



Case report

Deep vein thrombosis following arthroscopic meniscal root repair: A case report

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ABSTRACT

Introduction: Deep vein thrombosis (DVT) following arthroscopic surgery is a rare condition, especially arthroscopic meniscal surgery. There have been three reported cases of DVT after arthroscopic meniscal procedure, all related to arthroscopic meniscectomy. In this study, we reported the first case of symptomatic DVT at the level of the femoral vein to the popliteal vein following arthroscopic meniscal root repair.

Case presentation: The case was a 55-year-old Thai female who presented with left knee pain for 2 months after a fall. She was diagnosed as left medial meniscal root injury and had had an arthroscopic meniscal root repair. At 6 weeks post-operatively, she developed left leg swelling without pain. She was diagnosed as DVT and was initially treated with enoxaparin for three days then warfarin for three months.

Conclusion: We report a case of symptomatic DVT that extended from the femoral vein to the popliteal vein after arthroscopic meniscal root repair. The risks of DVT following arthroscopic surgery are aged more than 40 years old and tourniquet time more than 60 min.

1. Introduction

The incidence of deep vein thrombosis (DVT) in orthopedic lower extremities surgery has been reported at 19.3% [1], but this is a rare condition following arthroscopic surgery, especially arthroscopic meniscal surgery. The risk factors are age greater than 40–60 years [1,2] and operation time more than 60–120 min. [1,3] There have been three reported cases of DVT after arthroscopic meniscal procedure, all related to arthroscopic meniscectomy. Two of these three cases had had combined DVT and symptomatic pulmonary embolism (PE) which occurred at 9 and 21 days after their surgeries [4,5], while the other had only DVT, diagnosed after presenting with leg swelling 13 days following the surgery. Even though some cases of symptomatic PE have been reported, prophylactic medications are not recommended in arthroscopic meniscal surgery [6,7]. In this study, we report the first case of symptomatic DVT at the level of the femoral vein to the popliteal vein following arthroscopic meniscal root repair. This case report follows the SCARE criteria [8].

2. Case presentation

The case was a 55-year-old Thai female without any underlying

diseases or current oral medications who presented with left knee pain for 2 months after a fall, while walking. Her clinical examination showed tenderness at the medial joint line, pain on deep flexion, and positive McMurray and Thessaly tests. She was diagnosed as left medial meniscal root injury and we performed an arthroscopic meniscal root repair. A tourniquet was used for 70 min, and she had no immediate post-operative complications. She was fitted with a locked long-knee extension brace and advised to perform ankle pumps, beginning immediately. We allowed the patient to ambulate with partial weight bearing in the left knee with axillary crutches. After the surgery, the patient was scheduled for follow ups at 2 weeks, 4 weeks and 6 weeks after her surgery. There were no complications at 2, 4 weeks follow-up.

At 6 weeks post-operatively, she developed left leg swelling without pain (Fig. 1), but no symptoms of dyspnea or palpitations. A left leg examination showed warmth and edema. Leg circumferences at 10 cm above the superior border of the patella were 45 and 51 cm on the right and left sides and at 10 cm below the tibial tubercle with the knee extended were 36 and 43 cm on the right and left sides, respectively. On the left affected side, she had range of motion to 90 degree flexion. The Homan sign was negative. A blood test showed rising of D-dimer (4.12 µg FEU/ml; normal < 0.5 µg FEU/ml). Doppler ultrasonography showed acute deep vein thrombosis between the common femoral and popliteal

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veins (Fig. 2). The patient was initially treated with enoxaparin for three days then changed to warfarin for three months, after which the left leg had returned to normal size.

3. Discussion

DVT after arthroscopic surgery is a very rare condition, especially

following an arthroscopic meniscal procedure. There have been only three reported cases, all following arthroscopic meniscectomy. In this study, we report a case of DVT from the femoral vein to the popliteal vein following an arthroscopic meniscal root repair, which has not been reported previously.

There are three studies to date which have evaluated the risk of DVT in arthroscopic surgery, which have suggested the risk factors are



Fig. 1. The patient with left leg swelling.

