

An uncommon cause of hip pain: isolated gluteal deep venous thrombosis associated with prolonged seated immobility

Seyrek görülen bir kalça ağrısı nedeni: Uzun süreli oturmaya bağlı immobilite ile ilişkili izole gluteal derin venöz trombozu

Serkan Şener,¹ F. Çiğdem Doğulu,² Nevzat Demirhan³

¹Department of Emergency Medicine, Acıbadem University, İstanbul, Turkey

²Department of Neurology, Acıbadem University, İstanbul, Turkey

³Department of Radiology, Acıbadem Bursa Hospital, Bursa, Turkey

In this article, we report a 32-year-old female patient with isolated gluteal deep venous thrombosis, in whom immobility associated with sitting for long periods at work represented the major risk factor for her venous thrombosis. At admission, the patient had a week history of severe left hip pain which gradually increased in the last two days. Hip magnetic resonance imaging with contrast agent demonstrated left inferior gluteal vein thrombosis and perivascular inflammation which was subsequently supported by color Doppler ultrasonography. A search for possible causes of the thrombosis revealed no risk factor other than prolonged seated immobility at work. After anticoagulation with low molecular weight heparin and warfarin, her symptoms completely resolved in two weeks. In the absence of recognized risk factors, 21st century lifestyle associated immobility from prolonged sitting might be considered as the major contributing factor for venous thrombosis.

Key words: Gluteal vein; hip pain; prolonged sitting, immobility; thromboembolism.

Although venous thromboembolism (VTE) is a common medical problem, much remains to be learned regarding the predisposing factors associated with its development.

In general, immobilization increases the risk of VTE, and the association between prolonged sitting

Bu yazıda iş yerinde uzun süreli oturmaya bağlı immobilitenin venöz trombozun majör risk faktörü olduğu, 32 yaşında izole gluteal derin ven trombozlu bir kadın olgu sunuldu. Başvuru sırasında hastada bir haftadır devam eden ve son iki gün giderek artan şiddetli sol kalça ağrısı mevcuttu. Kontrast maddeli kalça manyetik rezonans görüntüleme sol inferior gluteal ven trombozu ve akabinde renkli Doppler ultrasonografi ile desteklenen perivasküler enflamasyon görüldü. Trombozun muhtemel nedenleri araştırılırken, hastanın iş yerinde uzun süreli oturmasından başka risk faktörü saptanmadı. Düşük moleküler ağırlıklı heparin ve varfarin ile antikoagülasyondan sonra, hastanın semptomları iki hafta içerisinde tamamen düzeldi. Bilinen risk faktörlerinin mevcut olmaması durumunda, uzun süreli oturmaya bağlı immobilite ile ilişkili 21. yüzyıl yaşam tarzı, venöz tromboza katkıda bulunan ana etmen olarak düşünülebilir.

Anahtar sözcükler: Gluteal ven; kalça ağrısı; uzun süreli oturma, immobilite; tromboembolizm.

during air travel and VTE is well recognized. In this report, we report a case of isolated inferior gluteal deep venous thrombosis (DVT) presenting to the emergency department (ED) with severe hip pain in which immobility associated with sitting long hours at work represented a major risk factor for thrombophilia.



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2013.5897
QR (Quick Response) Code

Received: August 27, 2011 Accepted: October 31, 2011

Correspondence: Serkan Şener, M.D. Acıbadem Üniversitesi, Acil Tıp Anabilim Dalı, 34848 Maltepe, İstanbul, Turkey.

Tel: +90 212 - 304 48 83 e-mail: ssener@asg.com.tr

CASE REPORT

A 32-year-old female patient was admitted to the ED with a week-long history of severe left hip pain that had gradually increased over the previous two days. Her medical history was unremarkable, and she had no history of trauma, pregnancy, pelvic inflammatory disease, recent surgery, or long-distance travel. However, she worked in an office where she was required to spend eight to 10 hours sitting behind a desk every day. A physical examination revealed limited range of motion in the left hip joint and tenderness on the hip starting from the beginning of the sciatic nerve and proceeding down to 15 cm proximal. There was no leg edema, and Homans' test for DVT was negative. The baseline laboratory investigations upon presentation, including a complete blood count (CBC), blood chemistry, and urinalysis, were normal. Anteroposterior pelvis radiography and abdominal ultrasonography (US) demonstrated no abnormalities. She was admitted to the hospital, and hip magnetic resonance (MR) imaging with contrast demonstrated findings compatible with left inferior gluteal vein thrombosis and perivascular inflammation (Figures 1 and 2). This was subsequently supported by color Doppler US which revealed an increase in diameter, heterogeneity in lumen echogenicity, and obliteration of venous flow signal in the aforementioned veins. A venous system color Doppler US examination of the bilateral lower extremities was normal. Thrombophilia susceptibility screening tests as well as tests for lupus anticoagulant, immunoglobulin M anticardiolipin antibodies, immunoglobulin G anticardiolipin antibodies, activated protein C resistance ratio (APCR), protein C activity, protein S activity, factor V Leiden mutation, the prothrombin factor II (F2) G2021A allele, and the methylenetetrahydrofolate reductase C677T allele were performed and revealed unremarkable results.

