



Case report

Premature hamstring graft amputation during harvesting in ACL reconstruction

Chaiwat Chuaychoosakoon^{*}, Wachiraphan Parinyakhup, Tanarat Boonriong

Department of Orthopedics, Faculty of Medicine, Prince of Songkla University, 15 Karnjanavanich Road, Hat Yai, Songkhla 90110, Thailand



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ABSTRACT

Introduction: There are some possible complications during or after hamstring graft harvesting such as premature graft amputation, medial collateral ligament injury and infrapatellar branch of the saphenous nerve injury. Premature graft amputation can occur by inadequate removal of the accessory branches of the hamstring tendons, poor surgical technique and/or too sharp tendon stripper. In this study, we report a case of premature hamstring graft amputation due to degeneration caused by osteochondroma at the posteromedial aspect of the proximal tibia.

Case presentation: We reported the case of a 28-year-old Thai male who had an ACL injury was scheduled for ACL reconstruction. In this case, we had planned to use a hamstring graft for double-bundle ACL reconstruction. During the gracilis tendon harvesting, the graft was prematurely amputated by a tendon stripper at the level of the osteochondroma. The premature graft amputation was sent for pathology, which showed degenerated tissue.

Conclusion: In cases of osteochondroma at the posteromedial aspect of the proximal tibia, it is a chance of premature hamstring graft amputation. We suggest removing the osteochondroma before harvesting the tendon grafts to avoid the risk of premature graft transection.

1. Introduction

Anterior cruciate ligament (ACL) reconstruction is one of the most common operations in sports medicine [1], for which either a hamstring tendon or patellar tendon graft is commonly used [2,3]. There are some possible complications during or after hamstring graft harvesting such as premature graft amputation [4], medial collateral ligament injury [5] and infrapatellar branch of the saphenous nerve injury [6,7]. Premature graft amputation can occur by inadequate removal of the accessory branches of the hamstring tendons, poor surgical technique and/or too sharp tendon stripper [5]. In this study, we report a case of premature hamstring graft amputation due to degeneration caused by osteochondroma at the posteromedial aspect of the proximal tibia. This case was reported according to the SCARE criteria [8].

2. Case presentation

A 28-year-old Thai male without underlying and genetic diseases who had an ACL injury was scheduled for ACL reconstruction in Songklanagarind hospital. In this case, the surgeon (W.P.) had planned to use

a hamstring graft for double-bundle ACL reconstruction. Pre-operative radiographs of the right knee were done in anteroposterior and lateral views (Fig. 1A and B), which showed osteochondroma without evidence of osteoarthritis. In the operating room, we began with an oblique incision through the subcutaneous tissue. The upper border of the pes anserinus was incised. The gracilis and semitendinosus tendons were identified and harvested. During the gracilis tendon harvesting, the graft was prematurely amputated by a tendon stripper at the level of the osteochondroma, as shown in Fig. 2. The premature graft amputation was sent for pathology, which showed degenerated tissue (Fig. 3A, B). So, we decided to remove the osteochondroma (Fig. 4) before re-harvesting the gracilis tendon graft. The stump of the gracilis was identified followed by the graft harvesting, and the ACL reconstruction was done normally. After the surgery, the patient was sent for knee radiographs which are shown in Fig. 5A and B.

3. Discussion

Amputation during hamstring graft harvesting is rare, but when it occurs, the common cause is insufficient removal of the accessory

^{*} Corresponding author.

E-mail addresses: chaiwat.c@psu.ac.th (C. Chuaychoosakoon), tanarat.b@psu.ac.th (T. Boonriong).

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Fig. 1. Initial radiographic imaging of right knee: (A) anteroposterior and (B) lateral views.

branches of the gracilis and semitendinosus tendons [4]. The accessory attachments of the tendons cause transection of either the gracilis or semitendinosus tendon by misdirecting the tendon stripper, resulting in a shorter graft. In this case, the cause of premature graft transection was from the poor quality of the tendon. The pathologic report at the level of the graft amputation showed degeneration of the graft tissue, which may have been caused by friction between the osteochondroma and the tendon. Additionally, the location of the osteochondroma was at the posteromedial aspect of the tibia, which affected the direction of the tendon stripper, resulting in graft transection. In cases of osteochondroma at the posteromedial aspect of the proximal tibia, we suggest removing the osteochondroma before harvesting the tendon grafts to avoid the risk of premature graft transection.

Provenance and peer review

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Ethical approval

The present study was approved by the Prince of Songkla University Institutional Review Board, Faculty of Medicine, Songklanagarind Hospital, Prince of Songkla University (IRB number REC 64-201-11-1).

Consent

Written informed consent was obtained from the patient for publication.

Author contribution

Chaiwat Chuaychoosakoon — Preparation of case report, Literature review, Writing the paper.

