



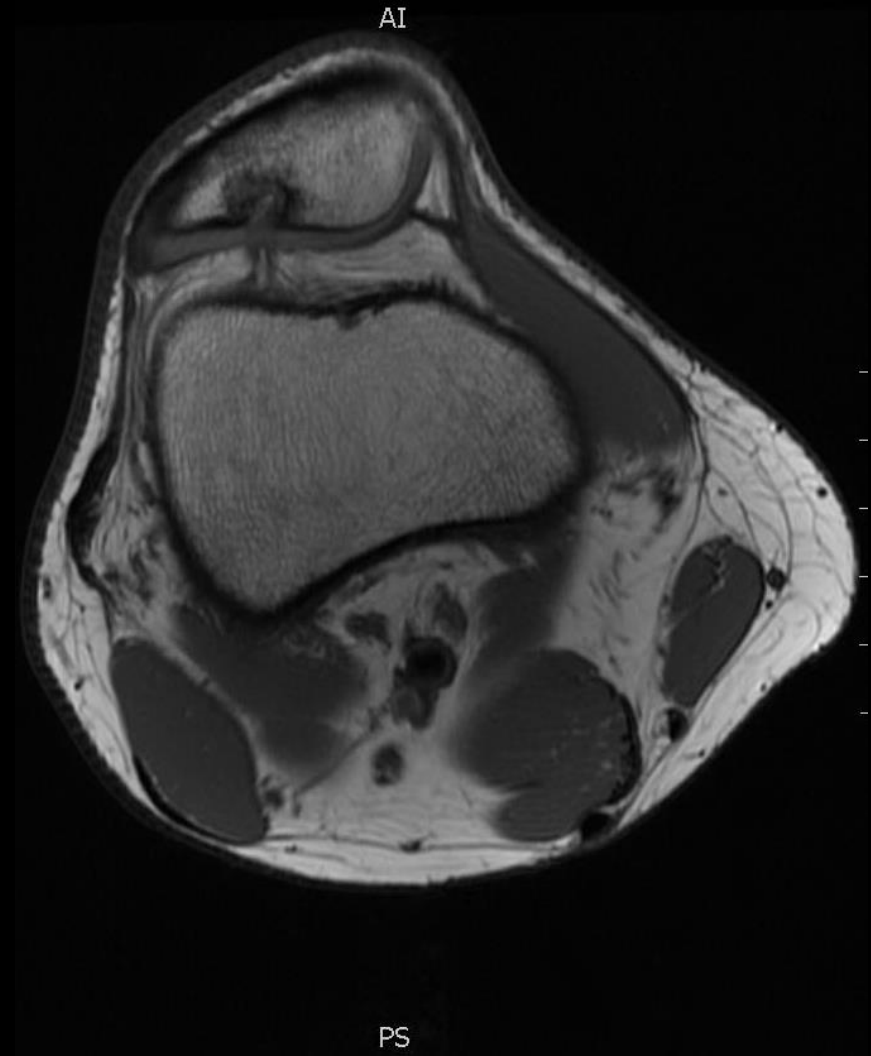
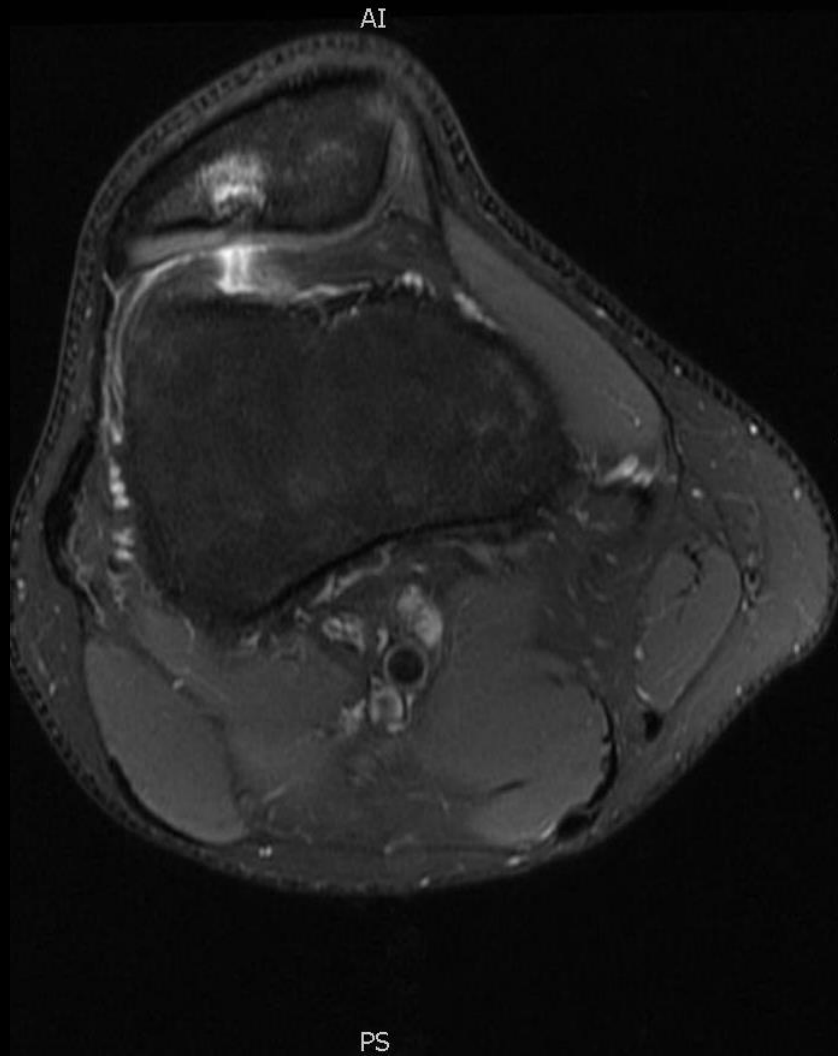
20 year old male with chronic knee pain

