

A rare case: chondral delamination in the knee

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ABSTRACT

We aimed to present the clinical and radiological features of a case of large-sized, discrete chondral delamination in the lateral femoral condyle of an 11-year-old girl, following trauma caused by inward rotation of her right knee.

Keywords: Cartilage, knee injuries, MRI

This case was presented as a poster presentation at the 44th National Radiology Congress (TÜRKRAD 2023). Apart from this, it has not been published anywhere else and has not been sent for publication elsewhere at the same time.

INTRODUCTION

Chondral delamination is the separation or debonding of the articular cartilage from the underlying subchondral bone at the tidemark forming an unstable cartilage flap that is at risk for complete detachment from the adjacent cartilage, causing full-thickness defects and intra-articular loose bodies.¹⁻⁴ We present the clinical and radiological features of a case of large-sized, discrete chondral delamination in the lateral femoral condyle after trauma.

CASE

An 11-year-old girl was referred to our department with complaints of knee pain and limitation of movement following trauma caused by inward rotation of her right knee. On physical examination, he had limited knee movements and severe pain. Plain x-ray examination was performed. No fracture was observed on the plain x-ray, and the patella appeared to be lateral subluxated (**Figure 1**).



Figure 1. Knee x-rays, subluxation of the patella



Knee magnetic resonance imaging (MRI) was planned. In knee MRI; Bone marrow edema compatible with contusion was observed in a focal area distal to the lateral condyle of the femur and a 2.5 cm loss of integrity in the cartilage at this level (**Figure 2**). The amount of intra-articular fluid in the knee increased and there was a free

cartilage fragment within the joint (**Figure 3**). In the lateral subluxation of the patella, subchondral local bone marrow edema was observed in the medial part of the patella, thickening and increased signal in the medial retinaculum adjacent to this area, and occasional loss of integrity in some fibers was noted (**Figure 3**).



Figure 2. T2-weighted sagittal and coronal images; femoral lateral condyle bone marrow edema and loss of integrity in cartilage at this level (yellow arrows)

