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(CASE REPORT)

Deep venous thrombosis of the axillary and humeral veins following Ecstasy use: A case report

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Abstract

Background: 3,4-methylenedioxymethamphetamine (MDMA), or "Ecstasy," is a semi-synthetic stimulant and hallucinogen widely used recreationally. While known for producing euphoria, it is associated with severe medical complications including serotonin syndrome, rhabdomyolysis, and multi-organ failure. Although MDMA is known to cause various vascular and muscular lesions, deep venous thrombosis (DVT) in the upper limbs remains a rare but serious consequence.

Case Presentation: A 20-year-old male was admitted to the emergency department after consuming ecstasy, Zepam, and alcohol. He presented with classic signs of serotonin syndrome (disturbed consciousness, hyperhidrosis, tremors, and fever) alongside intense pain and significant edema in the left upper limb.

Diagnostics: Venous echodoppler confirmed thrombosis of the left humeral and axillary veins. Laboratory tests revealed severe rhabdomyolysis (CPK: 23,304) and hepatic cytolysis.

Management: Treatment included anticoagulant therapy (low-molecular-weight heparin transitioned to Rivaroxaban), hydration, and analgesics.

Complications: On day 7, the patient developed compartment syndrome due to worsening edema. While the edema eventually regressed by day 9, the patient suffered persistent sensitivomotor deficits across the median, ulnar, radial, and musculocutaneous nerves.

Discussion: The relationship between MDMA use and thrombosis may be linked to the inflammatory response and extensive muscle damage seen in rhabdomyolysis, similar to the mechanisms observed in inflammatory myopathies. While other sites of MDMA-induced thrombosis (renal and aortic) have been documented, upper limb DVT is less common.

Conclusion: MDMA use can lead to life-altering, multi-visceral damage. Despite multidisciplinary management, the prognosis for such cases can be poor due to lasting nerve damage and muscle atrophy resulting from vascular and compartment complications.

Keywords: Veinous Thrombosys; Axillary Vein; 3;4-Methylenedioxymethamphetamine; Rhabdomyolisis

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1. Introduction

MDMA, commonly known as Ecstasy, is a semi-synthetic hallucinogen. It is said to produce a feeling of calm and peace, and heightened sensitivity with visual and auditory hallucinations. It is a controlled drug. Initially produced in 1914 as an appetite suppressant, but its indications have expanded to include the treatment of alcoholism, depression and post-traumatic stress disorder. It also causes thrombosis-like vascular lesions, and rhabdomyolysis-like muscular lesions. We report the case of a patient with thrombosis of the axillary and humeral veins following Ecstasy use.

2. Observation

This is the case of a 20-year-old male patient with a history of childhood nephrotic syndrome, admitted to the emergency department for consumption of 2 ecstasy tablets, 4 Zepam tablets and alcohol, having been found unconscious at home. On initial examination, the patient presented with a serotonin syndrome consisting of disturbed consciousness (GCS 12/15), hypersudation, chills, fever, tremors, shivering and areactive semi-mydriasis. The patient was hemodynamically and respiratorily stable. The patient also presented with intense pain in the left upper limb, with significant edema extending from the hand to the axillary fossa, not taking up the bucket, without sensitivomotor deficit or paresthesias.

A venous echodoppler of the left upper limb was requested initially revealing thrombosis of the left humeral and axillary vein. Arterial echodoppler was without abnormality. Standard radiography of the entire left upper limb was without abnormality. Biological workup revealed a rhabdomyolysis syndrome with LDH: 1479, CPK: 23304. Cytolysis was found with ASAT: 1333, ALAT: 430. Blood count: Hb: 18, WBC: 19450, Plq: 258000. Prothrombin level was 65% and aPTT 30.

Anticoagulant therapy with a low-molecular-weight heparin (LOVENOX) in curative dose, followed by an oral anticoagulant (Rivaroxaban), hydration and morphine analgesics were initiated.

The evolution after 7 days was marked by the onset of a compartment syndrome of the left upper limb following the aggravation of the edema, which had become shiny and tense. The patient began to experience paresthesia and paresis of the entire limb. The indication for a fasciotomy was discussed with the anesthesia team, although the patient presented a high risk of hemorrhage. The limb was elevated.

On day 9, a follow-up angioscan of the left upper limb was ordered, revealing no abnormalities. The edema had regressed considerably. Nevertheless, the patient retained a sensitivomotor deficit in the median, ulnar, radial and musculocutaneous nerve territories.

