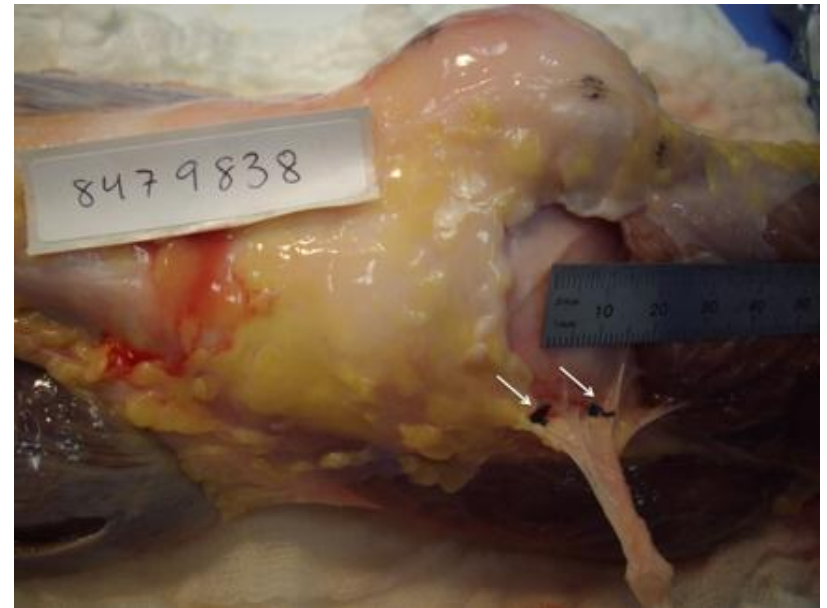


Anatomical Dissection and CT Imaging of the Medial Patellofemoral Ligament in Skeletally Immature Cadaver Knees

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Patella Dislocation and MPFL

- Relatively Common Injury
 - 41/100000 ages 10-17
 - Females <17 YO highest rates of secondary dislocation
 - Fithian et al AJSM 2004
- MPFL – important patellar stabilizer
 - One of the primary restraints to lateral patellar translation
 - Burks et al AJKS 1998, Conlan et al JBJS 1993, Desio AJSM 1998
- Good outcomes of MPFL reconstruction in adults
- What is the location of MPFL attachment on the Patella

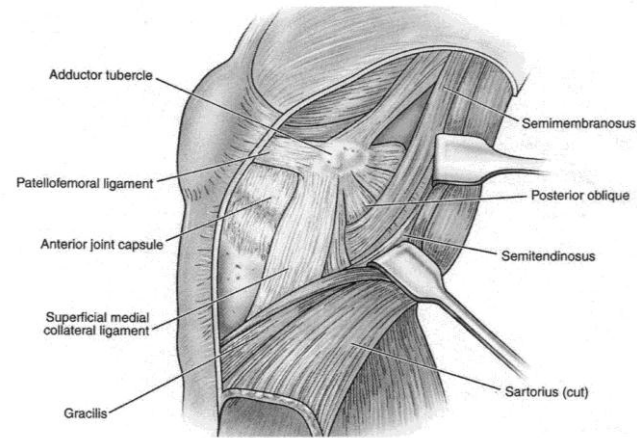
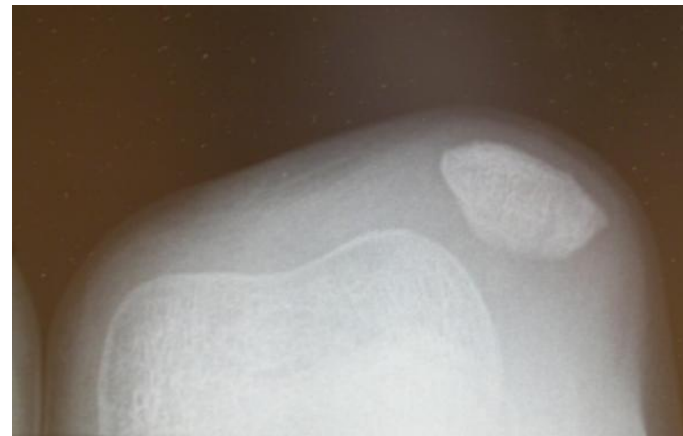
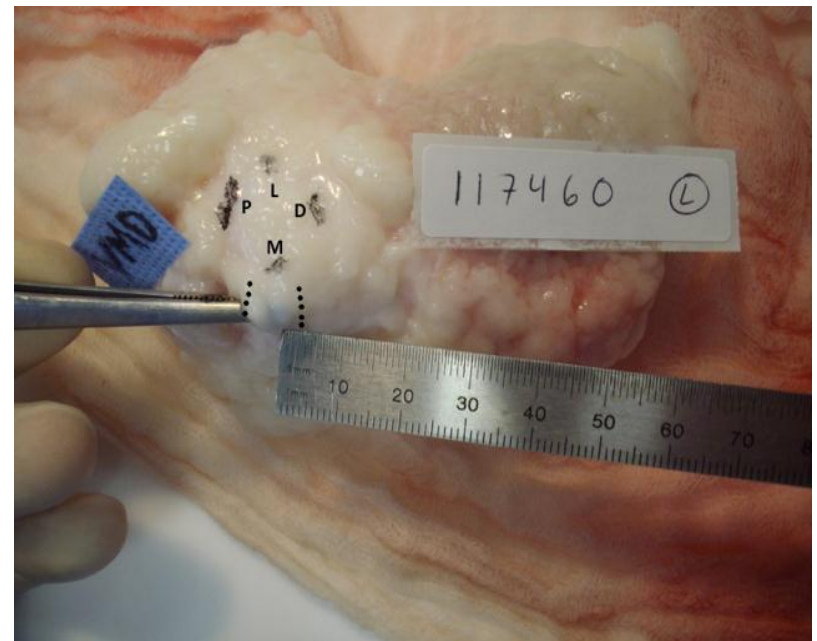


