Fatal Fentanyl Intoxication Following Excessive Transdermal Application

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Abstract

The case history and toxicological findings of a fatal fentanyl intoxication due to the application of multiple transdermal patches are presented. An 83 year-old white female with terminal cancer was found dead with three 100 mg/h fentanyl patches on her chest. The autopsy and subsequent histological studies revealed extensive areas of gastric carcinoma, a large atrial tumor, ulceration of esophagus, metastasis of peripancreatic lymph nodes and a recent surgical removal of part of the lower lobe of the left lung. Toxicological analysis by GC/MS yielded fentanyl concentrations of blood, 25 ng/mL; brain, 54 ng/g; heart 94 ng/g; kidney 69 ng/g; and liver 104 ng/g. The cause of death was determined to be fentanyl overdose and the manner of death was ruled undetermined as the investigation was unable to conclusively establish whether this was an accidental overdose, a suicide, an assisted suicide, or possibly a homicide. This case demonstrates the need for caution in self-administration of transdermal fentanyl patches, in particular, the dangers inherent in the application of multiple patches which can result in the release of potentially toxic or lethal doses.

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Transdermal fentanyl and buprenorphine patches are widely used for outpatient management of chronic pain. However, several cases of deaths connected with their administration have been described in literature. We present an unusual and exceptional homicidal death attributed to a combination system of acute transdermal opioids poisoning and strangulation. No cases have been published regarding fatal intoxication due to transdermal application of buprenorphine patches. In this paper, we describe an unusual murder of a woman, treated with transdermal opioids for cancer pain at terminal stages, committed by her husband combining an overdose of fentanyl/buprenorphine transdermal patches and strangulation.

Case History.

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