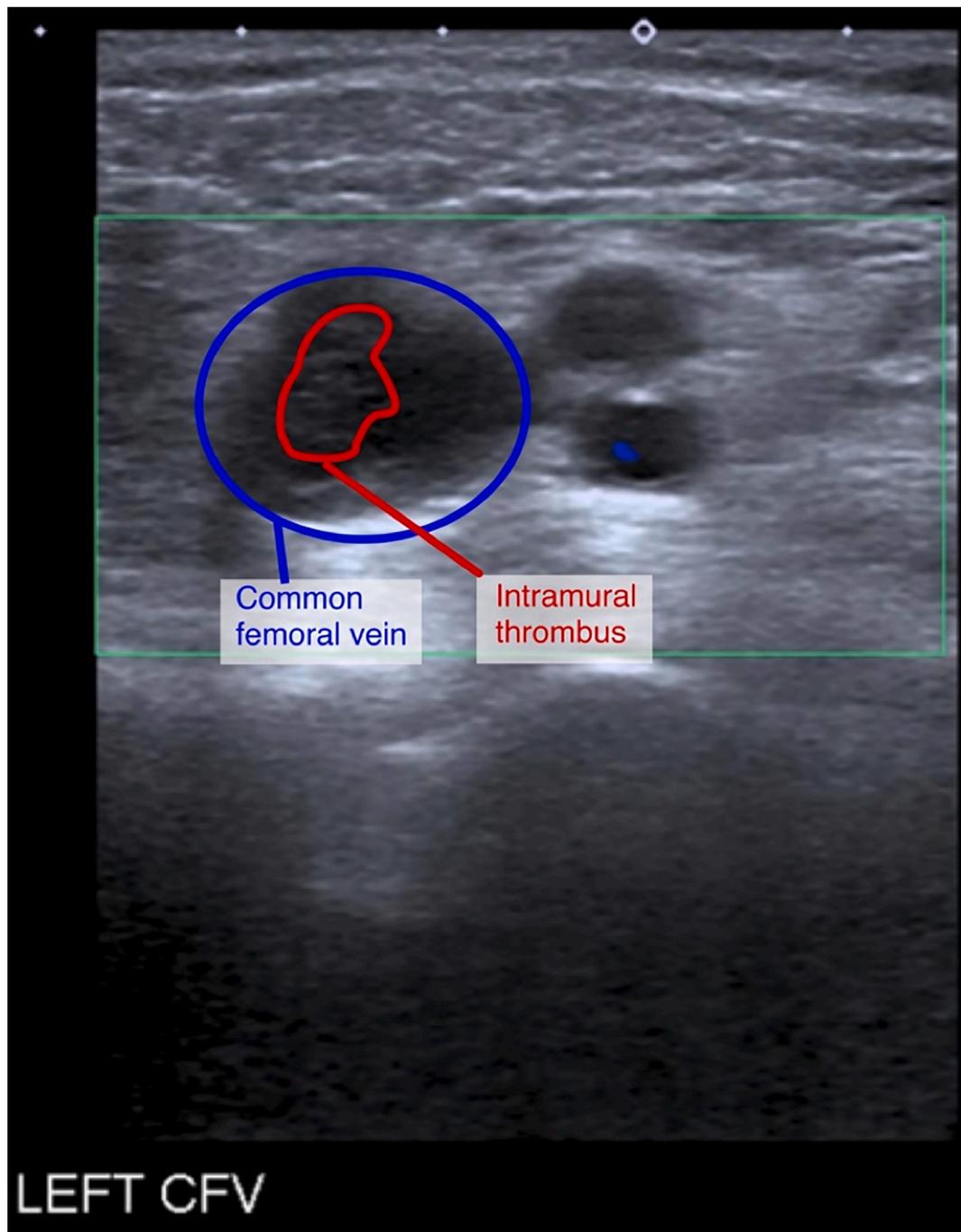


Fig. 2. Doppler ultrasonography showing acute deep venous thrombosis at the common femoral vein.

tourniquet time more than 60 min [2], prior history of DVT [9], and age more than 40 years [3]. This patient had two of these risk factors, as she was over 40 years of age and the operation and tourniquet time were over 60 min.

The use of prophylaxis against DVT is only recommended in major orthopedic surgeries such as joint replacement or trauma-related surgeries; there are no recommendations for the use of thromboprophylaxis in arthroscopic surgery because there are low incidences of DVT and PE. However, in cases where the reported risk factors indicate a high risk of DVT, we suggest advising the patient and relatives to observe the clinical signs and symptoms after the surgery. If the patient develops things such as leg swelling or dyspnea, we recommend seeing their doctor as soon as possible.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Consent

Written informed consent was obtained from the patient for publication.

Ethical approval

The present study was waived by the Prince of Songkla University Institutional Review Board, Faculty of Medicine, Songklanagarind Hospital, Prince of Songkla University (IRB number REC 64-230-11-1).

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Guarantor

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CRediT authorship contribution statement

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

Piya Chavalparit — Preparation of case report, Literature review, Writing the paper.

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

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

Declaration of competing interest

No conflicts of interest.

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