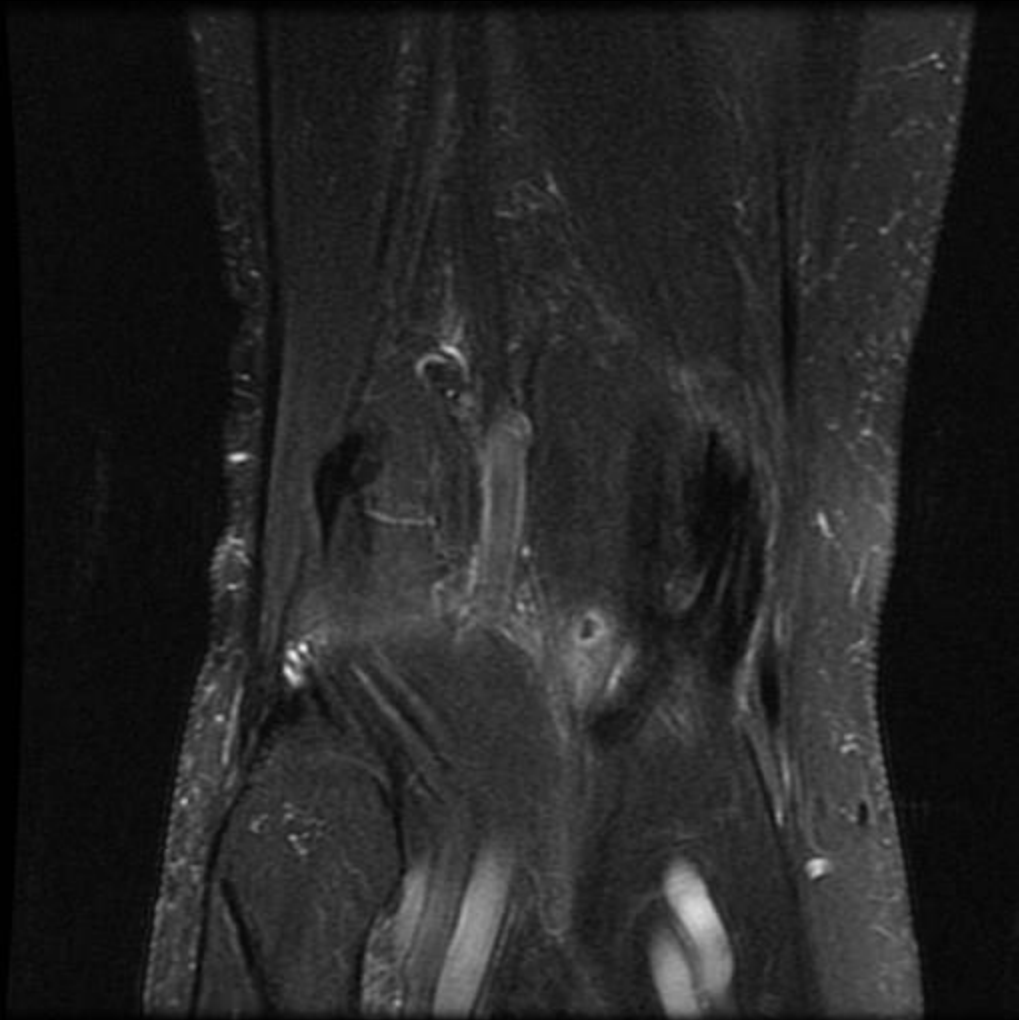




61 yr old woman with medial knee pain

Valentin Lance

8/21/15







Followup 5 weeks later

“Prequel” findings in posterior horn medial meniscal root tear

- Subcortical marrow edema deep to the posterior horn medial meniscus root anchor is predictive of subsequent meniscal root tear
- Marrow edema may be secondary to from abnormal stresses on the posterior root

