e-ISSN:2147-2181

causapedia
hakemli olgu dergisi

Double Femoral Vein: A Case Report

Çift Femoral Ven: Olgu Sunumu

Anatomi

Başvuru: 07.12.2015
Kabul: 14.01.2016
Yayın: 01.02.2016

Kenan Öztürk[1], Büşra Candan[1], Cemil Bilkay[1], Ahmet Dursun[1]

[1] Süleyman Demirel Üniversitesi Tıp Fakültesi

Özet

Bu vaka raporunun amacı, vena femoralis'teki bir varyasyonu ve onun komponentlerini açıklamaktır. Tahnit edilmiş 55 yaşındaki erkek bir kadavranın rutin diseksiyonu sırasında sol trigonum femorale'de çift vena femoralis gözlendi. Bu vakada vena femoralis, canalis adductorius'da yüzeyel ve derin komponent olmak üzere ikiye ayrılmış ve bu iki venin çapı orta noktalarından ölçülmüştür. Ayrıca arteria femoralis'in bu iki venin arasından geçtiği görülmüştür. Vena femoralis'ler trigonum femorale'nin tepe noktası yakınında küçük bir bağlantı dalı ile birbirlerine bağlıydılar ve bir yüzeyel ven de bu bağlantı dalına açılıyordu. Bu venlerin ayrılma yerinden 9,7 cm sonra yeniden birleştikleri görüldü ve bu birleşmeden hemen sonra vena femoralis'in çapı 10 mm olarak ölçüldü. Çift vena femoralis nadir görülen bir durum değildir. Ancak bizim vakamız, bir bağlantı dalının varlığından dolayı önemlidir. Çift vena femoralis, alt ekstremitenin venöz ağının araştırılmasında ve özellikle kardiyovasküler hastalıkların haritalanması ve karşı ekstremiteye derin ven transferinde büyük öneme sahiptir. Ayrıca, femoropopliteal venlerde derin ven trombozunun yanlış tanısından kaçınmak için önemlidir.

Anahtar kelimeler: *Femoral ven*, *Varyasyon*, *Derin ven trombozu*

Abstract

The aim of this case report is to describe variation in the femoral vein and its components. Double femoral veins were observed in the left femoral triangle of a 55 year old male embalmed cadaver during routine dissection. Femoral vein in this case separated into two veins as superficial and deep constituent in adductor canal. The diameters of double femoral veins were measured. The femoral artery passed from between these two veins. Femoral veins connected a small connection branch to each other near the apex of femoral triangle and a superficial vein drained to this connection branch. These veins were reunited after 9.7 cm from the cleavage site. The diameter of the femoral vein just after the junction was 10 mm. Double femoral veins are not rare. But in our case, it is important due to the existence of a connection branch. Double femoral veins are crucial for investigation of the lower limb venous network, particularly for deep vein transposition on the opposite limb and the mapping of cardiovascular disease. Additionally, it is important to avoid from misdiagnosis of deep vein thrombosis in the femoropopliteal veins.

Keywords: *Femoral vein*, *Variation*, *Deep vein thrombosis*

Introduction

The femoral vein (FV) accompanies the femoral artery. FV begins at the adductor canal is a continuation of the popliteal vein. It ends at the level of inguinal ligament, where it becomes the external iliac vein. FV is posterolateral to the femoral artery in the lower portion of the adductor canal, and behind the artery in the upper portion of the adductor canal and in the lower portion of the femoral triangle. It is medial to the artery at the base of the femoral triangle. The femoral vein has multiplexed muscular tributaries. The deep femoral vein joins from posterior to the femoral vein in 4–12 cm distal of the inguinal ligament, and the great saphenous vein joins it anteriorly. Lateral and medial circumflex femoral veins are generally tributaries of the femoral vein [1].

Vascular sheath in the femoral region is utilized for various clinical procedures, both open and closed, particularly with respect to arterial and venous cannulations [2]. Anatomical variations of the femoral vein are of great clinical

Corresponding Author: Kenan Öztürk, Süleyman Demirel Üniversitesi Tıp Fakültesi Süleyman Demirel Üniversitesi Tıp Fakültesi Anatomi ABD
kenanozt@hotmail.com

e-ISSN:2147-2181

significance particularly in cases of deep vein trombosis (DVT) [3]. The venous anatomy is extremely variable due to venous malformations occurring during the late development of the embryo [4]. In our case, we have identified variations in the FV and its components.

