



## Case report

# Avulsion fracture of the posterior cruciate ligament in an uncommon location associated with distal injury to the patellar ligament<sup>☆</sup>



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### ABSTRACT

Avulsion fractures of the posterior cruciate ligament in unusual locations are rare injuries. We report the first case in the literature of an avulsion fracture of the posterior cruciate ligament associated with distal injury to the patellar ligament. The aim of this study was to present a novel case, the therapy used and the clinical follow-up.

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### Fratura avulsão do ligamento cruzado posterior em uma localização incomum associada a lesão distal do ligamento patelar

#### RESUMO

A fratura avulsão do ligamento cruzado posterior em localização não usual é uma lesão rara. Relatamos o primeiro caso da literatura de uma fratura avulsão do ligamento cruzado posterior associada a lesão distal do ligamento patelar. O objetivo deste estudo foi apresentar um caso inédito, a terapêutica adotada e o seguimento clínico.

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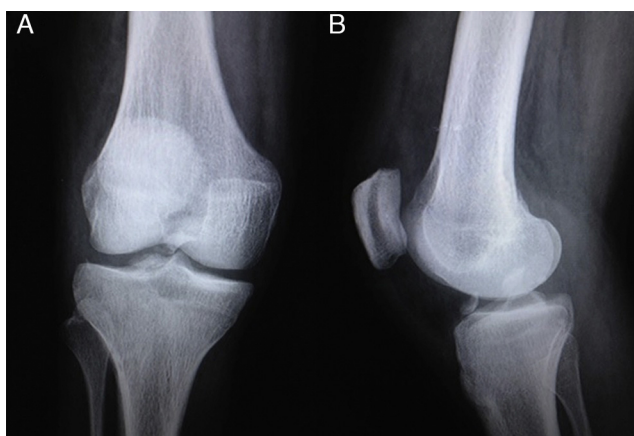
<sup>☆</sup> Study carried out at Centro de Cirurgia do Joelho, Instituto Nacional de Traumatologia e Ortopedia (Into), Rio de Janeiro, RJ, Brazil.

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**Fig. 1 – Preoperative radiography of the right knee (A) AP view and (B) profile view.**

## Introduction

The avulsion fracture of the posterior cruciate ligament (PCL) is considered a rare injury.<sup>1</sup> The unusual location of this lesion, as well as the fact that it occurred simultaneously with the distal avulsion of the ipsilateral patellar ligament, makes this case even more unusual.

The objective of this research was to present the first case of the avulsion fracture of PCL in an unusual location, associated with distal rupture of the ipsilateral patellar ligament.

## Case report

A 17-year-old male, healthy individual, who suffered trauma due to a motorcycle accident, immediately developed pain, hemarthrosis and inability to walk. The patient was taken to the emergency room and was transferred to our institute one week after suffering the injury. Physical examination disclosed ++/++++ edema in his right knee and range of motion of 30–70°.

The right knee radiography showed a tibial bone fragment located in the intercondyle with preserved patellar height (Fig. 1). Magnetic resonance imaging (MRI) of the right knee was performed to better clarify the lesion and plan the surgical approach, considering that clinical examination was hindered by the presence of hemarthrosis and joint limitation. The right knee MRI showed distal patellar ligament rupture, and an avulsion fracture of the PCL with a bone fragment located in the intercondyle (Fig. 2).

The surgical procedure took place two days after admission, with the patient in the supine position. A tourniquet was used and an anterior straight incision was made in the knee to reach the patellar ligament, whereas another posteromedial incision was made with the knee bent to reach the avulsion fracture of the PCL. The surgical technique employed was the open reduction and osteosynthesis, with a 3.5 mm cannulated screw with a full screw thread bolt for the avulsion fracture of PLC (Fig. 3). Osteosynthesis was tested by careful bending the knee joint. Regarding the patellar ligament, a distal rupture

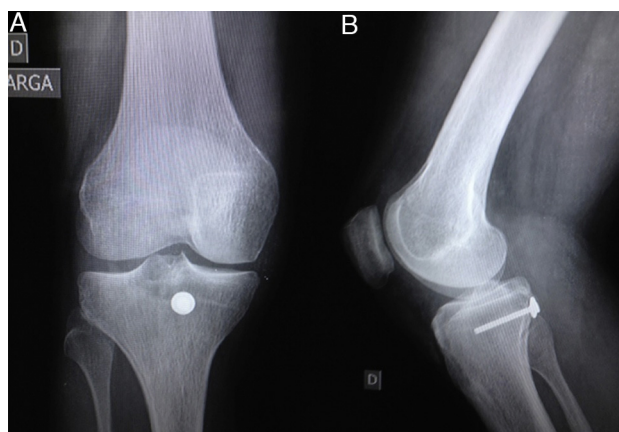


**Fig. 2 – Preoperative MRI of the right knee.**

was observed, which was sutured with transosseous holes and 2.0 ethibond wire.

A long knee immobilizer was used for six weeks of the postoperative period, which was removed to perform active rehabilitation exercises to prevent quadriceps atrophy. The range of motion went from 0 to 120° and total knee function was attained within six months.

The patient was reevaluated after one week, 15 days, one month, 45 days, two months and after that, monthly until the sixth month of evolution, when the consultations occurred quarterly. Patient follow-up was carried out for one year by clinical and radiographic control and he returned to his usual activities. These regular activities were walking without pain complaints and recreational soccer twice a week. In the functional knee evaluation, we used the modified Lysholm



**Fig. 3 – Postoperative radiography of the right knee (A) AP view and (B) profile view.**

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