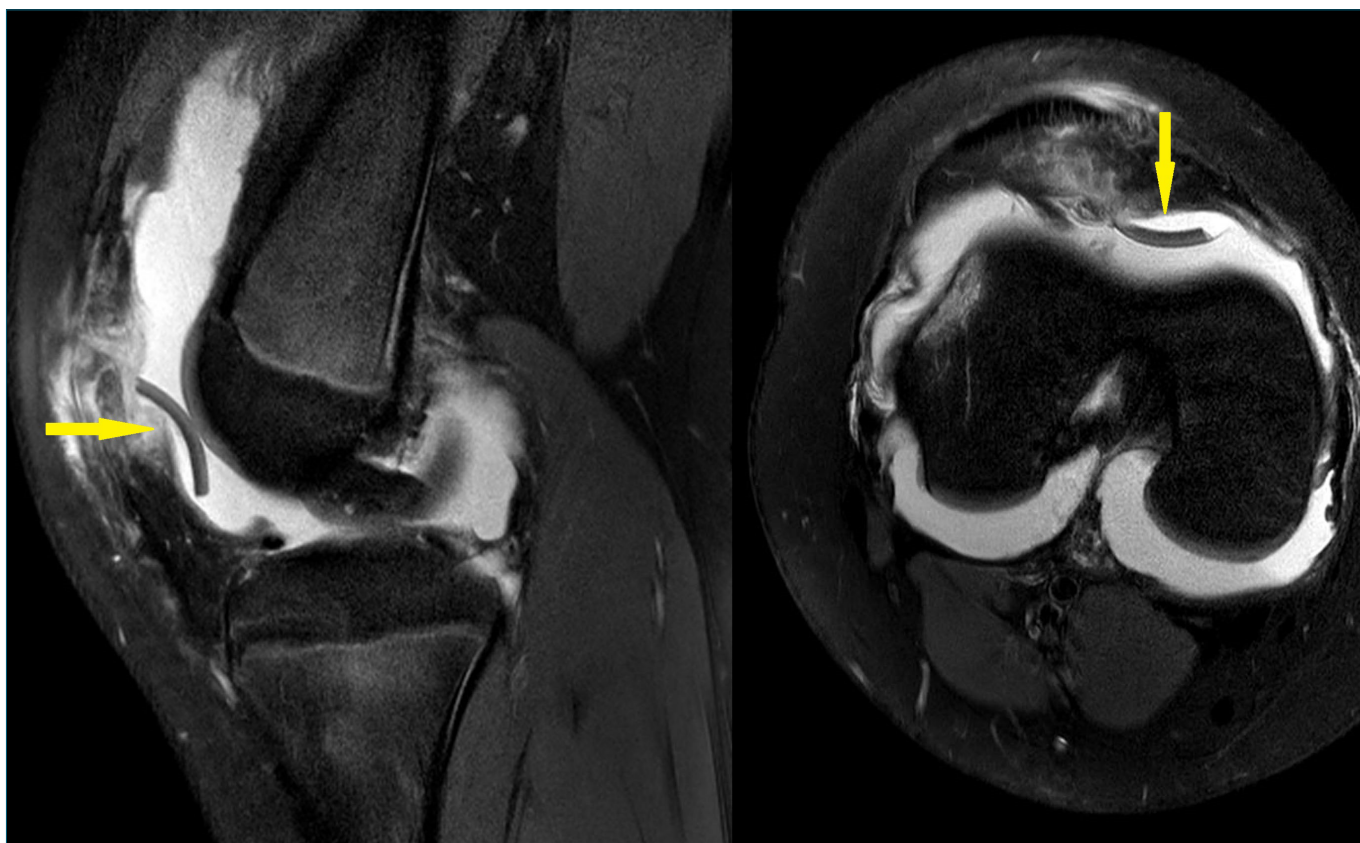


Figure 3. T2-weighted sagittal and axial images; femoral lateral condyle bone marrow edema and loss of integrity in cartilage at this level (yellow arrows)

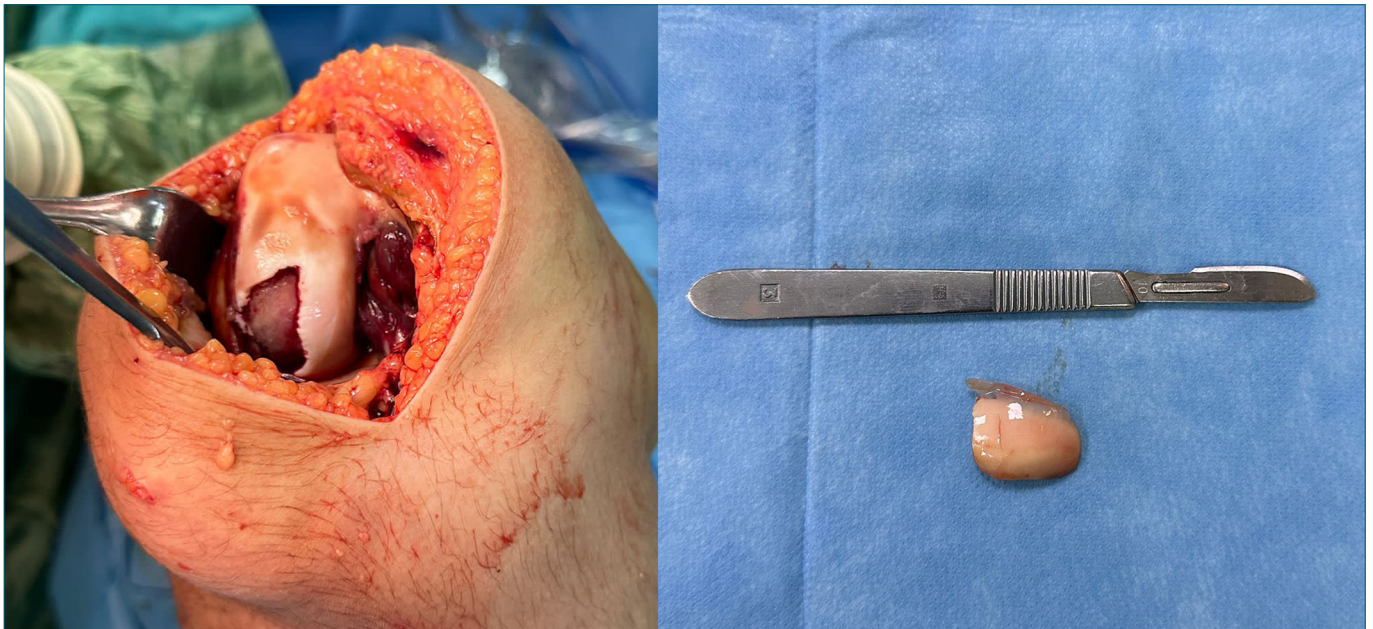


Figure 4. Operation images, 2.5 cm chondral fracture

Cruciate ligaments and menisci were observed naturally. The patient was taken into operation with the diagnosis of chondral delamination. During the operation, it was determined that there was a 2.5 cm chondral fracture and it was repaired (**Figure 4**).

DISCUSSION

Chondral injuries in the knee have been reported mostly in association with meniscus tears and ligament injuries.^{1,5,6} Diagnosis is based primarily on clinical suspicion, such as the presence of discomfort associated with effusion and swelling during or after physical activity. Sometimes accurate diagnosis can be difficult as it may resemble other pathologies such as meniscus lesions.^{5,6} Plain x-rays are usually normal. An MRI study is essential in the evaluation and is mandatory to confirm the diagnosis and assist in preoperative planning. This case was related to patellar subluxation. Additionally, there was patellar subluxation in this case.^{1,2,4,5,7}

CONCLUSION

Identifying and appropriately treating these injuries results in a better prognosis for patients with chondral delamination.

ETHICAL DECLARATIONS

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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