Eric Rupe PGY2

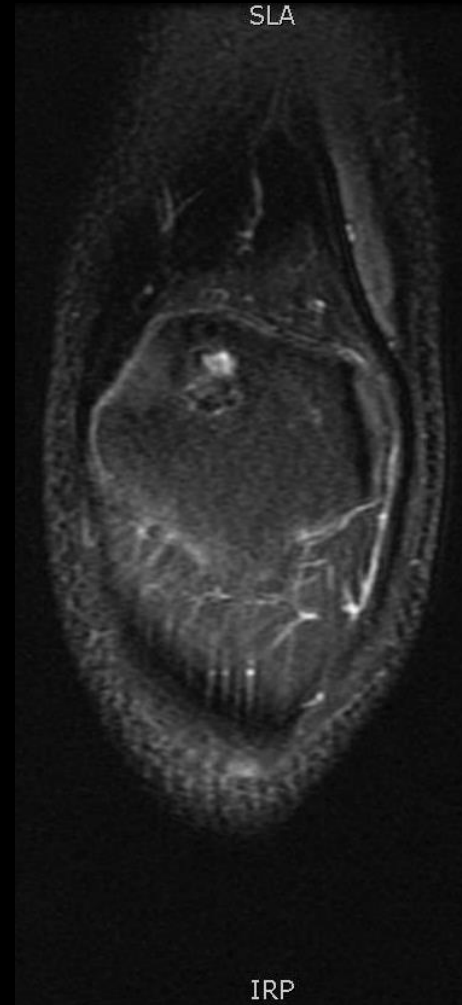
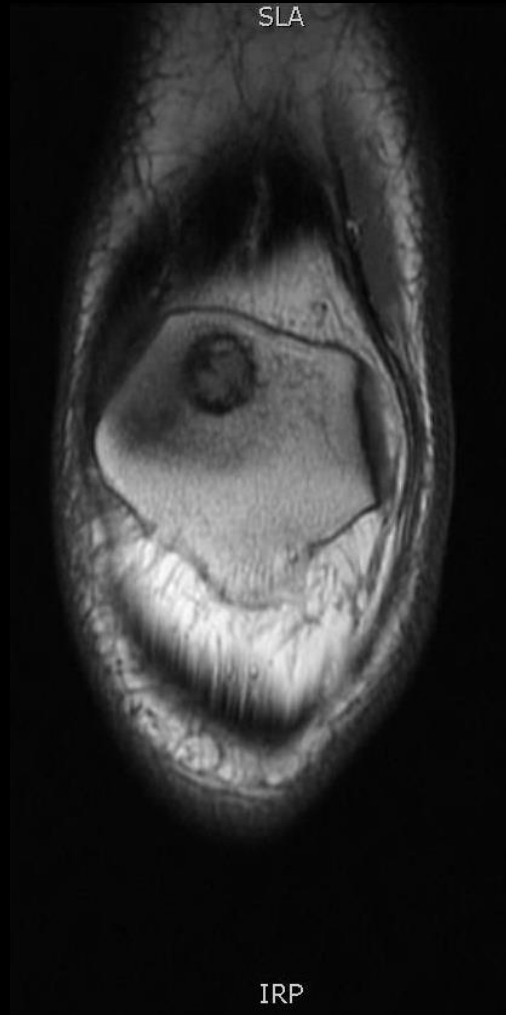
20 year old male with chronic knee pain

