

Lidocaine Poisoning in a Pediatric Patient, Regarding a Case

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Abstract

Next, a pediatric branch case is presented about a two-year-old girl who underwent surgery in a basic line hospital after a bite from an unknown breed dog, who developed serious symptoms after the intervention and who later is diagnosed as a systemic poisoning by local anesthetic, requiring mechanical ventilation support, it is concluded with the total recovery of the patient.

Keywords: *Lidocaine; Mechanical Ventilation*

Introduction

Lidocaine poisoning is a condition in which excess lidocaine is produced in the body. Lidocaine is a local anesthetic commonly used to block the sensation of pain in a specific area of the body. If an excessive amount of lidocaine is ingested, it can cause poisoning, which can be life-threatening [1].

Symptoms of lidocaine poisoning include dizziness, drowsiness, seizures, irregular heartbeat, and failure of various organs. The severity of symptoms depends on the amount of lidocaine ingested and how quickly medical treatment is received [1].

Treatment for lidocaine poisoning depends on the severity of symptoms and may include medication to control symptoms, supportive treatment to help organs function properly, and ongoing monitoring in a hospital setting [2].

There is no precise figure available on the frequency of lidocaine poisoning. However, it is a relatively rare event because lidocaine is generally used in a controlled medical setting and under supervision [3].

Most cases of lidocaine poisoning are the result of misuse or accidental overdose of the medication. Poisoning can also occur if a person accidentally ingests a topical product that contains lidocaine [4].

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Presentation of the Case

Two-year-old patient, female, from El Paraíso, with a history of dog bite (it is unknown if he has been vaccinated) at 3:00 p.m. showing soft tissue injuries. He was evaluated at the El Paraíso hospital where only cures were performed where he was later referred to the Gabriela Alvarado basic hospital where he was received at 5:00 p.m. visualizing wounds in the distal quadriceps' region, three wounds being approximately 1 cm long and 3 mm deep and in the popliteal region with a length of 5 cm affecting the dermis and epidermis, the surgical service doctor is presented who indicates points of approach and coverage hospital antibiotic.

Asepsis and antisepsis are started with the administration of 30 ml of lidocaine in total in the perilesional area, without achieving an analgesic effect since during cleansing there is still pain, 10 minutes later the patient begins with tonic-clonic, oculogyric seizures, sialorrhea without subsidence, we proceed with the administration of diazepam dose at 0.04/kg intravenous STAT and nasal tip oxygen at 3 liters. However, the patient continues to convulse in a convulsive state, inducing vomiting, generating bronchial aspiration and since the seizure continues, a second dose of intravenous diazepam 0.04/kg is administered.

After this, the patient ceased the seizure but started a saturation of 40%; nonreactive mythical pupils, positive ventilation is started, recovering saturation to 99% later, a pediatrician specialist arrives and proceeds to start the intubation protocol by a pediatrician performing chest x-rays after tube placement where right lung collapse is displayed, it is reported to the pediatric emergency service at Hospital Escuela Universitario de Primeri Nivel, where she was received and admitted to the NICU.

No personal pathological history of the girl was reported and after the intervention under medical protocols, the patient's discharge, a full recovery discharge is recorded.

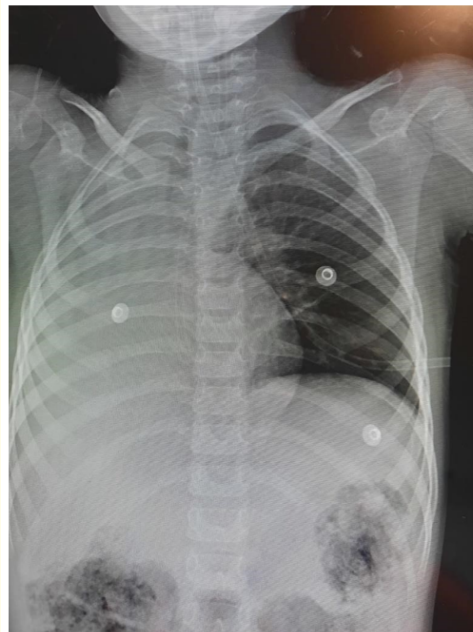


Figure 1: Direct image obtained by a medical research team during the hospital stay.

Discussion

Local anesthetics are medications that prevent the generation and transmission of nerve signals in excitable tissues, including bone marrow, nerve roots, peripheral nerves, and other tissues such as cardiac muscle, smooth muscle, and the brain [5].

The current incidence of systemic infection due to local anesthetics is not exactly known; however, in the Closed Claims Analysis (which records court cases with sentences in the United States) there are nine cases of death (10% of 88 cases of lawsuits related to regional anesthesia) after intravenous (IV) injection or absorption that caused intoxication [6]. More recent statistics estimate that for every 10,000 peripheral nerve blocks there are 7.5 to 20 systemic episodes due to local anesthetics and for every 10,000 epidural blocks only four events are reported [7].

Local anesthetic poisoning occurs when the concentration levels of the drugs in the blood are too high, due to a high dose or unintended intravenous administration. Due to the increase in the use of locoregional anesthesia techniques, it is important to be alert to systemic poisoning by local anesthetics as an anesthetic complication with low incidence, but high mortality, and one of the most common causes of anesthetic cardiorespiratory arrest [8].

The clinical presentation of this complication is highly variable and can include a wide variety of symptoms, mainly related to neurological and cardiovascular toxicity. Although rare, these reactions can be serious and have irreversible results, including death of the patient. Prevention is more effective than treatment, and management includes advanced measures of cardiopulmonary resuscitation, drug treatment, and early use of lipid emulsions [8].

Conclusion

Prevention is the best way to decrease the risk of systemic poisoning by local anesthetics. There is no single solution to avoid poisoning, but it is important to consider several preventive measures when administering a dose of local anesthetic, such as patient risk factors, using ultrasound to view anatomy in real time, carefully choosing the type of anesthetic, and the dose, and aspirate before injecting and divide the dose. In the event of a systemic event due to local anesthetics, basic resuscitation measures are essential to resolve most mild and moderate cases. The 20% lipid emulsion is the only specific treatment proven effective, based on case reports and animal studies.

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