Journal of Clinical Orthopaedics and Trauma xxx (2018) xxx–xxx

Contents lists available at ScienceDirect

Journal of Clinical Orthopaedics and Trauma

journal homepage: www.elsevier.com/locate/jcot

Case report

Descending genicular artery injury following transient lateral patellar dislocation

Andrea Silvestri[a,*], Dario Regis[a], Giacomo Trivellin[b], Marco Piccoli[a], Mauro Spina[c], Bruno Magnan[a], Andrea Sandri[a]

[a] Department of Orthopaedic and Trauma Surgery B, Integrated University Hospital, Polo Chirurgico Confortini, Piazzale A. Stefani 1, 37126 Verona, Italy[1]
[b] Department of Orthopaedic and Trauma Surgery, Casa di cura Pederzoli, Via Monte Baldo 24, 37019 Peschiera d/G, Verona, Italy
[c] Department of Orthopaedic and Trauma Surgery A, Integrated University Hospital, Polo Chirurgico Confortini, Piazzale A. Stefani 1, 37126 Verona, Italy[2]

ARTICLE INFO

Article history:
Received 25 January 2018
Received in revised form 19 February 2018
Accepted 24 February 2018
Available online xxx

Keywords:
Lateral patellar dislocation
Descending genicular artery
Medial patellofemoral ligament
Arterial injury
Angiographic embolization

ABSTRACT

Transient lateral patellar dislocation (TLPD) is a common lesion in young adults. Vascular injury as a complication of TLPD has not been previously described. We report a case of descending genicular artery (DGA) injury after TLPD. Immediate angiography demonstrated rupture of DGA. Embolization was performed with sudden interruption of bleeding. DGA injury should be considered as a complication after TLPD and prompt diagnosis and intervention are required. We propose selective embolization as a safe and effective procedure to stop bleeding.

1. Introduction

Transient lateral patellar dislocation (TLPD) is common in young and active patients as a consequence of low-energy traumas in sports and physical activity and may be complicated by patellofemoral chondral lesions as well as damage to the medial patellar stabilizers.[1,2]

Injuries of vessels supplying medial capsular ligamentous structures of the knee have been rarely described following knee surgical procedures [3–8] and trauma.[9] We report a case of descending genicular artery (DGA) injury after a TLPD requiring an urgent angiographic coil embolization. To our knowledge, this occurrence has not previously been described. The diagnostic strategy and treatment are discussed.

2. Case report

A 27-year-old male patient was admitted to the Emergency Department because of a right knee haematoma after a TLPD which occurred during tennis activity two hours before. The patient felt lateral patellar dislocation after a sudden change of direction, subsiding after a few moments. He experienced a similar episode to the left knee one year before.

Physical examination revealed a large swelling in the medial side of the right knee with no signs of patellar dislocation or subluxation; the range of motion (ROM) was limited by severe pain. No collateral or cruciate ligament instability was detected.

The lower limb was warm and the peripheral pulses were strong and symmetrical. No acute peripheral nervous deficiency was observed. A complete blood count showed normal values. Knee x-rays ruled out fractures or dislocation. A color doppler ultrasound exam revealed an extensive haematoma, especially located in the medial aspect of the knee, with no pulsatile masses. One hour later, knee swelling increased, and an urgent contrast-enhanced CT showed a 10 cm haematoma supplied by active bleeding from a thin distal branch of the DGA (Fig. 1A, B). Immediate angiography of the left common femoral artery demonstrated contrast medium extravasation from distal branch of the DGA (Fig. 2A). Embolization was successfully performed using micro metal coils and Spongostan (Fig. 2B), and no further

* Corresponding author at: Unità Operativa di Ortopedia e Traumatologia B, Azienda Ospedaliera Universitaria Integrata, Polo Chirurgico Confortini, Piazzale A. Stefani 2, 37126, Verona, Italy.
E-mail address: andrea.silvestri@studenti.univr.it (A. Silvestri).
[1] ortopedia.b@aovr.veneto.it.
[2] ortopedia.a@aovr.veneto.it.

