Popliteal artery trauma following knee dislocation: A Case Report

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Introduction

The association of knee dislocation and arterial injury is rare, devastating and potentially threatening, usually caused by high-energy trauma. This association is often seen in polytraumatized patients who can progress to ischemia or even amputation [1,2]. Diagnosis is made by standard radiography. A vascular and neurological assessment is necessary. The vascular lesion is identified by angio-CT of the knee. The immediate treatment is reduction and treatment of closed vascular lesions [2,3]. We report a case of knee dislocation with occlusion of the popliteal artery in its articular portion complicated by acute schema.

Observation

We report the observation of a 43-year-old woman with no significant pathological history, was admitted to the emergency room, following intense pain, with coldness in the right leg of sudden installation and total functional impotence of the right leg. Following a dislocation of the right knee secondary to a fall from stairs, reduced by his entourage on the spot. The examination finds a conscious, cooperative, hemodynamically and respiratory stable patient. The physical examination noted at the level of the right lower limb absence of deformation and posterior displacement of the knee, absence of cutaneous opening, cold leg and right foot with pallor of the toes, on the vasculonervous examination absence of paralysis of the fibular nerve common, popliteal, pedal and tibial pulse abolished. Examination of the contralateral limb was unremarkable. The knee X-ray did not show any osteo-articular lesion. Doppler ultrasound revealed popliteal artery thrombosis. It is the presence of signs of ischemia of the right leg which led to the urgent treatment of the ischemia in the first stage and then of the instability of the knee in the second stage. The patient was placed under general endotracheal anesthesia in the supine position. A medial lateral incision of the right knee was made. Surgical exploration was only performed after 15 hours. The popliteal vein and nerve were undamaged but the joint capsule was torn. The popliteal artery was completely sectioned with retraction of the extremities (Figure 1). The procedure consisted of a bypass via the reversed ipsilateral saphenous vein implanted between the lower part of the superficial femoral artery and the rest of the popliteal artery (Figure 2) with a proximal and a distal latero-terminal anastomosis.
Figure 1: Intraoperative image before arterial repair showing thrombosis of the popliteal artery.

Figure 2: Intraoperative image after arterial repair.

Results

The length of stay in intensive care was 24 hours and that of hospitalization 5 days. The left lower limb is warm and well perfused. No complications related to reperfusion were noted. Postoperative CT angiography showed a patent bypass (Figure 3).

Figure 3: Angioscanographic image of the knee for arterial repair quality control. The patient was transferred to the trauma department to treat knee instability.

Discussions

Knee dislocations can be simply defined “as ligament injuries with loss of continuity of the tibio-femoral joint” [1]. The association of a lesion of the popliteal artery during knee dislocation revealed by ischemia is rare [2]. A popliteal artery injury may initially affect only the intima and therefore will not cause distal ischemia until the artery becomes obstructed later. Undiagnosed arterial injury has a high risk of ischemic complications, which can lead to amputation [3-7]. Arterial complications make all the seriousness of knee dislocations, as is the case with our patient. Frequent, they have a highly variable rate of amputation, depending on the time to revascularization and the associated lesions. The frequency and the gravity of the arterial lesions impose their research in the face of any bi-crossed lesion by the clinic but also systematically by arteriography because lesions by intimal flap with perceived pulse can be revealed late (10% to 30% of popliteal damage with perceived
pulses) [4]. CT angiography of the knee is the reference method for vascular evaluation after knee dislocation [3], unfortunately ours did not benefit from this radiological exploration. The speed of treatment determines the prognosis. Vascular repair is often called a bypass [5] as is the case of our patient, the initial treatment consisted of an emergency joint reduction without fixation, and then a bypass of the popliteal artery by the internal saphenous vein reversed. These recognized knee lesion associations, treated quickly and conscientiously as a team, make it possible to obtain a favorable result [5,6]. In our patient, the result was favorable with good recovery of the limb.

Conclusion

Many knee dislocations are accompanied by popliteal artery or nerve damage. Knee dislocations are often underdiagnosed because they are rare and occur following high-energy trauma with distracting and life-threatening injuries. Immediately reduce the dislocated knee and consult a vascular surgeon to repair any vascular damage.

References