- 20 year old male UCSD student with 5-6 years of knee pain localized to the distal femur.
- His stated history was “started with fractures in knees, now more pain the longer I stand/walk.”
- Ordering provider history was “x-ray shows lucency consistent with bone cyst of distal femur. Please evaluate for chronic pain”

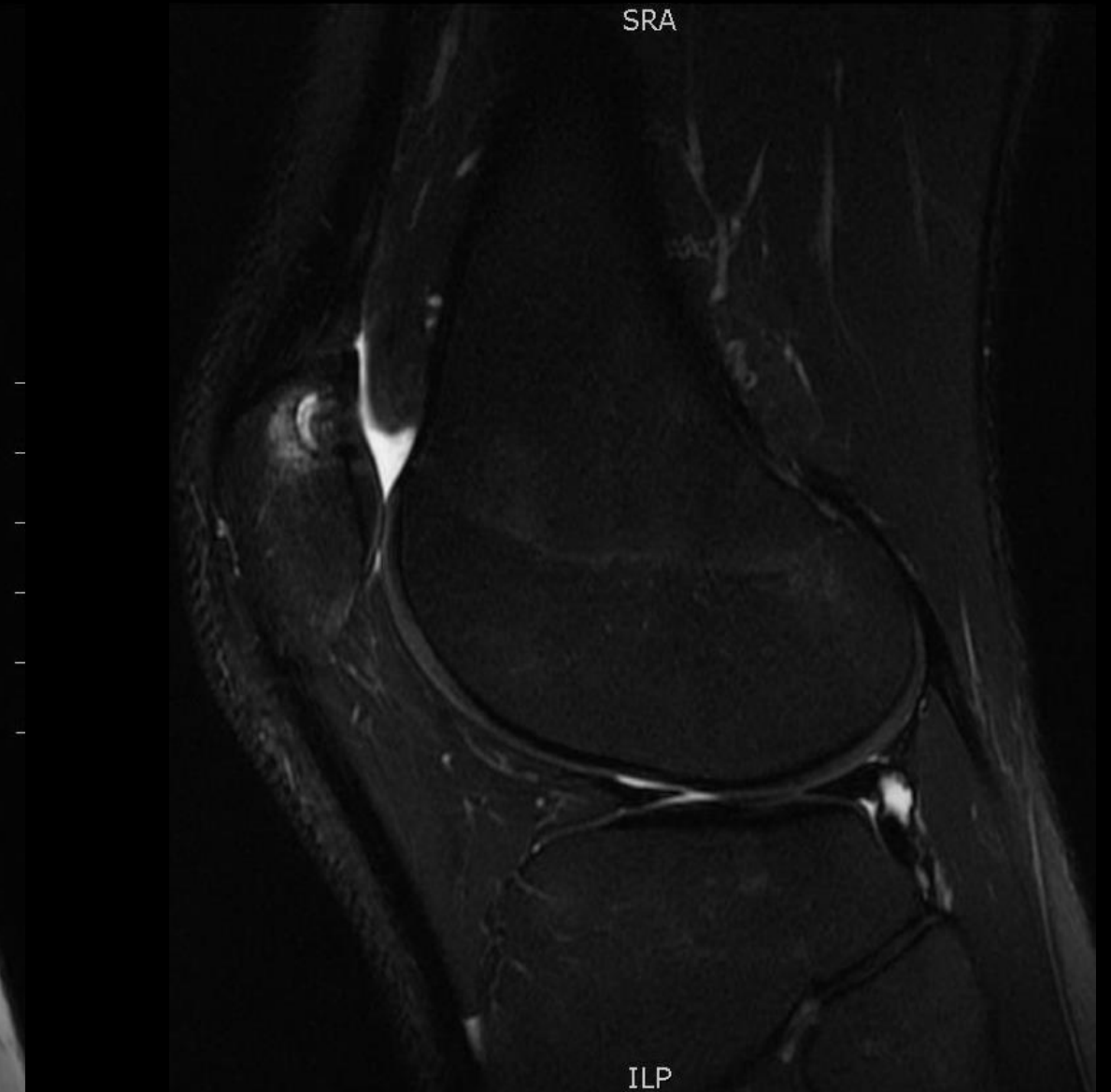
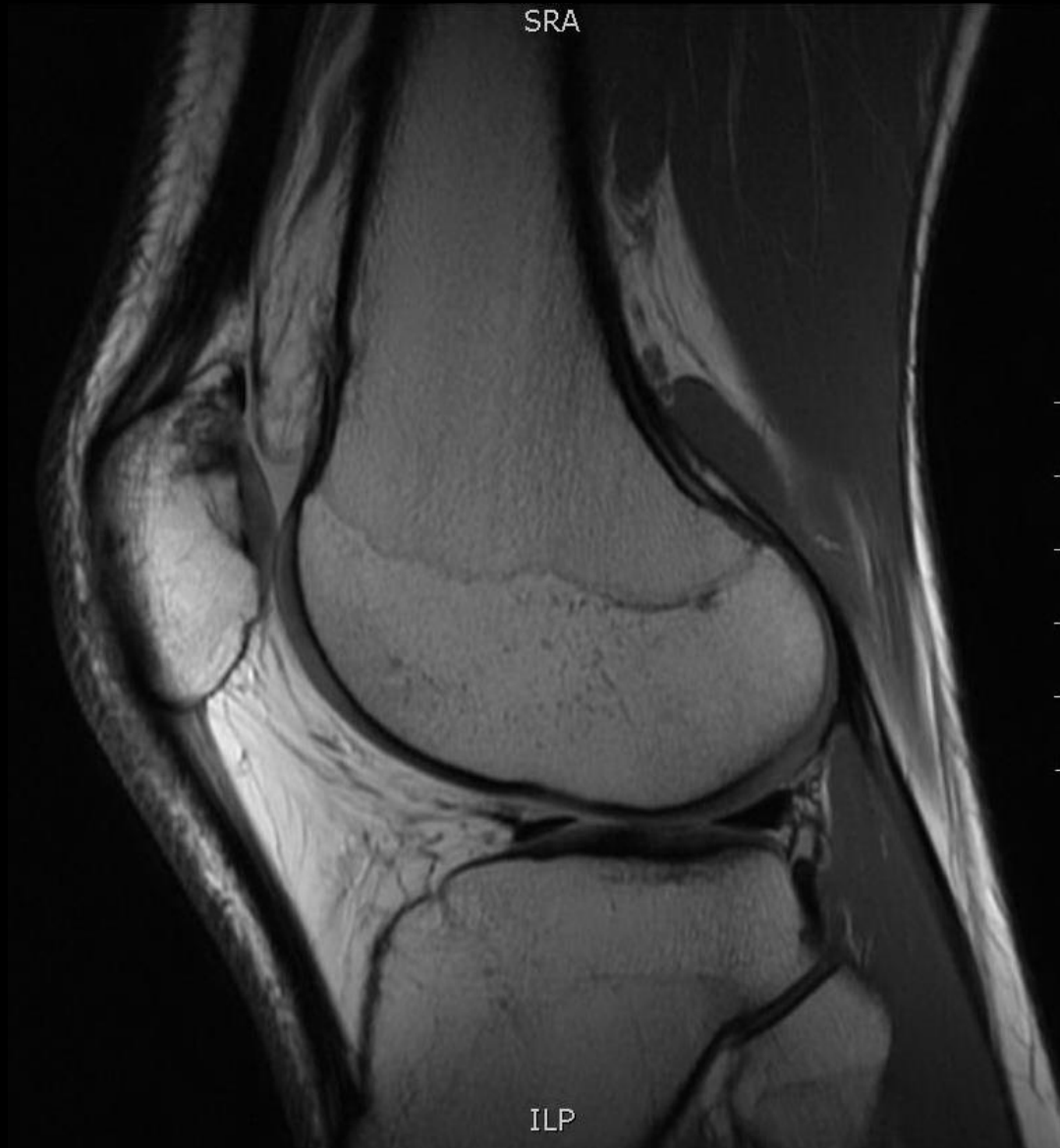
One notable finding