Posterior horn medial meniscal root tear: the prequel

**H. Umans • W. Morrison • G. S. DiFelice • N. Vaidya •
C. S. Winalski**

- Retrospective examination of 15 knee MRIs in patients with posterior horn medial meniscal tear and who also had an antecedant MRI pre-tear
- Compared with a control group without root tears

Posterior horn medial meniscal root tear: the prequel. Umans H
et al. *Skeletal Radiol.* 2014;43(6):775-80

- Results: 73% of cases with subsequent posterior horn medial meniscal root tear demonstrated linear subcortical marrow edema deep to the root anchor insertion on antecedant MRI

Posterior horn medial meniscal root tear: the prequel. Umans H
et al. *Skeletal Radiol.* 2014;43(6):775-80

- At followup MRI, 69% of patients with complete tear of the posterior horn medial meniscal root had meniscal extrusion
- 69% had interval cartilage loss in the medial femorotibial compartment

Table 1 PHMMR tear cases and controls

		Complete PHMMR Tear ^a n=13	p value ^b	Partial PHMMR Tear ^a n=13	p value ^b	All PHMMR Tear ^a n=13	p value ^b	Intact (controls) n=29
BM								
		Complete PHMMR Tear^a n=13				Intact (controls) n=29		
Cys								
BME	Initial	11 (85 %)				1 (3 %)	<0.0001	1 (3 %)
	Follow-up	2 (15 %)				0	n/a	0
Thi								
	Initial	1 (8 %)	<0.4	1 (50 %)	<0.0003	2 (13 %)	<0.04	3 (10 %)
	Follow-up	9 (69 %)	<0.0001	1 (50 %)	<0.07	10 (67 %)	<0.0001	3 (10 %)
Meniscal extrusion								
	Initial	1 (8 %)	<0.0001	1 (50 %)	<0.0003	2 (13 %)	<0.04	1 (3 %)
	Follow-up	9 (69 %)	<0.0001	1 (50 %)	<0.07	10 (67 %)	<0.0001	3 (10 %)
Gray root								
	Initial	7 (54 %)	<0.0001	0	n/a	7 (47 %)	<0.0003	4 (14 %)
	Follow-up	2 (15 %)				9 (60 %)	<0.0001	4 (14 %)

BME subcortical edema-like signal deep to PHMMR anchor point; *Cystic change* focal fluid-like signal deep to PHMMR anchor point

^a PHMMR status at follow-up MRI

^b Comparison between case and control groups

Pathophysiology

- Thought to result from abnormal stress on the posterior horn meniscal root, as it resolves on complete tearing of the meniscal root in the majority of cases
- The posterior horn medial meniscal root is essential for proper functioning of the medial meniscus in load transmission

Shiny corner: the “Sequel” lesion?

SCIENTIFIC ARTICLE

The shiny corner of the knee: a sign of meniscal osteochondral unit dysfunction

Eric Y. Chang • Karen C. Chen • Christine B. Chung

The shiny corner of the knee: a sign of meniscal osteochondral unit dysfunction. Chang E et al. *Skeletal Radiol.* 2014;43:1403-1409

- Concept of medial meniscal-osteochondral unit: the menisci and covered portions of the tibial plateau
- “Shiny corner” or marrow edema at a meniscal covered portion of the tibial plateau was associated with tears of the medial meniscus, root ligament, and meniscal extrusion

Summary

- Tearing of the posterior horn medial meniscal root is associated with meniscal extrusion and development of medial compartment cartilage loss
- Edema subjacent to an intact meniscal root may predict tear
- Increased marrow signal at the peripheral meniscal covered tibial plateau is highly associated with meniscal and root injury

References

1. Posterior horn medial meniscal root tear: the prequel. Umans H et al. *Skeletal Radiol.* 2014;43(6):775-80
2. The shiny corner of the knee: a sign of meniscal osteochondral unit dysfunction. Chang E et al. *Skeletal Radiol.* 2014;43:1403-1409