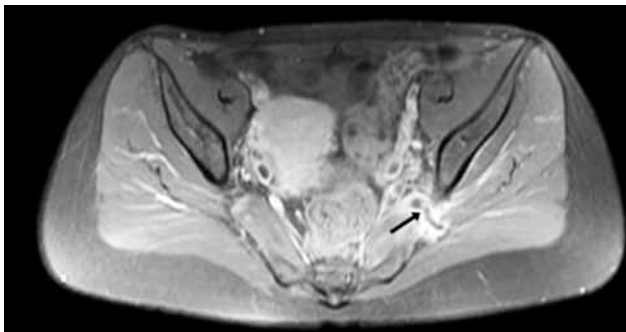


Figure 1. Axial FS-T₁ weighted hip magnetic resonance imaging with contrast showing left inferior gluteal vein thrombosis (black arrow).

The patient was started on low molecular weight heparin (LMWH) (enoxaparin sodium 6000 Anti-XA IU/0.6 ml) twice a day. Three days later, the severe pain had resolved, and the patient started to walk. She was put on oral anticoagulation with warfarin to achieve the international normalized ratio target of 2.0 to 3.0 for at least two months. The LMWH was discontinued on the seventh day of therapy, and the patient had no residual symptoms when seen at the end of the second week.

DISCUSSION

Venous thromboembolism is a common disease with an annual incidence of one to two events per 1000 in the general population. It is manifested by DVT and pulmonary embolism (PE). Venous thromboembolism of the pelvic veins is commonly formed by extension from the femoropopliteal system. The relative frequency of isolated pelvic vein thrombosis is thought to be uncommon, but rare cases have been reported in the postpartum period and after a cesarean section.^[1]

Using pelvic MR venography as a diagnosis test, Rodger et al.^[1] reported a surprisingly high rate of pelvic DVT (46% overall) in asymptomatic women after a cesarean section. Deep venous thrombosis occurred predominantly in the iliac veins with the exception of one case located in the common femoral vein.^[1] Thrombosis of the pelvic veins, including the internal iliac veins, has also been reported after orthopedic surgery in men and in conjunction with pelvic inflammatory disease in women. In addition, it has been identified with the involvement of the prostatic plexus and septic pelvic vein thrombophlebitis in both genders.^[2]



Figure 2. Coronal T₂ weighted hip magnetic resonance imaging showing an increase in diameter (dashed arrow) and hypointensity in the inferior gluteal vein compatible with thrombosis (arrow).

Numerous case reports and case series demonstrating pelvic DVTs, both with and without lower extremity involvement, have been reported in the literature. However, in the present study, we demonstrated a case of isolated inferior gluteal vein thrombus with no lower extremity involvement that has not been previously reported.

The well-known risk factors for VTE include increased age, immobilization, surgery, trauma, malignancy, pregnancy, puerperium, hormone replacement therapy, oral contraceptives, antiphospholipid antibodies, long-distance travel, and inherited thrombophilias.^[3]

In the absence of any recognized risk factors associated with VTE, our patient appeared to have developed DVT as a consequence of prolonged sitting related to her job.

The association between prolonged sitting and VTE was first recognized during the London blitz in World War II when Simpson reported a six-fold increase in the incidence of fatal PE occurring in people who had sat for prolonged periods in air raid shelters.^[4] Later Homans^[5] reported that VTE may occur after prolonged sitting in a number of other situations, such as air travel, car trips, and theater attendance.

More recently, there have been cases, case series, and a case-control study that have demonstrated that VTE is also associated with prolonged seated immobility due to the extensive use of computers at work as well as for recreation and personal communication.^[6]

In conclusion, we report a case of isolated inferior gluteal DVT caused by prolonged seated immobility that

presented to the ED with severe hip pain. We suggest that immobility associated with sitting for a long time, which correlates with the sedentary life-style pattern of the 21st century, may represent an important risk factor for VTE in addition to those that are already known, and we predict this new risk factor will be more widely recognized in the near future.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Rodger MA, Avruch LI, Howley HE, Olivier A, Walker MC. Pelvic magnetic resonance venography reveals high rate of pelvic vein thrombosis after cesarean section. *Am J Obstet Gynecol* 2006;194:436-7.
2. Feied C. Pulmonary embolism. In: Rosen P, Barkin R, editors. *Emergency medicine: Concepts and clinical practice*. 4th ed. St. Louis: Mosby-Year Book; 1998. p. 1797-800.
3. Rosendaal FR. Venous thrombosis: the role of genes, environment, and behavior. *Hematology Am Soc Hematol Educ Program* 2005:1-12.
4. Simpson K. Shelter deaths from pulmonary embolism. *Lancet* 1940;i:744.
5. Homans J. Thrombosis of the deep leg veins due to prolonged sitting. *N Engl J Med* 1954;250:148-9.
6. Aldington S, Pritchard A, Perrin K, James K, Wijesinghe M, Beasley R. Prolonged seated immobility at work is a common risk factor for venous thromboembolism leading to hospital admission. *Intern Med J* 2008;38:133-5. doi: 10.1111/j.1445-5994.2007.01597.x.