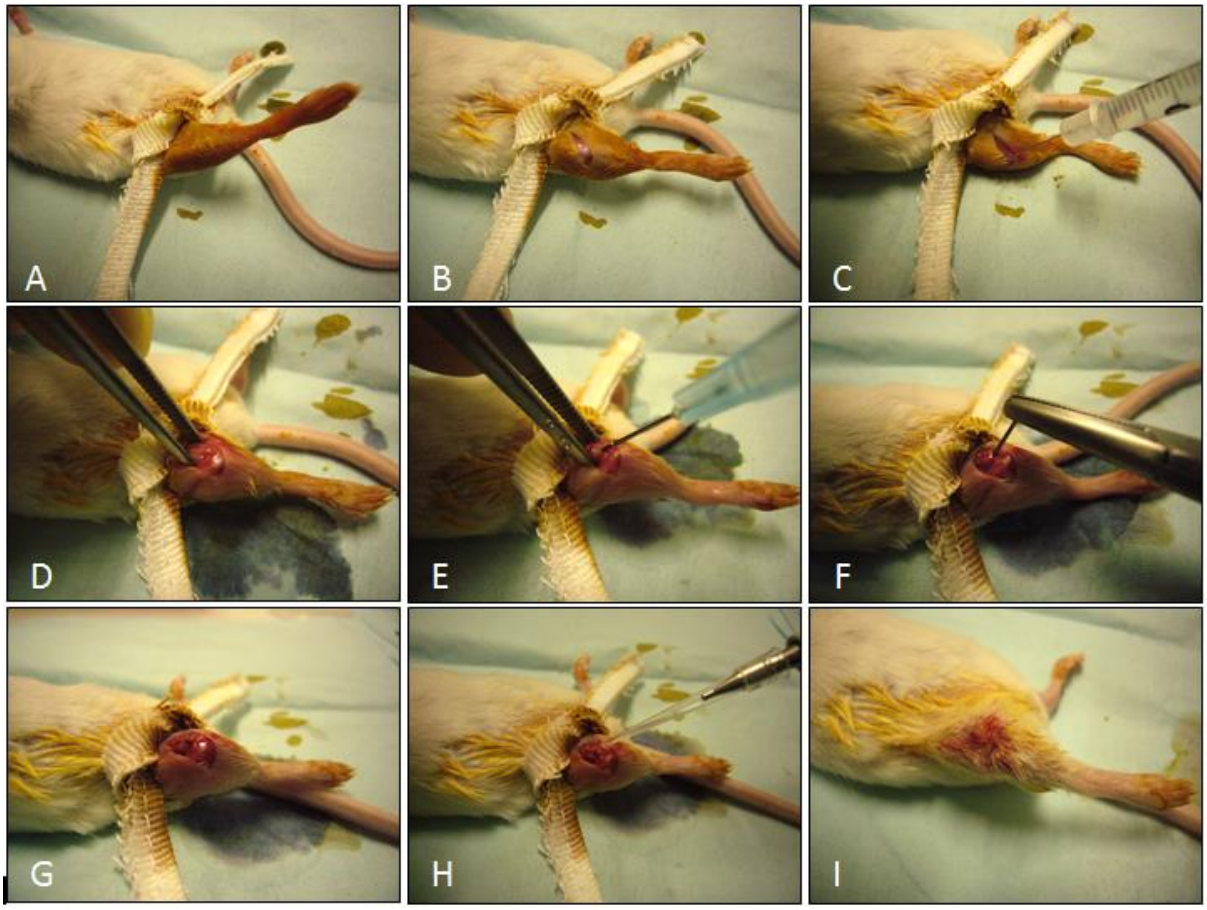
**Young SW, Roberts T, Johnson S, Dalton JP, Coleman B, Wiles S (2015). Regional intraosseous administration of prophylactic antibiotics is more effective than systemic administration in a mouse model of TKA. Clin Orthop Relat Res. Nov;473(11):3573-84. doi: 10.1007/s11999-015-4464-x. Epub 2015 Jul 30.**

**Surgical procedure**

The surgical procedure was modified slightly from previous work at creating a murine model of knee joint arthroplasty[1]. Mice were weighed preoperatively and anaesthetised using inhalational isoflurane (3.0%). In the absence of a toe pinch reflex, the right leg was depilated using clippers and an above knee tourniquet was applied. The surgical site was prepared using an iodine-povidine swab followed by an alcohol swab and a final iodine-povidine wash (A). A short skin incision was made at the level of the knee (B). At this stage mice in the intraosseous regional administration (IORA) groups had antibiotic injected directly into the proximal tibia (C). Next, a medial parapatellar approach was used to access the knee joint and the intercondylar region of the distal femur identified (D). The femoral medullary canal was manually reamed with sequentially larger gauge needles for the stainless steel implant, starting with a 26 gauge needle (E). A sterile 0.6mm Kirschner wire was then inserted in a retrograde fashion through the intercondylar region into the intramedullary cavity of the distal femur (F). The Kirschner wire was cut with approximately 1mm of wire proud protruding into the joint cavity (G). Prior to closing, a 2 µl aliquot of approximately $10^9$ CFU $ml^{-1}$ *S. aureus* was pipetted into the joint (H). The patella complex was then reduced and the incision closed with 6-0 monocryl (I). The total tourniquet time for each mouse was 30 minutes. Postoperatively the mice received acetaminophen elixir (6mg/ml in the drinking water) and carprofen (5mg/kg subcut) once daily.




**Reference**:

1. Bernthal NM, Stavrakis AI, Billi F, Cho JS, Kremen TJ, Simon SI, et al. (2010) A mouse model of post-arthroplasty *Staphylococcus aureus* joint infection to evaluate in vivo the efficacy of antimicrobial implant coatings. PLoS ONE 5(9): e12580. doi:10.1371/journal.pone.0012580