

## Comparison Between Two Methods for Arthroscopic Reattachment of Avulsion of the Tibial Spine in Children and Adolescents

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### Summary:

This study compares the outcomes from two different methods of tibial spine reattachment - a suture loop pull through versus an endobutton assisted pull through.

### Abstract:

#### Introduction:

Arthroscopic treatment tibial spine (ACL) avulsion injuries for Meyers and McKeever grade 2 and 3 in children offers better outcomes than open surgery for pain relief, post-op stiffness and the speed of recovery. Current methods use suture shutting techniques to place a loop around the ACL insertion and pulling it through the proximal tibia. This method has a steep learning curve and can be time and difficult in a paediatric knee. We have used a simpler method which involves an intra-articular endobutton to anchor a pull-through suture in the ACL attachment. In both groups the sutures were tied around an endobutton post over the medial tibial cortex.

#### Methods:

In a retrospective study we compared two case matched groups of 10 cases each to compare the outcomes of these two methods. Knees in both groups were immobilised in an extension knee brace for 3 weeks and were mobilised thereafter.

#### Results:

The surgery was faster in the endobutton group by an average of 12 minutes ( $p < 0.05$ ). The endobutton method allowed more anatomic apposition of the tibial spine. Full range of movement was attained marginally faster in the endobutton group ( $p > 0.07$ ). The results at 12 months were similar. There were not growth plate issues in either group. Both groups required an additional procedure to cut the suture knot and detether the growth plate. A repeat arthroscopy was needed in the intra-articular endobutton group to remove the intra-articular endobutton. In 4/10 cases the intraarticular endobutton was covered in healing scar tissue and was not visualised arthroscopically and was left in-situ. The in-situ buttons have not caused any symptoms to date.