ACL Revision after ACL Reconstruction with LARS Artificial Ligament

Our experience after 39 Revisions

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Revision rates

• Low number of published long term outcomes

• 15.8% - 27.8% RR after 10 years (1)(2)

• 27.5% RR after 19 years (3)

(1) Parchi PD et al., Joint 2018
(2) Tiefenboeck TM et al., Knee 2015
(3) Ventura A et al., Knee 2010
Reported disadvantages

- Chronic Synovitis
- Recurrent effusions
- Cross-infections
- Instability
- Tunnel osteolysis
- Breakage

Ventura A et al., Knee 2010
Ventura A et al., Eur J Orthop Surg Traumatol 2014
Li H et al., Arthrosc – J Arthrosc Relat Surg 2012
Our patients

- 39 patients (2008 – 2018) were revised after LARS

- Causes of failure:
  - Insufficiency
  - Recurrent effusions
  - Lag of ROM
  - Persistent pain
Our procedure

• Pre operative planning
  • Exact analysis of the failure reason
  • Clinical examination under fluoroscopy
  • Native X-rays (full length weightbearing, ap, lateral)
  • CT
  • MRI
Our procedure

- Always 2 stage revision

- 1\textsuperscript{st} session:
  - graft removal + filling of the tibial drilling tunnel

- 2\textsuperscript{nd} session:
  - at least 6 months after first session
  - ACL reconstruction
Our procedure – 1\textsuperscript{st} session

- Arthroscopic graft removal

- Tibial ligament removal with the shaver through the old tibial access
Our procedure – 1st session

• Taking intraoperative tissue samples ➔ in 80% of our cases synovitis with giant cell granuloma

• Tunnel filling with iliac crest cancellous bone
Our procedure – 2\textsuperscript{nd} session

• ACL reconstruction at least 6 months after 1\textsuperscript{st} session

• Preoperative renewed CT analysis
Our procedure – 2nd session

- Used transplants: hamstrings or quadriceps tendon
- If necessary, additional lateral tenodeses modified by Lemaire
Take home massage

• In 80% synovitis with giant cell granuloma
• In 100% ligament insufficiency without traumatically rerupture
• The complete removal of the artificial ligament isn’t always possible – with persistent risk of synovitis
• Massively widened tibial drilling tunnel
• Always 2 stage revision
• Revision is much more difficult than common ACL revision

In our opinion, there is no primary indication to use LARS ligament for ACL!