

Alicja Bojan, MD, PhD
Senior Orthopaedic Consultant
Institute of Clinical Sciences,
Sahlgrenska Academy,
University of Gothenburg,
Gothenburg, Sweden
alicia.bojan@vgregion.se



Pegasus see REX Ortho website
<https://rexortho.com>

Evaluation of a two-winged removable expansion screw device intended to increase resistance to screw cut-out in patients with trochanteric hip fractures

Who are the patients?

Elderly patients who sustain a hip fracture that has more than 2 fragments (classified as unstable) and with poor bone quality who are at risk from screw fixation failure.

What is the problem?

When patients break their hip joint >95% will receive an implant. The current standards of operative care are metallic screws either in combination with metal plates or intramedullary nails and these may fail due to screw cut-out in weakened bone. This screw cut-out complication is painful and disabling for these elderly patients, and usually necessitates a more expensive and more complicated second surgery. To reduce the risk of this re-operation there are several ways to increase the cut-out resistance but at present we do not have much evidence to say which is the one most likely to succeed in reducing screw cut-out

What is the need?

This project is to develop a test method to compare biomaterial augmented screws with mechanically augmented standard screws in a static test model. In particular the mechanically augmented screws, which use deployable wings, should be compared with a standard screw either alone or with cement augmentation. A dynamic testing model proposal is also required.

What is the benefit (if problem were solved)?

The improved ability for the combination of the implant and poor bone to bear load through to healing. This project would enable a better understanding of the comparative failure risk compared to a standard screw of: 1) cement (CaP), 2) cement (PMMA) 3) a modified “Pegasus” two winged expandable screw device

As an additional goal: can the winged version be improved by some means?

Wrap up

Developing a test method to evaluate and compare the resistance to loads of the screw alone, the screw with cement augmentation and additionally the two winged Pegasus screw.

