



## Fatal Deep Inguinal Infection after Diagnostic Coronary Angiography

### Tanısal Koroner Anjiyografi Sonrası Ölümcül Derin İnguinal Enfeksiyon

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#### Abstract

Herein we would like to share our case complicated with inguinal infection secondary to femoral haematoma after coronary angiography. A-79 years-old female underwent diagnostic coronary angiography suffered from a large haematoma in the right inguinal region where femoral artery puncture was performed at another hospital. She was treated at same hospital 16 days and discharged. She presented to our department with a deep ulcerative and ruptured wound in the femoral artery puncture site. The wound-site culture revealed *E. coli*. After appropriate antibiotic treatment and wound care, the deep inguinal infection began healed. Purulan material and swallowing decreased and patient discharged. After 8 days, she came back with shock presentation and hospitalised to intensive care unit, but she died within 3 hours. We emphasised that the importance of prevention and management of access site haematoma during percutaneous procedures is vital and should not be neglected in routine practice.

**Key words:** Groin infection, coronary angiography

#### Özet

Bu yazıda koroner anjiyografi sonrası femoral hematoma sekonder inguinal enfeksiyon gelişen bir vaka sunmak istiyoruz. Koroner anjiyografi yapılan 79 yaşında bayan hasta femoral ponksiyon yeri olan sağ inguinal bölgede büyük bir hematomla aynı hastanede yatmış ve 16 gün tedavi gördükten sonra taburcu edilmiş. Hasta kliniğimize femoral ponksiyon yerinde derin ülsere ve rüptüre olmuş yara ile başvurdu. Yara yeri kültüründe *E.coli* üredi. Hastaya uygun antibiyotik tedavi ve yara yeri bakımı yapıldı. Pürülan materyal azaldıktan ve yara yeri iyileşmeye başladıktan sonra hasta taburcu edildi. Hasta 8 gün sonra şok tablosunda tekrar başvurdu ve hasta yoğun bakıma yatırıldıktan 3 saat sonra yaşamını yitirdi. Bu vaka perkütan girişimler sonrası gelişen hematomun önlenmesi ve tedavisinin ne kadar önemli olduğunu göstermesi açısından önem arz eder.

**Anahtar kelimeler:** Kasık enfeksiyonu, koroner anjiyografi

#### Introduction

Coronary angiography has become frequent procedure as a diagnostic and therapeutic manner. Most access site complications includes haematoma and pseudoaneurysm and those complication frequently observed in patients who were older than 60 years of age or female<sup>1</sup>. To be aware of complications it is very important to examine access site to

prevent further complications. Herein we would like to share our case complicated with inguinal infection secondary to femoral haematoma after coronary angiography which resulted in fatal outcome.

#### Case report

A 79 years-old female underwent coronary angiography without any complications except

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for a large haematoma in the right inguinal region where femoral artery puncture was performed at another hospital. Her medical history was unremarkable except history of uncontrolled diabetes mellitus. She was treated at same hospital 16 days and referred to our emergency department with a deep ulcerative and ruptured wound in the femoral artery puncture site. In physical examination, there was an approximately 2 × 2 cm open, ulcerative purulent area in which cutaneous and subcutaneous tissues were destructed and surrounded by a hyperemic area in the access site (Figure 1). Laboratory parameters were as follows: WBC: 4.700/mm<sup>3</sup>, Hb: 12.7 g/dL, platelets: 348.000/mm<sup>3</sup>, fasting glucose: 114 mg/dL, urea 25 mg/dL, creatinin: 0.75 mg/dL, AST: 18 IU, ALT: 16 IU, Na: 135 mmol/L, K: 3,48 mmol/L. The patient was consulted with department of infectious diseases. They recommended medical treatment for primary healing of the wound site, and piperacillin / tazobactam treatment was then arranged. Wound-site culture revealed E-coli and blood culture was negative.

After appropriate antibiotic treatment and wound care, the deep inguinal infection begin healed and purulent discharge was decreased and patient was sent to her house by prescribing oral antibiotics (amoxillin clavulanic acid plus ciprofloxacin). After 8 days, patient came back with high fever and shock presentation to emergency department. TA: 70/40 mmHg, pulse: 110/min BUN: 86 mg/dl, Cr: 5.43mg/dL Glu: 300 mg/dL, Na: 32 mmol/L, K: 3.84mmol/L, WBC: 12.6 mm<sup>3</sup>, Hb: 12.1g/dL, PLT: 222.000/mm<sup>3</sup>, AST: 21 IU, ALT: 7 IU. She emergently hospitalized in intensive care unit with the diagnosis of septic shock. Access site seem to be consistent with recurrent infection.

According to information of her relatives she had stopped using antibiotic drugs. During close follow-up urinary output remained to be absent. Inotropic agents was initiated however in a short time she died despite all resuscitative efforts.



**Figure 1.** Deep ulcerative, purulan and ruptured wound in the right femoral area

### Discussion

Hospital-acquired infections due to interventions are a major cause of morbidity and mortality throughout the world. Diagnostic coronary angiography and percutaneous coronary intervention mediated infections are rare. Cardiac catheterisations are common medical procedures and are widely used for both diagnosis and treatment. Among possible complications of cardiac catheterisation, those related to the access site are relatively common. The majority of the complications related to access site in cardiac catheterisation are bleeding, haematoma, and pseudo-aneurysm formation from punctured femoral arteries<sup>2</sup>. However, groin infection after femoral artery catheterization is unusual, occurring with an estimated frequency of less than 1%<sup>3,4</sup>.

The causative agent of inguinal infection complicating cardiac catheterisation is usually *Staphylococcus aureus*<sup>5,6</sup>. The other causative agents are infrequent. Causative agent in our

case was *E coli*. *E coli* is a member of normal bowel flora. It is generally cause of urinary system infections. *E coli* is a rare causative agent of soft tissue infections. At this case, *E coli* may be migrated from anal region. Our patient was elderly and she had diabetes mellitus. Early reuse of the initial puncture site, prolonged retention of the femoral sheath, bleeding or haematoma at the femoral sheath insertion site, pseudoaneurysm formation, and use of percutaneous suture mediated closure devices are mentioned to be as risk factors of development of infectious complications after cardiac catheterisation<sup>5,6</sup>. The infections related with hematoma can easily be treated by antibiotics, but as in our case, these infections may progress to septic shock presentations if they are elderly and diabetic. In these patients, optimal care must be shown concerning sterility. If infection occurs after hematoma in these risky cases patients must not be discharged from the hospital until completion of adequate antibiotic treatment.

The contralateral site should be preferred when repeat catheterisation is indicated in a short time period. The role of antibiotic prophylaxis to prevent possible secondary infection is unclear. However attention should be exerted in elderly, women, diabetics, immune suppressed and prosthetic valve patients<sup>7</sup>.

In conclusion, coronary angiography is an invasive procedure and may cause serious deep wound infection in access site. In cases with hematoma at access site we recommend rigorous hygiene at that site and close follow-up for possible secondary infection particularly in elderly and diabetic patients.

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