PETİDİNE BAĞLI ANİ ÖLÜM

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ÖZET

İlk sentetik opioid analjezik olan pethidine potansiyel bir antispazmodik ajan olarak geliştirilmiştir. Petidin orta-şiddetli ağrı tedavisinde kullanılır. Morfinden daha güvenli ve bağımlılık açısından daha az risk taşır. Aşırı doz, respiratuar depresyon veya komaya neden olabilir.

Sunduğumuz olgu, hastanedeki odasında ölü bulunan 34 yaşında bir erkek doktordu. Doktor koltukta oturuyordu ve yanında kullanılmış 100 mg Aldolan (petidin) ampülü ve bir enjektör bulundu. Akrabalarından alınan bilgiye göre birkaç yıl önce servikal disk hernisinden opere olmuştu ve operasyon sonrasında başağrılarından şikayetçiydi. Başağrılarından dolayı sıklıkla oral analjezik almaktaydı.

Mikroskopik incelemede akciğer arteriol ve kapillerleri ile pulmoner arter dallarının lümenlerinde trombuslar mevcuttu. Detaylı tıbbi hikaye, sistemik otopsi, histopatolojik inceleme ve toksikolojik analiz ölüm sebebinin petidine bağlı respiratuar arrest olduğunu ortaya çıkardı. Bu çalışmada hastaların sağlık çalışanı dahi olsa ilaç kullanımının bir doktor gözetiminde olması gerekliğine dikkat çekmek istedik.

Anahtar Kelimeler: petidin, ani ölüm, solunum durması

PETHIDINE RELATED SUDDEN DEATH

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ABSTRACT

Pethidine, the first synthetic opioid analgesic, was developed as a potential antispasmodic agent. Pethidine is used to treat moderate to severe pain. It is safer than morphine and carries less risk for addiction. Pethidine overdose can cause respiratory depression or coma.

The case we present is a 34 years old male doctor found dead in his room at the hospital. Doctor was found dead sitting on an armchair where there was a used 100 mg Aldolan (Pethidine) ampoule and an injector. According to information taken from his relatives, he had been operated for cervical disc hernia a few years ago and complaining about headaches after operation. He had been frequently using oral analgesic drugs because of his headaches.

In the microscopic examination, there were thrombi in the lumens of pulmonary artery branches, arterioles and capillaries. A detailed medical history, a systemic autopsy, histopathological examination and toxicological analysis revealed that the cause of death was the pethidine-related respiratory arrest. In this study, we wanted to point out that drug usage in patients should be under supervision of a doctor even if they are health care workers.

Key words: *pethidine, sudden death, respiratory arrest*

INTRODUCTION

In the treatment of moderate to severe non-cancer pain in selected patients, prescribed opioid analgesics are widely accepted as a treatment option (1,2). Meperidine (pethidine), the first synthetic opioid, was developed by German chemists as an antispasmodic drug. The analgesic effects of pethidine were identified several years later in 1939 (3). Pethidine is commonly used in single dose as a preoperative medication and also in multiple doses as an analgesic. Correlations between plasma concentrations of pethidine, analgesia and side effects such as respiratory depression have been established (4).

CASE

A 34 years old male doctor was found dead in his room at the hospital. Doctor was found dead on an armchair where there was a used 100 mg Aldolan (Pethidine) ampoule and injector near it. According to information taken from his relatives, he had been operated for cervical disc hernia a few years ago and complaining about headaches after operation. He had been frequently using oral analgesic drugs because of his headaches.

At autopsy there were no specific macroscopic findings in the visceral organs except lungs. The weight of lungs was increased and cut surfaces were dark brown colored and more solid. For histomorphologic examination, the tissue specimens obtained from the brain, cerebellum, liver, lung, heart, kidney and pancreas were sent to the pathology laboratory of Inonu University Medical Faculty in 10% formalin solution. For each specimen, standard pathological examination was performed macroscopically and microscopically. After the routine tissue processing, the sections were stained with hematoxylin-eosin (H&E) and examined under the light microscope. Microscopically, trombi were seen in the lumens of arterioles and capillaries of the lung (Figure 1) as well as the branches of the pulmonary arteries (Figure 2). Minimal myocardial interstitial fibrosis was detected. A detailed medical history, a systemic autopsy, histopathological examination and toxicological analysis revealed that the cause of death was the pethidine-related respiratory arrest.

