

High Failure Rate After Medial Patellofemoral Ligament Reconstructions. A Nationwide Epidemiological Study Investigating 2.572 Medial Patellofemoral Ligament Reconstructions And 24.154 Primary Dislocations.

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Summary:

This is a retrospective nationwide epidemiological study investigating incidence and treatment of all patellar dislocations in Denmark from January 1994 to December 2013. A rapid rise in MPFL-reconstructions was seen from 2005 to 2013 but the risk of recurrent patellar dislocation with an 8-year follow-up time after surgery did not decrease accordingly.

Abstract:

Background: No reliable epidemiological data was found concerning trends in patellar stabilizing surgery and the risk of acute and recurrent patellar dislocation.

Hypothesis/Purpose: To investigate the incidence of acute and recurrent patellar dislocations in the Danish population as a whole from 1994 to 2013. Furthermore to evaluate the trends in surgical treatment of patellar dislocations and to find risk of recurrent dislocation after MPFL-reconstruction.

Methods: This descriptive epidemiological study was performed by retrospectively searching the Danish National Patients Registry from 1994 to 2013. The study investigated multiple subjects; the risk of acute and recurrent dislocation with a 10 year follow up, the trends in surgery performed on patients with patellar dislocation and the risk of recurrent patellar dislocation after Medial Patellofemoral Ligament (MPFL) reconstruction. Furthermore the risk of acquiring a recurrent dislocation or a dislocation in the opposite knee was investigated with 10 years of follow up after primary dislocation. National population data were collected at the services of Statistics Denmark. Risk estimates were calculated by cox proportional hazard models, all analysis was done in R 3.2.2.

Results: When investigating 2.572 MPFL-reconstructions performed from 2005 until 2014 the 8-year overall risk of recurrent dislocation after a Medial Patellofemoral Ligament (MPFL) reconstruction was 21%. From 1996 until 2013 the overall amount of patellar stabilizing surgery was stable but with a rapid rise in MPFL-reconstruction from 2005. In 2013 MPFL-reconstruction surgery constituted 75% of all patella stabilizing surgery and was performed on almost 10% of patients with patellar dislocation.

The non-operative treated patients had a 31% risk of recurrent dislocation and patients treated with other patellar stabilizing surgery had 36%.

From 1994 to 2013 a total of 24.154 primary patellar dislocations were registered. A mean incidence of 72 (95% CI: 63 - 81) per 100.000-person years at risk (PYRS) was found, young females aged 10-17 had an incidence of 108 (95% CI: 101-116). In a 10-year follow up patients had an overall risk of 22.7% (95% CI: 22.2 - 23.2) of suffering a recurrent dislocation, with young girls aged 10-17 at the highest risk with 36.8% (95% CI: 35.5 - 38.0). The overall risk of suffering a patellar dislocation in the contralateral knee was 5.8% (95% CI: 5.5 - 6.1) and 11.1% (95% CI: 10.4 - 11.7)

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for patients aged 10-17.

Conclusion: The overall risk of recurrent dislocation after MPFL-reconstruction remained high (21%) despite of a rapid rise in MPFL-reconstructions from 2005 to 2013. In 2013 MPFL-reconstruction surgery constituted 75% of all patella stabilizing surgery. These findings might indicate two things; that patellar stabilizing surgery might not be the best treatment for all patients, and that the underlying pathomorphology for the patella dislocation have to be examined and corrected concomitant to reconstructions of the MPFL. A high incidence rate of acute patellar dislocation was found (72/100,000 PYRS) with patients aged 10-17 having the highest risk of primary and recurrent dislocation.