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Short Report

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A rare case of pediatric intoxication: Bufotoxin bradycardia

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Abstract

The poison contained on the skin and in the glands of the Bufonidae has a digital is toxicity and carries a high mortality. Toad venom was considered responsible for the development of severe clinical manifestations such as vomiting, diarrhea, neurological disorders and arrhythmias. If not readily recognized by the clinician, this type of intoxication can be fatal. Prompt treatment with digoxin specific Fab fragment antibodies may be lifesaving in the treatment of toad venom poisoning. This case report alerts physicians to the need to be aware of this rare toxin.

Keywords: toad venom intoxiacation; third-degree AV block; digoxin specific fab fragment antibodies.

Background

The Bufonidae (commonly called toad) contains numerous toxic substances in the skin and in the parotid glands. In literature there are few cases that describe the effects of toad venom poisoning from ingestion of toad soup or other food formulations containing the amphibian. Poisoning from ingestion of toad eggs is rarer. Although it may be an extremely infrequent intoxication, if not identified and recognized it can be life threatening. Toad venom poisoning has a digitalis toxicity and causes gastrointestinal and cardiac conduction abnormalities like digoxin intoxication [1-3]. Only timely recognition of poisoning and early treatment can save patient's life.

Case presentation

On 29 May the Emergency Operation Center received an emergency call from a mother of an 8-year-old child. The woman told us that her son has had numerous episodes of vomiting and has become progressively drowsy. Immediately an ALS ambulance was sent. At a first clinical examination the patient was responsive to the call but progressively tended to drowsiness, he didn't present any acute neurological deficit or neck stiffness. Upon detection of vital parameters, the child was hypotensive (90/50 mmHg) and extremely bradycardic (40 bpm). He had a normal respiratory rate and normal body temperature.

An electrocardiogram was taken immediately and showed a third-degree AV block. As a diagnostic completion, the ALS team performed a Glucostick and an Arterial Blood Gas Analysis (EGA). The glucostick was normal and the EGA showed the following metabolic concentrations: Sodium 133 mmol/l, potassium 4.1 mmol/l, p^H 7.258 and bicarbonate 19.7 mmol/l with increased value of lactates. The mother reports that the same morning she went with her child to the river for a walk and that she had seen the child ingest gelatinous eggs found along the riverbed while he was playing. The ALS team, thanks also

to the support of the personnel of the Emergency Operations Center, was put in contact with the Poison Center of Careggi hospital in Florence in the suspected bufotoxin poisoning. The Poison Center recommended to start supportive fluids waiting the administration of digoxin specific Fab fragment antibody as antidote. A technical stop was made to the Emergency Room of Bibbiena hospital for life support and anesthetist counseling. The patient was centralized with Helicopter Emergency Medical service (HEMS) at the Meyer Hospital in Florence where he was be treated with digoxin-specific Fab fragments antibodies.

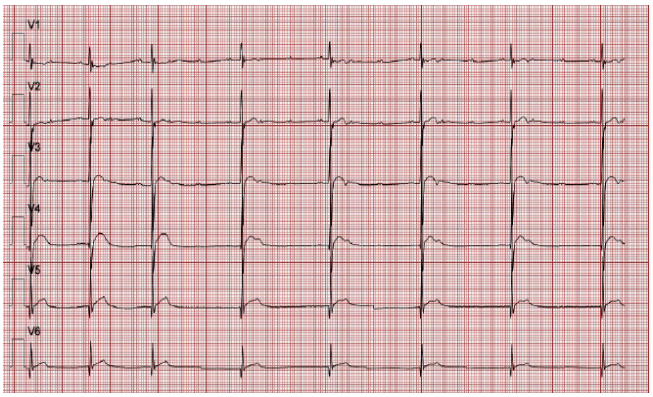

Figure 1

Discussion

The primary treatment modality for toad poisoning cases is life support. If the poison is ingested, treatment should be directed at preventing absorption of the toxin by the gastrointestinal system. Therefore, gastric lavage and administration of activated charcoal and cathartic should be performed. Transcutaneous pacing and the administration of various antiarrhythmic agents may be useful in the temporary treatment of cardiovascular toxicity but, the only thing that has been found to be lifesaving is the immediate administration of a digoxin-specific Fab fragments antibodies [4,5]. A marked awareness by clinicians is clearly necessary for optimal management of such intoxication. Greater vigilance and timely initiation of life support measures associated with definitive treatment with the specific antidote can save patient's life [6,7].

Declarations

Ethics approval and consent to participate: This survey did not involve the collection or use of confidential or sensitive personal health information. Ethics approval was not required under the Geneva jurisdiction for reporting the data presented in this study. The present study was conducted in compliance with the Helsinki Declaration of 1975, as revised in October 2013.

Consent for publication: Not applicable.

Availability of supporting data: All data generated or analyzed during this study are included in this publication.

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