Name
Ojas Pujji

Email
oxp225@bham.ac.uk

Title
To bury or not bury: Kirschner wires in Hands

Purpose
Use of Kirschner (K) wires is wide in the setting of fracture fixation of unstable fractures in the hand and wrist. Complications of this such as pin track infections can progress to osteomyelitis, septic arthritis, flexor sheath infections or toxic shock syndrome. For these reasons, research into factors that may reduce this complication will benefit the patient greatly. The purpose of this study is to determine if burying K-wires or leaving them percutaneously affects the infection rates in fractures of the hand and wrist.

Methods
This study was conducted at the Birmingham Hand Centre during 2015. All patients with K-wires in the Hand Department was included. Total of 206 patients were included in the study. Details regarding length of K-wire in situ, diagnosis, primary/secondary operation, open/closed injury, co-morbidities and management of infection was recorded.

Results
The final cohort consisted of 206 patients with a mean age of 38 (standard deviation 17; range 14 to 87). K-wires remained for a mean period of 39 days. One case was excluded due to bias as K-wire remained in for 321 days, four cases the K-wire insertion date could not be located and 6 cases currently still had K-wires inserted. 82 cases were buried and 126 cases K-wire was left percutaneously. Only 3% (n=2) of the buried cases were infected as opposed to 17% (n=18) of the percutaneous cases. The difference between burying and not burying in regards to infection is statistically significant ($p < 0.01$).

Conclusion
The use of K-wires percutaneously is shown to be more at risk of causing infection compared to buried K-wires. More robust studies and further cost-effectiveness studies need to take place to justify the use of extra resources required for burying K-wires.