https://doi.org/10.1016/j.jcot.2018.02.013
0976-5662/

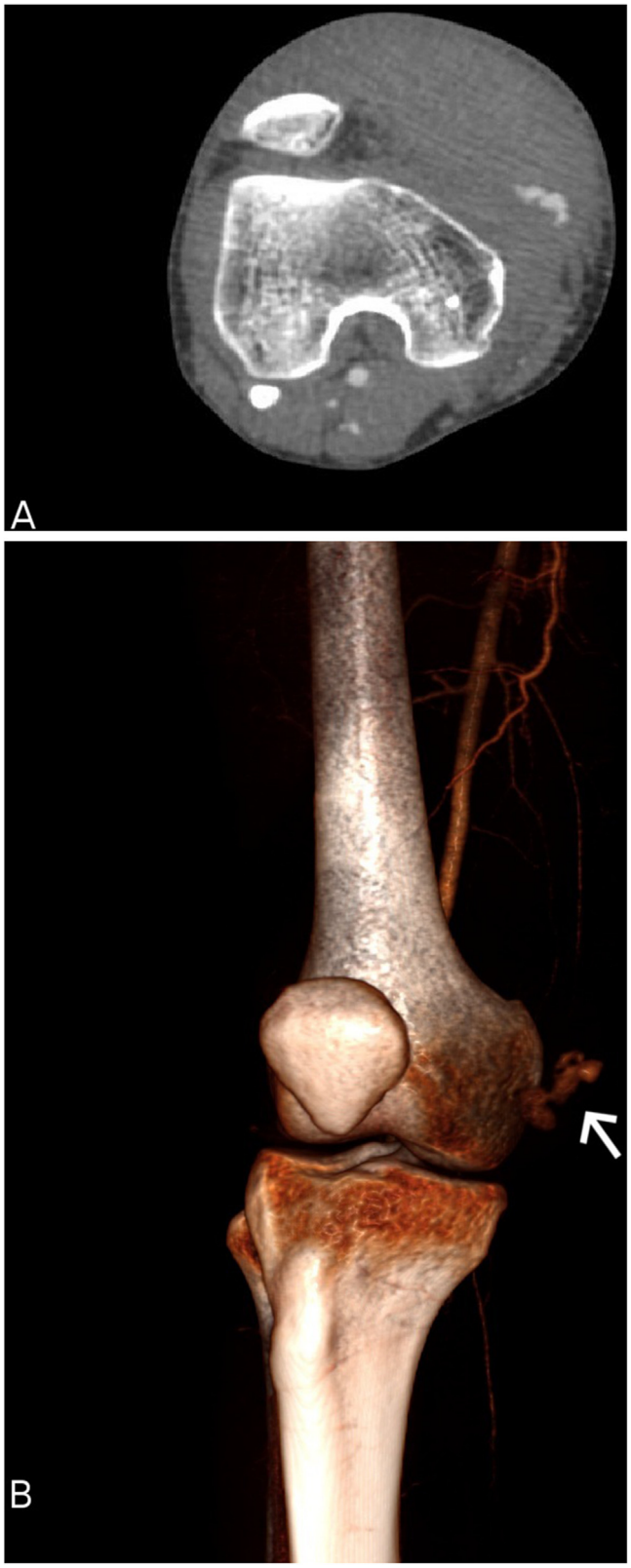

Fig. 1. Knee contrast-enhanced computed tomography (CT). Axial view (A) showing a large haematoma in the medial side of the knee. 3D CT reconstruction (B) revealingactive bleeding (arrow) from the descending genicular artery (DGA).

extravasation was noted. Two days later, the patient was discharged with a knee brace locked at 30°, and weight-bearing was delayed for 20 days. A 30-day deep vein thrombosis

Fig. 2. Selective angiography. Pre-embolization angiography (A) showing contrast medium extravasation from a distal branch of the DGA (arrow). Post-embolization angiography (B) demonstrating no residual bleeding from the injured vessel (arrowhead).

prophylaxis (Enoxaparin 4000 U.I. SC once a day; Clexane, Sanofi Aventis, France) and a 7-day antibiotic prophylaxis course (Amoxicillin-Clavulanic Acid, 875 + 125 mg orally 3 times a day; Augmentin, Glaxo Smith Kline, UK) were administered.

At 3-month follow-up, knee magnetic resonance imaging (MRI) detected abnormalities of medial patellofemoral ligament (MPFL) at the femoral attachment and vastus medialis obliquus (VMO) fibers as a result of muscle strain (Fig. 3A, B). Knee MRI also

Please cite this article in press as: A. Silvestri, et al., Descending genicular artery injury following transient lateral patellar dislocation, J Clin Orthop Trauma (2018), https://doi.org/10.1016/j.jcot.2018.02.013