

Transient femoral nerve palsy after diagnostic coronary angiography

Tanısal koroner anjiyografi sonrası ortaya çıkan geçici femoral sinir felci

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Introduction

Femoral nerve complications after femoral arterial or venous catheterizations are extremely rare. Most of these complications are due to retroperitoneal and groin hematoma as well as pseudoaneurysm. Traumatic neuropathy may also occur secondary to digital compression of the inguinal region after catheterization.

We herein report two cases with transient femoral palsy following diagnostic angiography, both of which were independent of hematoma or mechanical pressure.

Case Reports

Case 1

A 51-year-old man, with exertional dyspnea was subjected to diagnostic coronary angiography. He had hypertension and hypercholesterolemia and had been smoking for 25 years. He had been suffering from type II diabetes mellitus for 12 years complicated with peripheral neuropathy. During coronary angiography via right femoral artery, the patient complained of numbness in his right thigh. Physical examination performed after the procedure revealed no hematoma or swelling at the puncture site. Neurological examination showed sensory anesthesia in the medial part of the thigh in addition to severe weakness of the quadriceps muscle, as the patient was unable to straighten his leg. We then performed ultrasonography, which revealed no hematoma or pseudoaneurysm. The sheath was pulled out and a sand bag was applied for 4 hours. The patient was not discharged in order to be observed overnight. Although there was no improvement at the end of the 6th hour after the procedure, it started to improve at about the 9th hour. After 18 hours following the catheterization, the patient completely healed and was discharged from the hospital.

Case 2

A 67-year-old man with previous coronary by-pass surgery and a stent implantation to left circumflex artery 2 months ago underwent diagnostic coronary angiography because of his typical chest pain. He was a non-smoker but he had hypertension, hypercholesterolemia controlled with statins and diabetes mellitus complicated with peripheral

neuropathy. After coronary angiography, the patient complained that he was unable to ambulate his left leg while transferring to his bed. Neurological examination showed that he was able to pull but unable to straighten his left leg because of the weakness of the quadriceps muscle. Sensory anesthesia over anterior and medial parts of the thigh was also depicted. All of these findings indicated femoral nerve palsy. Ultrasonographic examination revealed that the right groin was free from hematoma or pseudoaneurysm. The sheath was pulled out and a sand bag was applied. He was not discharged from the hospital and we planned to perform electromyography. On the other hand the palsy completely resolved by the next morning and he was discharged to home.

Discussion

Femoral neuropathy following cardiac catheterization is an extremely rare but an unpleasant complication as it may decrease the quality of life of the patient. In a study of 9585 cardiac catheterizations, Kent et al. (1) reported 20 patients (0.21 %) with femoral neuropathy, which were due to local hematoma or pseudoaneurysm. Pressure applied to the puncture site for hemostasis is also implicated as one of the causes. In a case reported by Kuruvilla et al. (2), femoral palsy caused by prolonged digital pressure, it had taken nearly 6 months for complete recovery.

The reason of femoral palsy in our cases were different from the proposed mechanisms above as there were not local hematoma or pseudoaneurysm and both of them had occurred before the pressure was applied on the inguinal region. These cases occurred nearly a year apart in a catheterization laboratory in which nearly 3000 cases a year are being performed. For local anesthesia, we used approximately 10cc prilocain (2%), 3-4 cc of which was injected into the lateral site of the femoral pulsation by experienced operators. It may be speculated that the reason of femoral palsy might have been due to accumulation of the local anesthetic drug around the femoral artery or injection the drug within the myelin sheath. In their cadaver study carried out to understand the mechanisms of transient femoral nerve palsy after ilio-inguinal field blockade, Rosasrio et al. (3) showed that improper injections may cause anesthetic drug to accumulate around the femoral nerve. What we encounter in our daily practice that, when the tip of the needle contact with the femoral nerve the patient feels a numbness spreading down to

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his leg sometimes accompanied by a jerk. Interestingly, both of our cases had diabetic neuropathy which might have prevented the feeling of numbness, i.e. warning sign, and facilitated inadvertent peri- or intraneuronal injection. Another common feature of both cases was that the femoral palsy started to resolve at nearly 9-12th hours with a complete recovery by the next morning. We do not have information to explain this situation. But it may also be speculated that late reabsorption of prilocain if it was injected within the myelin sheath or immediate healing of a small reversible injury of the neuronal fibers might have been the reasons.

Conclusion

Femoral palsy is a rare complication of cardiac catheterization performed via femoral artery. Although it is due to local compression of a hematoma or pseudoaneurysm or rarely prolonged digital pressure, the present cases showed that it may also occur independent of these mechanisms. Local injury of the femoral nerve by the needle or the

anesthetic drug is the most likely explanation. Operators should be aware of this rare complication and pay attention during local anesthesia especially in diabetic patients. Upon the occurrence of this unpleasant complication, it is better to observe the patient nearly 24 hours before planning further evaluation.

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Giant vegetation on permanent endocavitary pacemaker lead and successful open intracardiac removal

Kalp içi yerleşimli kalıcı pacemaker teli üzerinde bulgularanan dev vejetasyon ve başarılı açık cerrahi yaklaşımla çıkarılması

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Introduction

Pacemakers (PMs) and implantable cardioverter defibrillators (ICDs) have become life-saving therapeutic tools for patients with cardiac arrhythmia (1). The incidence of infective endocarditis due to pacemaker lead infection ranges between 0.13% and 19.9% (2). The incidence of serious and potentially fatal complications such as endocarditis and septicemia is around 0.5% (3).

Case report

Our case was a 58-year-old male who had undergone a VVI mode PM implantation 15 years ago at the Cardiology Department of our institute due to total atrioventricular block. Two months before his present admission he started to experience chills and shivering as the main complaints. For the last three weeks he also had fever. He had diabetes mellitus. At the time of his admission, a transthoracic echocardiography (TTE) was performed showing a giant vegetation attached on intracardiac pacemaker lead. Transesophageal

echocardiography (TEE) also confirmed these vegetative masses of 27x19 and 17x12 mm in size (Fig. 1). His body temperature was measured as 39°C. Initially, a leucocytosis of 13.4x10⁹/l was associated with a neutrophilia of 11.1x10⁹/l. Biochemical abnormalities included elevated creatine kinase of 201 IU/l, erythrocyte sedimentation rate of 75mm/h and C-reactive protein of 20.52 mg/l. An empirical antibiotherapy with intravenous cephtriaxone and gentamicin was initiated. Initial blood cultures grew methicillin-sensitive Staphylococcus aureus. Antibiotic cover was changed to teicoplanin after sensitivities were obtained, with the addition of gentamicin for synergistic bactericidal effect. After 5 weeks of antibiotherapy and weekly repeated echocardiograms showing no shrinkage of vegetations, surgical therapy consisting of 3 stages was planned. In the first stage, following median sternotomy a pocket for the generator was prepared at the left pectoral area and a new permanent epicardial pacemaker (St Jude Medical Identity ADxSR SSIR 5180, REF:1084T-54CM) was implanted. In the second stage, with the help of inflow occlusion technique right atriotomy was performed and the pacemaker lead was extracted with the attached giant vegetations (Fig. 2, 3). In the last stage, the former pacemaker generator

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