Fig. 3. Diagram of layer II medial side knee structures. (From Clarke HD, Scott WN, Insall JN, et al. Anatomy. In: Insall JN, Scott WN, editors. Surgery of the knee. Philadelphia: W.B. Saunders; 2001. p. 52; with permission.)



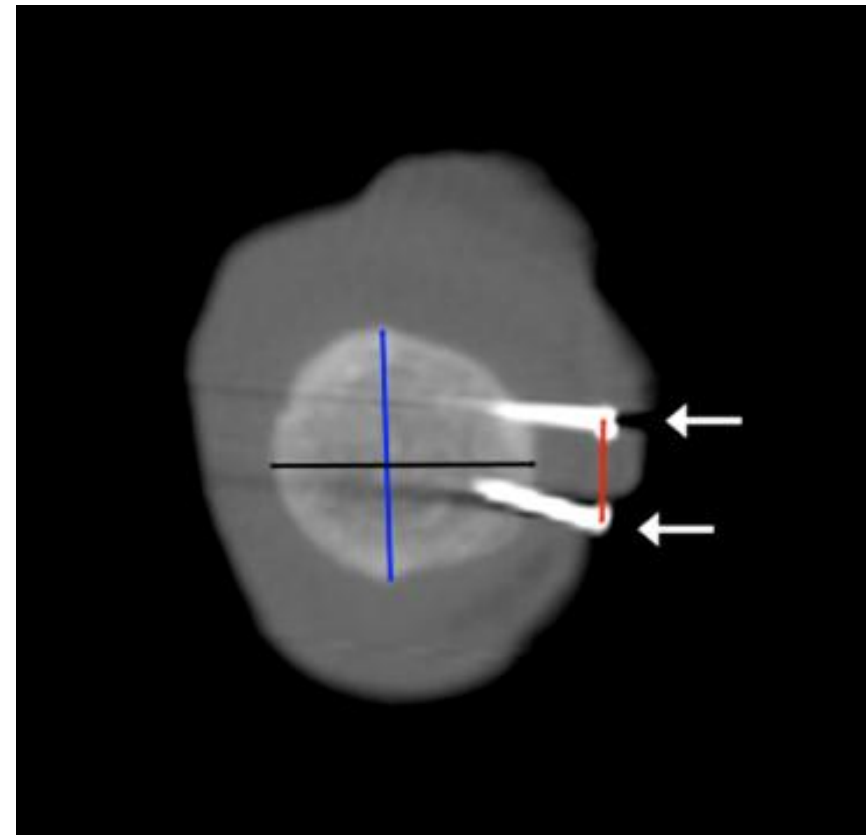
Methods

- 9 Pediatric Specimens
- Metallic Markers Placed
 - Origin of MPFL on Patella proximal and distal extent
- Distances Measured
 - Width of MPFL Patella Insertion
 - Patella Height and Width
 - Distance from MPFL insertion to midpoint of patella height
 - Proportion of Patella height and
 - Ruler
 - CT Scan



Results

- Mean Width 12 mm (8-18)
- Patella Height 31mm (20-48)
- Patella Width 27 mm (21-39)
- Center of MPFL 5 mm above midline of patella (-2 to 10)
- MPFL Footprint Span 41% of patella height (24-63%)



Conclusions

- Most adult studies – MPFL is upper ½ to 2/3 of medial patella border/height
- Peds series – some MPFL centers below the midpoint of patella
- Some extend into distal 1/3 of patella

