Significantly greater incidence of patella fracture after MPFL reconstruction for patients age 20 and under

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Disclosures

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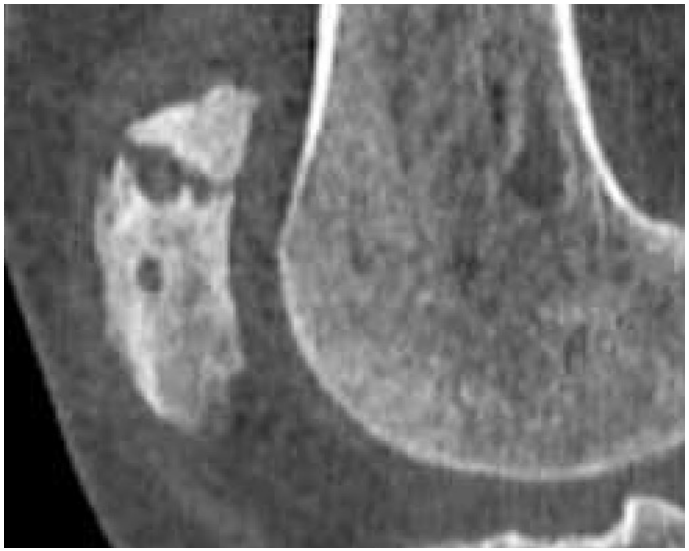
Background

- Medial patellofemoral ligament reconstruction (MPFL-R) is commonly performed to restore patellar stability
- The use of bone tunnels and suture anchors can create a risk of postoperative patellar fractures
- Little is known about risk factors and timing of patellar fractures after MPFL-R



Objective

- The purpose of this study was to assess the incidence of postoperative patella fracture after MPFL-R and to determine if age and sex influence either the risk or timing of fracture.

Methods

- The PearlDiver Mariner165 database was used in this study
  - Contains insurance claims information on more than 165 million orthopaedic patients
- Patients between the ages of 14 and 40 that underwent MPFL-R were identified by Current Procedural Terminology codes (CPT 27420, 27422, or 27427) and diagnosis codes associated with patellar instability
- Index procedures were performed between January 1, 2010 and December 31, 2021
  - Only patients with active insurance coverage spanning from one year prior to and after the index surgical procedure were included.

Methods

- The incidence of subsequent patella fracture was identified using CPT and diagnosis codes associated with either open or closed fracture treatment
- The incidence of patella fracture was compared between sexes and age groups ($\leq$ 20 y vs. >20 y) using chi square tests and Odds Ratios (OR) were calculated for any significant findings
- Kaplan Meier survivorship curves were also created to assess subsequent patellar fracture after MPFL-R

Results

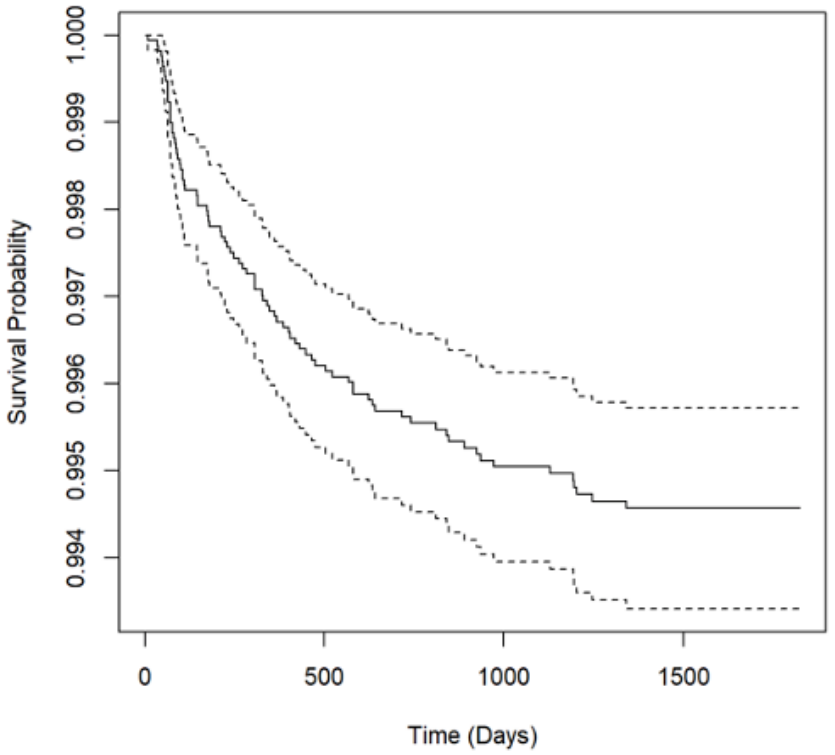
- A total of 29,539 patients were identified (19,950 female, 9,589 male; 17,011 ≤ 20 y, 12,528 >20 y)
- 141 were reported to have a subsequent patella fracture (0.47%)
- The incidence of patella fracture after MPFL-R did not differ by sex (female:0.44%, male:0.54%, p=0.26)

Results

- Patella fractures were significantly more common amongst younger patients
  - All 141 fractures occurred in patients ≤ 20 years old (0.83% vs. 0.00%, OR=210.2 [95%CI: 13.1, 3577.0])
- When limiting the comparison to only those ≤ 20 years old, again we did not observe differences in the incidence of patella fracture between female and male patients (female:0.82%, male:0.86%, p=0.78)

Results

- 31.9% of fractures occurred in the first 90 days after MPFL-R
- 36.9% occurred between 90 days and 1 year
- 38.3% occurred after 1 year



Conclusions

- The incidence of patella fracture after MPFL-R was extremely low and did not differ between males and females.
- However, the odds of having a patella fracture after MPFL-R was significantly higher for patients aged 20 and under than for older patients.
- All of the observed fractures in this nationwide database were in younger patients, and a majority of fractures occurred during the first postoperative year.

Summary

- Although uncommon in this series, younger patients are at higher risk of patella fracture after MPFL reconstruction.

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Thank you

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