DISCUSSION

Deaths resulting from extraordinary reasons, such as the firearm injuries, explosive injuries, penetrating stab wounds, traffic accidents, falls, occupational accidents, intoxications, electrocution, strike of lightening and mechanic asphyxia can be considered as forensic cases. Here, the most important task of the physician is, while practicing the medical aid needed to the patient, to determine whether it is a forensic case or not. After deciding that it is a forensic case, physician have to notify the police forces as soon as possible (5,6).

Drug intoxications and abuses are always considered as forensic cases. Drug intoxications are often seen as suicide cases but in our case the intoxication of pethidine occurred due to the abuse of pethidine for its analgesic effects. In the literature, Büyük et al., reported a sudden death of a health care worker related with abuse of pethidine, as our case (7).

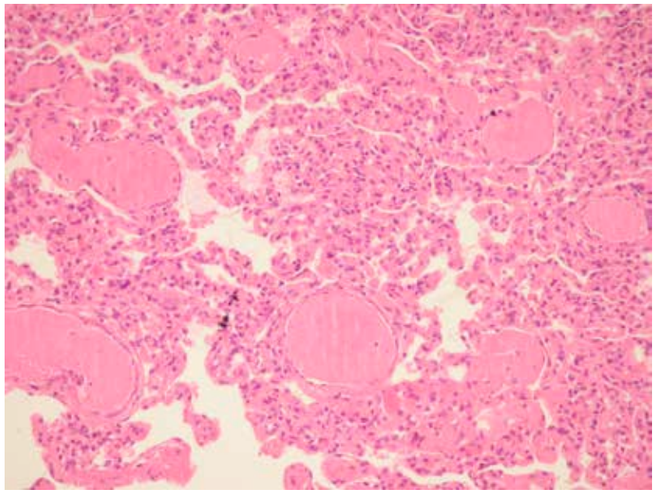

Figure 1: Arterioler trombosis on the lung sections. H&E X100

Pethidine inhibits serotonin and noradrenaline reuptake mechanisms. The pethidine usage may result in the production of serotonin toxicity in the presence of a second medication with serotonergic activity. Serotonin toxicity (also known as serotonin syndrome) is caused by the excess serotonin levels in the central nervous system (CNS). Selective serotonin reuptake inhibitors (SSRIs), monoamineoxidase inhibitors (MAOIs) and direct stimulators of the serotonin receptors (bromocriptine, lithium) can cause serotonin toxicity with the simultaneous use of pethidine (8,9). There is no other drug use history in our case.

Anaphylactic and true allergic reactions to opioid analgesics are rare (10). There was only one anaplactic reaction to pethidine reported between years 1975-1987 (11). Daldrup reported a case of sudden death due to acute pethidine intoxication (12). In our case, toxicology report indicated that only pethidine was present in the serum and urine. Unfortunately we couldn't obtain detailed pethidine level measurement results.

Opioids are widely used drugs and because of their narrow therapeutic index, they can be associated with severe toxicity. In this study, we wanted to point out that drug usage in patients should be under supervision of a doctor even if they are health care workers.

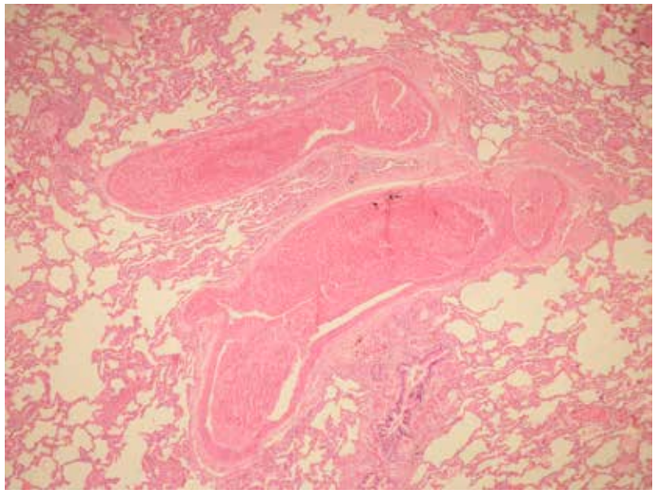

Figure 2: Trombosis of the branch of pulmonary artery. H&E X400

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