Case Report

FV dublication was observed in the left femoral triangle of a 55 year old male embalmed cadaver during routine dissection of the lower limb in Suleyman Demirel University, Faculty of Medicine, Anatomy Laboratory (Figure 1, 2).

This case has been detected during routine dissection for the training of undergraduate medical students. Femoral vein was 9 mm diameter in this case, and separated into two veins as superficial and deep constituent in the adductor canal (Figure 1, 2). The diameters of double femoral veins were measured as 7 mm and 6 mm, respectively. The diameter of femoral artery was 9 mm, and passed between these two veins. Double femoral veins are connected to eachother by a small connection branch near the apex of the femoral triangle and a superficial vein drained to this connection branch (Figure 1, 2). These veins were reunited after 9.7 cm from the cleavage site. The diameter of the femoral vein just after the junction was 10 mm.

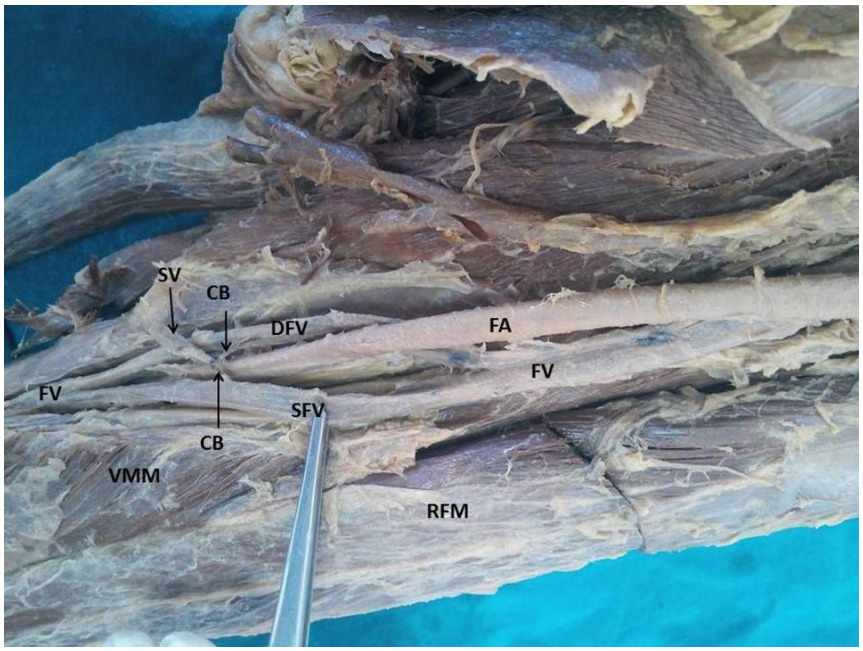

Figure 1

FV; Femoral vein, FA; Femoral artery, SV; Superficial vein, CB; Common branch, DFV; Deep constituent of femoral vein, SFV; Superficial constituent of femoral vein, VMM; Vastus medialis muscle, RFM; Rectus femoris muscle

