

## Case Report

### Death Due to Butorphanol Ingestion: A Case Report

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#### ABSTRACT

Butorphanol poisoning is not common. A case is presented of ingestion of toxic dose of butorphanol, which proved fatal in a young adult. Although the exact amount ingested could not be ascertained, the circumstances and observations pointed clearly to death due to overdose by butorphanol.

**Key Words:** Butorphanol

#### Introduction

##### *The Case*

A male Lebanese national aged 27 years, was found not responding to any communication by his friend in their hotel room one evening. He appeared unconscious, and was shifted to the casualty department of Goa Medical College, Bambolim, Goa at 7.30 pm the same evening. After a brief examination, the casualty medical officer gave an opinion of "dead on arrival". The dead body was then shifted to the mortuary of the department of forensic medicine of the same medical college for an autopsy, to ascertain the exact cause of death.

##### *Autopsy Findings*

The deceased individual was a well built, fair complexioned, young male. External features were unremarkable, with no signs of violence or bleeding. There were no obvious external injuries on the body, nor was there bruising, or evidence of a ligature mark on the neck.

Internal examination revealed no scalp injuries, fracture of skull bones, or intracranial haemorrhage. Brain however appeared congested. There were no fractures of ribs, but both lungs were heavy, wet, subcrepitant, congested, and oedematous. Neck structures were normal. There were no fractures of hyoid bone, thyroid cartilage, cricoid cartilage, or tracheal rings. Most of the viscera, including the liver, kidneys, brain, and spleen were congested. The heart however did not reveal any signs of gross pathology. The coronaries were patent. Pelvic structures appeared normal.

Viscera, including stomach and its contents, portion of the small intestine with contents, and cut slices of liver and kidney, together with samples of blood and urine were sent for toxicological evaluation with particular reference to the presence of ethyl alcohol, narcotic drugs and some other common toxins/drugs. Selected tissues were also set aside for histopathological examination.

##### *Results of Toxicological Screening*

Butorphanol, an opiate analgesic was detected in stomach and intestinal contents. 2-hydroxy-benzene acetic acid, a metabolite of several analgesics, was detected in the visceral and blood samples.

##### *Results of Histopathological Analysis*

Sections of heart, kidneys, spleen, and brain revealed congestion of blood vessels. Sections of lungs revealed

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marked congestion, with interstitial and intra-alveolar oedema. Sections of liver revealed dilatation and congestion of sinusoids, and mild mononuclear infiltration of the portal tracts.

#### *Final Opinion*

After perusal of the autopsy findings, chemical analysis report, and histopathological examination, an opinion of death "consistent with overdose of butorphanol" was furnished.

#### **Discussion**

Butorphanol is a narcotic analgesic, which is indicated in the management of moderate to severe pain.<sup>1</sup> It is generally administered intramuscularly or intravenously, or by nasal spray. Butorphanol is illegally available as a white powder in the United States and some other countries. Although butorphanol may have a lower potential for producing dependence than pure opiate agonists such as morphine, there are several reports of abuse with butorphanol.

Butorphanol, in a dose of 2 mg produces a similar degree of respiratory depression as with 10 mg of morphine, but a ceiling effect becomes apparent with higher doses.<sup>2</sup> It is said to be a less potent respiratory depressant than fentanyl,<sup>3</sup> but more potent than nalbuphine.<sup>4</sup>

Butorphanol is absorbed from the gastrointestinal tract, and undergoes high first-pass metabolism, with peak concentrations reached after one to one-and-a-half hours after oral administration. It is extensively metabolized in the liver, and excreted mainly in the urine.<sup>5</sup>

Large doses of opiates such as butorphanol produce respiratory depression and hypotension, with circulatory fail

ure and deepening coma. Death usually occurs from respiratory failure. Pulmonary oedema after overdose is a common feature in fatalities among opiate addicts.<sup>1</sup> There is one report of fibrous myopathy associated with chronic intramuscular abuse of butorphanol.<sup>6</sup>

Butorphanol is available in India as injection for intramuscular or intravenous use, and is utilised mainly as an analgesic, and as an adjunct to anaesthesia. Deaths due to butorphanol are very rarely reported in India, and this is one of the few deaths reported so far.

This case is discussed here due to rarity of butorphanol fatalities in India.

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