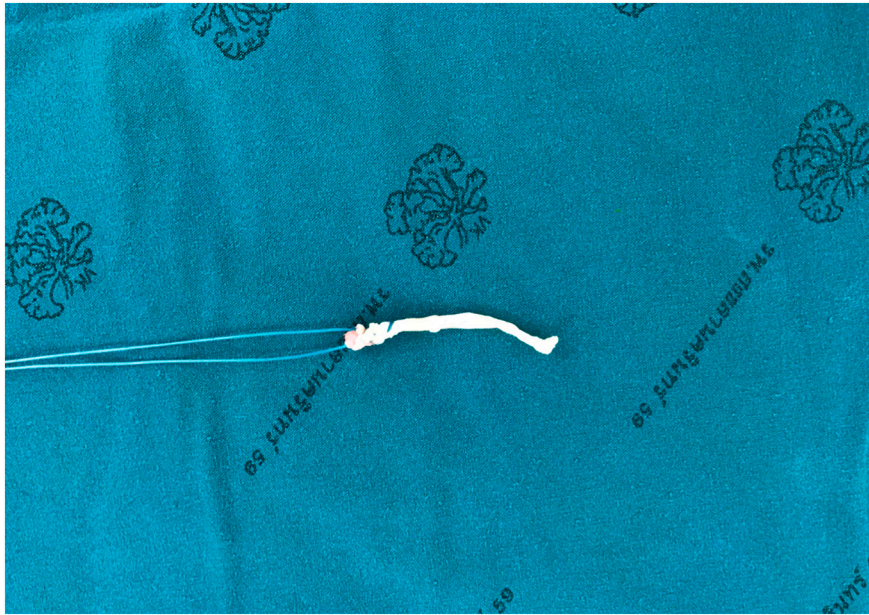


Fig. 2. The amputated gracilis graft.

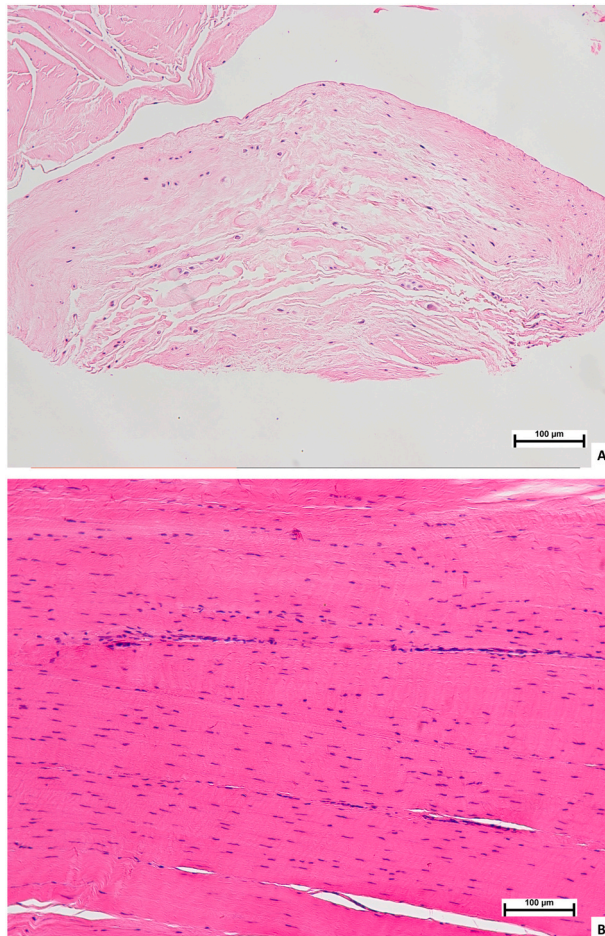


Fig. 3. The pathological report: (A) a degenerative tissue and (B) normal tissue.

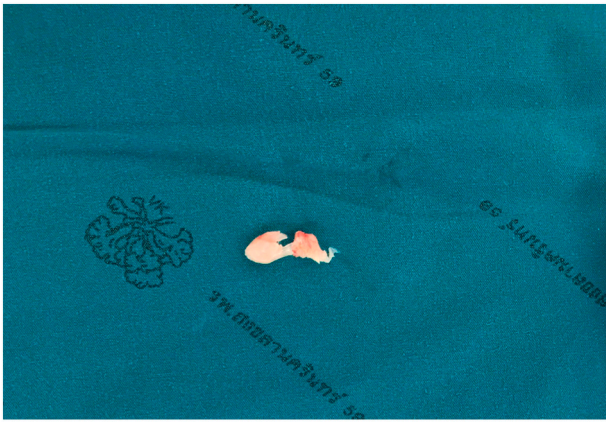


Fig. 4. Osteochondroma removal.



Fig. 5. Postoperative radiographic imaging of right knee: (A) anteroposterior and (B) lateral views.

Wachirapan Parinyakhup — Preparation of case report. Writing the paper.

Tanarat Boonriong — Preparation of case report. Writing the paper.

Research registration (for case reports detailing a new surgical technique or new equipment/technology)

N/A.

Guarantor

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Declaration of competing interest

No conflicts of interest.

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