One notable finding



One notable finding



Dorsal defect of the patella

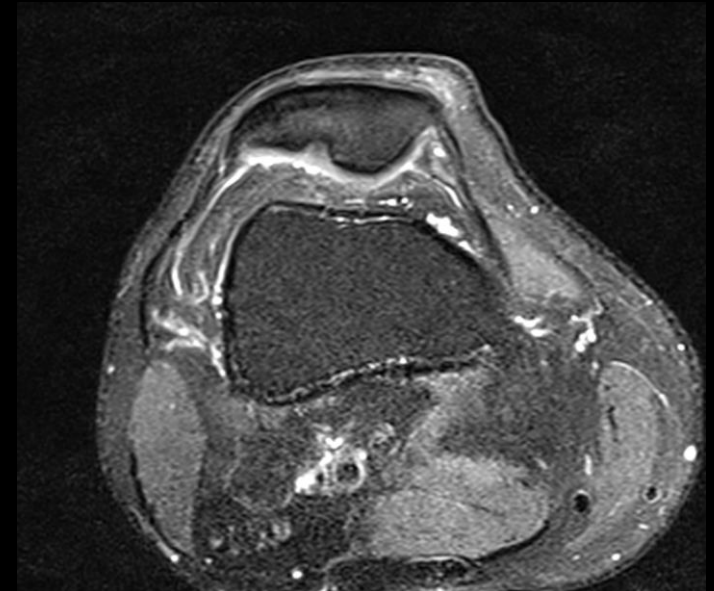
- Osseous defect in posterior patella covered by normal articular cartilage
- Well-defined lucent lesion, usually in superolateral quadrant of patella
- Defect may become smaller & sclerotic over time
- Debated whether it is anomaly of ossification or stress-related

Dorsal defect of the patella

- 1:1 M:F, 0.3-1.0% of population¹
- Most frequently found in adolescents
- Often bilateral
- Lucency with surrounding sclerosis on radiograph
- MR: Low signal on on T1WI, high signal on T2WI⁴



Asymptomatic 15 yo Male²



Proton density³

Differential Diagnosis

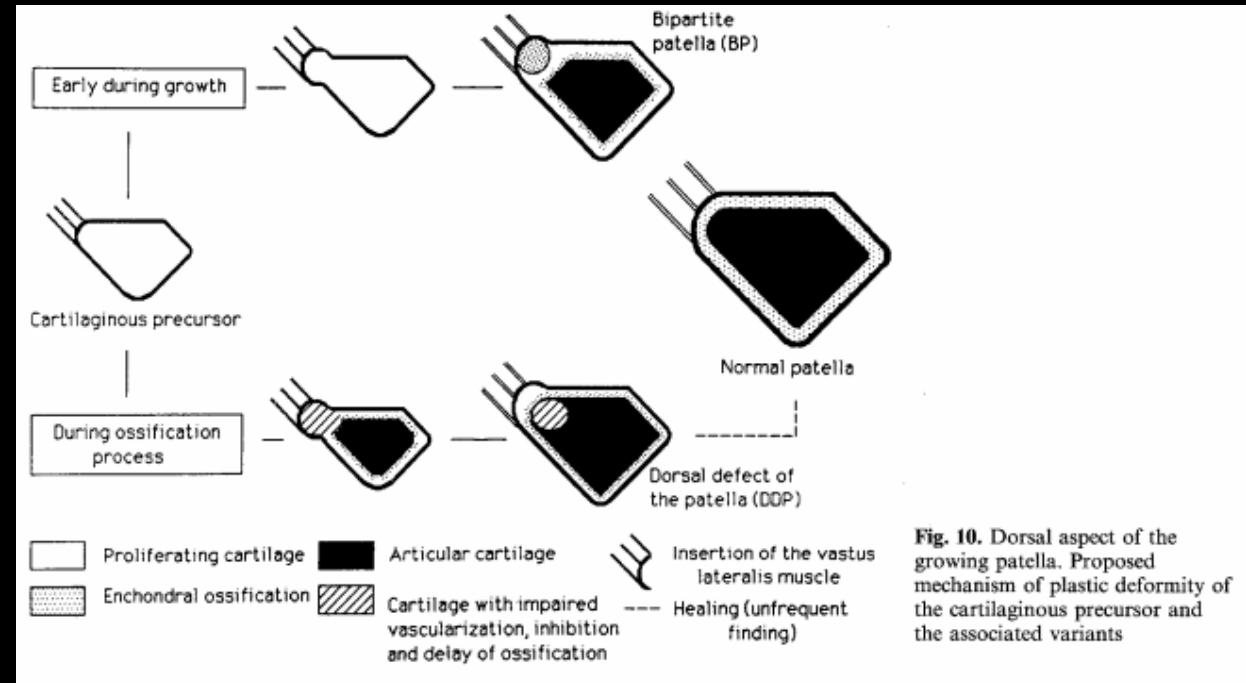
- Chondromalacia of the patella
- Osteochondral defect
- Multipartite or bipartite patella
 - Frequently found concomitantly, same patella or contralateral patella
- Intraosseous ganglion
- Osteomyelitis (Brodie's abscess)

