Characterization of Patients Undergoing Revision MPFL Reconstruction

Poster #22

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Disclosures

- Dr. Flanigan has been a consultant for Moximed, ConMed, Smith & Nephew, Depuy Synthes, Vericel, Hyalex, and Nanochan

- The other authors have no disclosures

Introduction

- The medial patellofemoral ligament (MPFL) is one of the most important stabilizers of the patella

- Reconstruction of the MPFL is a common surgical procedure used to restore stability in appropriately selected patients

- In the rare instance of MPFL reconstruction failure, revision procedures may be warranted

Objective of Study

- To characterize patients who underwent revision MPFL reconstruction including:

  - Demographic/social factors

  - Anatomical features

  - Surgical characteristics

Materials and Methods

- We identified patients who underwent MPFL reconstruction at our institution between 2008 and 2021

- Patient charts were analyzed retrospectively to collect:

  - Demographic information

  - Surgical procedures

  - Preoperative imaging measurements (tibial tubercle-trochlear groove [TT-TG] distance, sulcus angle)

  - Clinical exam findings

  - Intraoperative findings

- Data was compared between primary and revision MPFL cohorts

Results - Demographics

- 193 patients in primary MPFL cohort
  - 30 patients in revision MPFL cohort
- More females than males in each group
  - Primary MPFL: 73 male, 120 female
  - Revision MPFL: 10 male, 20 female
- BMI was significantly higher in the revision MPFL cohort

	Revision MPFL	Primary MPFL	P-value
Age (years)	23.3	23.7	0.389
BMI (kg/m^2)	29.8	27.0	**0.016**
Mean age of first dislocation	15.3	16.5	0.195

Table 1: Comparision of demographic information of patients undergoing primary and revision MPFL reconstruction

Results – Preoperative Imaging

	Revision MPFL	Primary MPFL	P-value
Mean TT-TG distance (mm)	24.7	17.5	**0.022**
Mean sulcus angle (degrees)	144.8	139.7	**0.007**
Clinical J-sign	40%	25.1%	**0.011**

Table 2: Preoperative imaging values for patients undergoing primary and revision MPFL reconstruction

Results – Surgical Characteristics

- Articular cartilage damage of patella (p<0.001)
  - Primary MPFL: 61 (31.9%)
  - Revision MPFL: 24 (80%)

- Concomitant tibial tubercle osteotomy (p = 0.319)
  - Primary MPFL: 35 (18.3%)
  - Revision MPFL: 8 (26.7%)

Conclusions

- Compared to patients undergoing primary MPFL reconstruction, patients undergoing revision MPFL reconstruction had significantly greater:
  - Percentage of patellar articular damage noted at time of surgery
  - TT-TG
  - Sulcus angle
  - Clinical J-sign

Significance of Findings

- Identifying risk factors for undergoing a revision MPFL reconstruction may:

    - Alter preoperative surgical planning to minimize risks of failure
    - Ensure proper preoperative risk/benefit discussion between physician and patients