e-ISSN:2147-2181

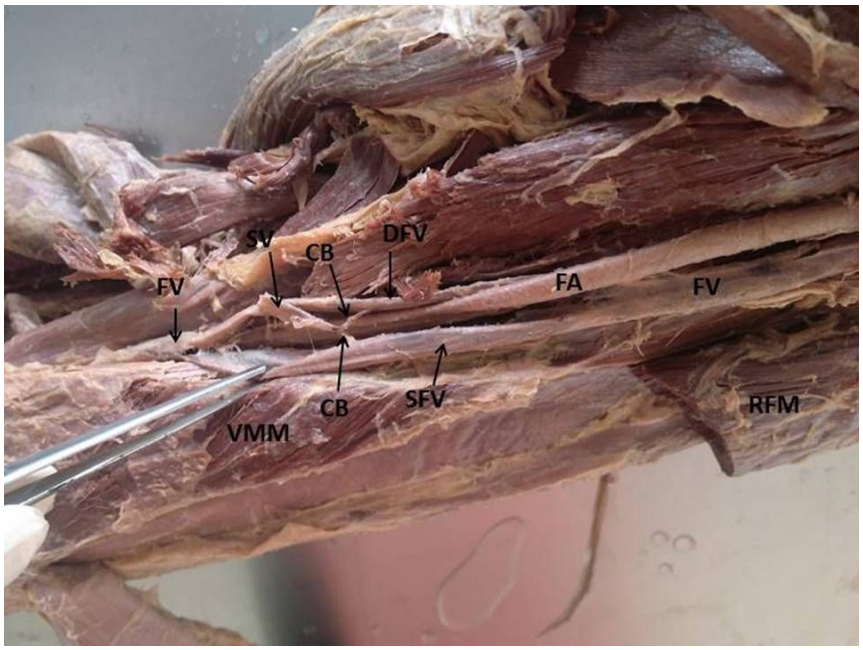

Figure 2

FV; Femoral vein, FA; Femoral artery, SV; Superficial vein, CB; Common branch, DFV; Deep constituent of femoral vein, SFV; Superficial constituent of femoral vein, VMM; Vastus medialis muscle, RFM; Rectus femoris muscle

Case Discussion

The presence of FV duplication is usually reported as being approximately 20–25% of the cases, but these values may be higher if partial duplications are considered [5]. The frequency of duplicated FV's is variable, ranging from 12% to 46%, according to the technique used: ultrasound, venography, or anatomical study [4].

Dona et al. reported a statistically high prevalence of duplications of the FV. They confirmed that changes in flow rate increased the formation of DVT secondary. Dona et al. also found 15% duplicated VF's on ultrasound [6]. The incidence of duplication of FV is quite variable and may reach as high as 46% [7]. Quinlan et al. found the prevalence of duplicated superficial FV in 253 (31%) of extremities in their review of 404 bilateral (808 extremities) lower extremity venograms. Quinlan et al. also found that the duplicated vein started in the adductor region in only 80 extremities [7]. Duplication of the FV was reported in 25% of investigated cases in a previous study [5]. Liu et al detected multiple FV's in 31% of all the extremities [8]. More recently, Sharma and Salwan reported a more or less similar type of case of duplication of the FV [9]. Kerr et al. reported that duplication of the superficial FV is the most common anomaly of venous system in the lower extremities diagnosed by duplex scanning [10].

Dublication of the FV is not rare. But in our case, it is significant due to the existence of a connection branch. Double FV's are important in the researches of the lower extremity venous network, particularly in the deep vein transfer on the opposed extremity and the mapping of cardiovascular diseases. Furthermore, it is significant to refrain from incorrect diagnosis of DVT in the femoropopliteal veins.

References

1. Standring S, editor. Gray's Anatomy. 39th ed., London: Elsevier, 2005. p. 543-7.

e-ISSN:2147-2181

2. Bandyopadhyay M, Biswas S, Roy R. Vessels in femoral triangle in a rare relationship. Singapore Med J. 2010; 51: 3-5.
3. Khan AA, et al. An interconnected duplicated femoral vein and its clinical significance. Folia Morphol. 2013; 72 (1): 82-5.
4. Uhl JF, Gillot C, Chahim M. Anatomical variations of the femoral vein. J Vasc Surg. 2010; 52: 714-9.
5. Gordon AC, Wright I, Pugh ND. Duplication of the superficial femoral vein: recognition with duplex ultrasonography. Clin Radiol.1996; 51: 622-4.
6. Dona E, et al. Duplicated popliteal and superficial femoral veins: incidence and potential significance. Aust N Z J Surg. 2000;70: 438-40.
7. Quinlan DJ, et al. Variations in lower limb venous anatomy: implications for US diagnosis of deep vein thrombosis. Radiology. 2003; 228: 443-8.
8. Liu GC, et al. Effect of anatomic variations on deep vein thrombosis of the lower extremity. Am J Roentgenol. 1986; 146: 845-8.
9. Sharma P, Salwan S. Duplication of femoral vein and its significant clinical implications. IJAV. 2011; 4: 188-91.
10. Kerr TM, et al. Venous and arterial anomalies of the lower extremities diagnosed by duplex scanning. Surg Gynecol Obstet.1992; 175: 309-14.

Information Presantation

7. International Symposium of Clinical and Applied Anatomy (ISCAA 2015), 17-20 Eylül 2015, Bratislava, SLOVAKYA