Symptomatic dorsal defects

- Many sources describe them as normal variants, asymptomatic
- Original paper from 1976, Haswell *et al.*, described 6 out of 16 cases of the cases to be symptomatic
- 1986 – orthopedist Gamble out of Stanford described 1 symptomatic case, surgical resected, improved
- 1987 – van Holsbeeck *et al.* describes 6 cases and their natural history
- 1993 – Sueyoshi *et al.* describe 2 symptomatic cases, which were resected, resolved

Histopathology, pathophysiology

- Dense fibrous connective tissue and fragmented and necrotic bone, non-specific
- Van Holsbeeck *et al.* suggest traction lesion at the insertion of the vastus lateralis, not ulceration of articular cartilage, supported by association of findings with subluxation of the patella.



More recent articles

- Locher S, Anderson S, Ballmer FT. [Noninvasive management of a dorsal patellar defect](#). Arch Orthop Trauma Surg. 2002 Nov;122(8):466-8. Epub 2002 Mar 1. PubMed PMID: 12442186.
- Villas C, Pons-Villanueva J. [Dorsal defect of the patella with fracture in a teenager](#). Musculoskelet Surg. 2010 Nov;94(2):93-7. doi: 10.1007/s12306-010-0074-7. Epub 2010 Apr 21. PubMed PMID: 20407856.
- Narváez J, Narváez JA, Clavaguera MT, Gil M, Sánchez-Márquez A, Nolla-Solé JM. [Dorsal defect of the patella: an uncommon cause of knee pain](#). Arthritis Rheum. 1996 Jul;39(7):1244-5. PubMed PMID: 8670338.

References

1. Ho VB, Kransdorf MJ, Jelinek JS, et al. Dorsal defect of the patella: MR features. J Comput Assist Tomogr 1991; 15:474.
2. Haswell DM, Berne AS, Graham CB. [The dorsal defect of the patella](#). Pediatr Radiol. 1976 Aug 20;4(4):238-42. PubMed PMID: 15822879.
3. Case courtesy of Dr Daniel Zimmermann Stefani, Radiopaedia.org. From the case rID: 30403
4. Gamble JG. [Symptomatic dorsal defect of the patella in a runner](#). Am J Sports Med. 1986 Sep-Oct;14(5):425-7. PubMed PMID: 3777323.
5. Sueyoshi Y, Shimosaki E, Matsumoto T, Tomita K. [Two cases of dorsal defect of the patella with arthroscopically visible cartilage surface perforations](#). Arthroscopy. 1993;9(2):164-9. PubMed PMID: 8461074.
6. van Holsbeeck M, Vandamme B, Marchal G, Martens M, Victor J, Baert AL. [Dorsal defect of the patella: concept of its origin and relationship with bipartite and multipartite patella](#). Skeletal Radiol. 1987;16(4):304-11. PubMed PMID: 3112959.