The use of the central transpatellar tendon portal during the reconstruction of the anterior cruciate ligament does not lead to clinical or radiological alterations.
DISCOLOSURE

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I have no financial conflicts to disclose
Introduction

• Central transpatellar tendon portal was described by Gillquist and Hagberg in 1976

• It is an accessory portal that provide an extended field of vision of the posterior aspect of the knee.

• Was initially described for posterior loose bodies, meniscal root avulsions and treating bucket handle meniscal tear

• The possibility of patellar tendinitis, lowering of the patella or anterior knee pain performing this type of portal were reported so it was mostly abandoned for the treatment of meniscal pathology
Introduction

• One of the most common complication associated with Anterior Cruciate Ligament (ACL) reconstruction is the drilling of the tunnels with an erroneous placement.

• Poor visualization of anatomic landmarks substantially contributes to intraoperative inaccuracy.

• The posterior aspect of the lateral intercondylar notch may be difficult to view entirely through the standard lateral portal.

• An accessory high medial portal like view portal to perfectly drill the femoral tunnel is quite widespread. Nonetheless, this supposes working from the medial side while using the scope from the same side of the knee.

• Choen et al. suggested using a tree-portal technique using a central portal aiming for a better view of both the femoral and the tibial ACL footprint.
OBJECTIVE OF THE STUDY: to compare postoperative patellar height, patellofemoral pain and radiological alterations of the patellar tendon and of patellar fat pad in patients who underwent ACL reconstruction using a central transpatellar portal or an high medial portal as a viewing portal.

HYPOTHESIS OF THE STUDY: the use of central transpatellar portal in ACL reconstruction does not lead to a higher rate of complications or cause clinical or radiological abnormalities at medium term follow up.
Method

- Patient undergone anatomic ACL reconstruction by 4 experienced surgeons between 2014 and 2017 in a single institution were retrospectively evaluated

- 2 surgeons always used as viewing portal a central transpatellar portal, the other 2 surgeons used an high medial portal

**Exclusion criteria:**
- Reconstruction with patellar or quadriceps tendon
- Previous knee surgery
- History of anterior knee pain
- Associate procedure during ACL reconstruction
- Lack of preoperative or postoperative imaging (MRI and X-Ray)
Method

**Parameters evaluated** → 2 observer, 2 measurement each observer

- postoperative anterior knee pain
- postoperative infection
- patellar tendon rupture
- quadriceps muscle trophism
- MRI signal of patellar tendon and infrapatellar fat pad
- patellar height

**Patellar height evaluation:**
1) Caton-Deschamps Index (CDI)
2) Insall-Salvati Index (ISI)
3) Modified Insall-Salvati Index (MISI)
Results: general

- 84 patients were reviewed with a mean follow-up of 42 months
- In 43 cases was performed a central portal (group 1), in 41 was performed an high medial portal (group 2).

No differences between the 2 groups were detected about infection rate (p=1), quadriceps muscle trophism (p=0.763) and patellar tendon rupture rate (p=1)
Results: patellar height

- Mean post-operative values group 1: CDI 1,02 ISI 1,04 MISI 1,73 (pre-operative: CDI 1,06 ISI 1,05 and MISI 1,8)

- Mean post-operative values group 2: CDI 1,05 ISI 1,06 MISI 1,72 (pre-operative: CDI 1,08 ISI 1,06 and MISI 1,79)

- **No significative difference** was detected about patellar height (p=0,865)
- No patients developed patella baja
- In 2 cases of preoperative CDI<0,8 a central transpatellar tendon portal was used and no complications occurred
Results: patellar tendon

• No cases of patellar tendon pain or tenderness at last follow up

• 5 patients with alterations at patellar tendon or Hoffa fat pad at last MRI follow up → 2 in group 1 and 3 in group 2

• 7 patients with anterior knee pain at last follow up → 4 in group 1 and 3 in group 2

• 1 patient shows anterior knee pain associated with MRI alteration at patellar tendon proximal insertion → it belongs at group 2
Discussion

- Central transpatellar tendon portal is useful for intraoperative view when we want to perform an anatomic ACL reconstruction.

- Even if some studies showed radiological changes at short term follow up, the present study did not find any difference in the radiological signal in comparison with a control group at medium term follow up.

- At medium term follow up no muscular impairment or clinical signs of patellar tendinitis were detected in the study group.

- No postoperative changes in patellar height were detected among the 2 groups compared in the present study.
Conclusion

Central transpatellar tendon portal used for ACL reconstruction does not lead to significant complications, disadvantages and radiological alteration in comparison with ACL reconstruction with standard portals.
References