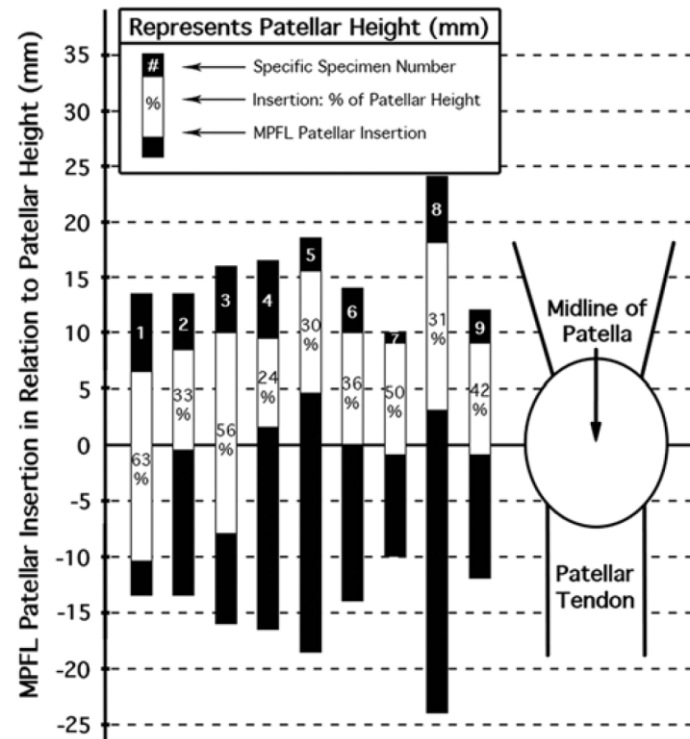


FIGURE 3. Diagram illustrating the MPFL insertion footprint width and its insertion on the medial border of the patella.

Discussion – Study Limitations

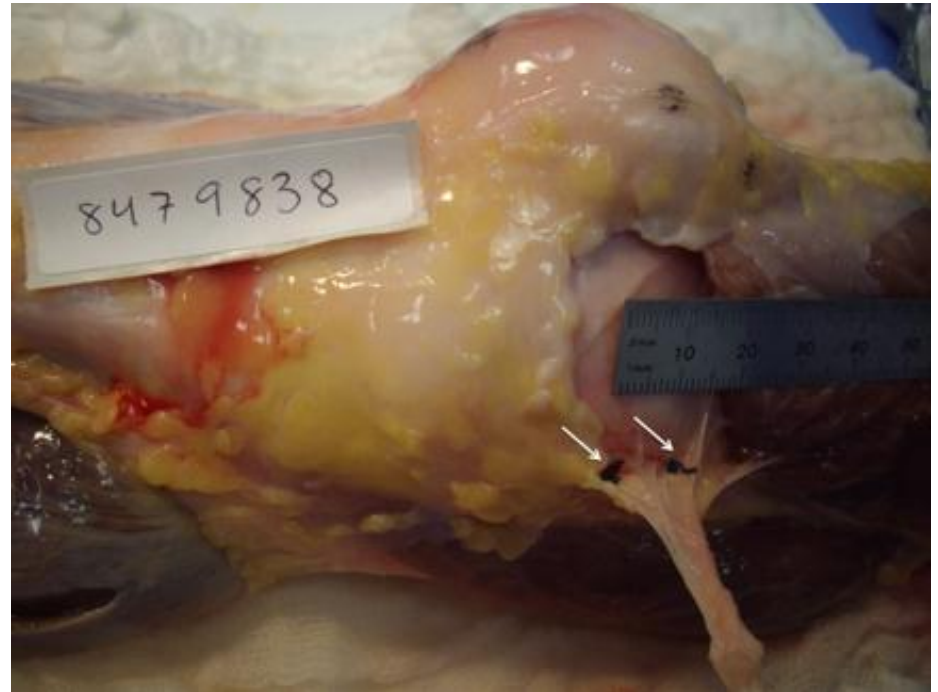
- Small Sample
 - 9 patients, 2 years to 11 years of age
- Limited number of specimens available in pediatric population
- Broader range of ages would be beneficial

TABLE 1. Specimen Demographics

Specimen No	Age (y)	Sex	Knee Side
1	2	Male	Right
2	3	Female	Right
3	3	Male	Left
4	8	Male	Right
5	8	Female	Right
6	10	Female	Right
7	10	Female	Left
8	10	Male	Right
9	11	Male	Right

Conclusions

- The relationship of the MPFL patella origin footprint in the skeletally immature is not well understood
- These findings may be useful to surgeons performing MPFL reconstructions in skeletally immature patients.



Thank You

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