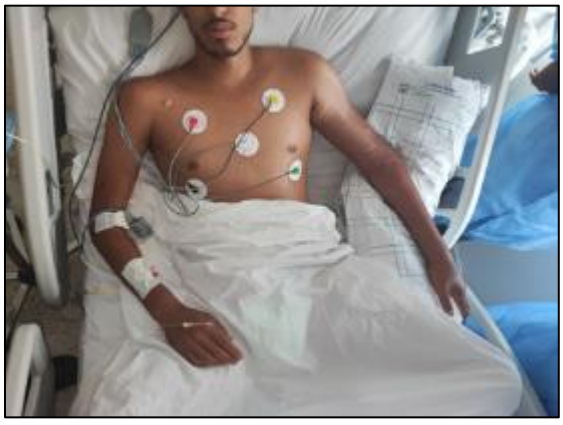

Figure 1 Clinical aspect of the edema of the left upper limb, complicated with a compartment syndrom

On day 10, the patient developed respiratory distress, indicating a thoracic angioscan, which revealed a large left pleural effusion with no evidence of pulmonary embolism. The patient underwent thoracic drainage, yielding a citrine-yellow fluid. Chemical analysis of the puncture fluid revealed a protein level of 17, indicating transudation. Cytological and bacteriological studies were unremarkable.

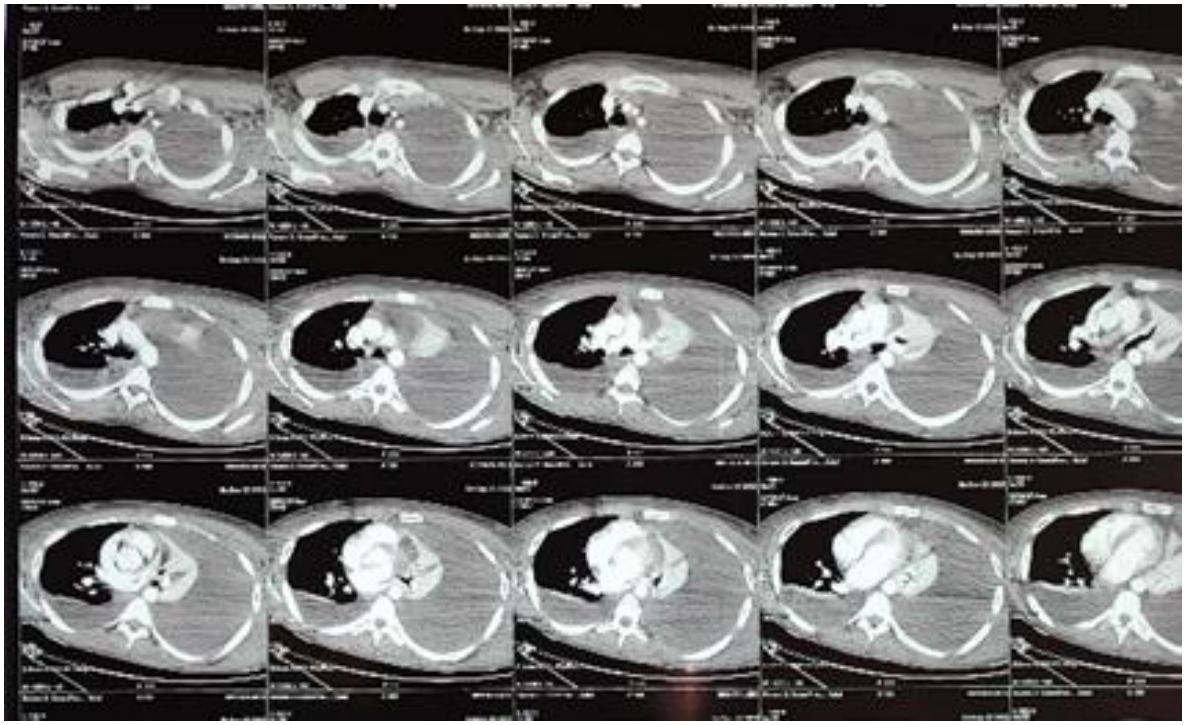

Figure 2 Thoracic CT scan showing the left pleural effusion

The patient was discharged at D-17 with a letter of rehabilitation and a request for ENMG.

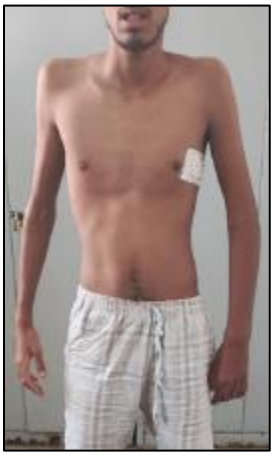

Figure 3 Amyotrophy of the left limb during follow up

He was seen after 1 week, with clinical examination showing amyotrophy of the arm, forearm and hand, with slight improvement in sensitivomotor deficits. However, the patient still had neurogenic pain.

3. Discussion

3,4-methylenedioxymethamphetamine (MDMA) is a semi-synthetic hallucinogen that chemically resembles mescaline and amphetamine. It is known by various popular names, one of the best known being Ecstasy. MDMA first appeared in dance clubs in the mid-1990s and quickly gained a reputation in the medical community for its harmful and lethal effects on a disproportionate number of young people. [1]

MDMA shares similarities with amphetamine as a stimulant, and mescaline as a hallucinogen. It produces sensations of increased energy, euphoria, emotional warmth and empathy towards others, as well as distortions of sensory and

temporal perception. It is known to cause the life-threatening serotonin syndrome, usually characterized by changes in mental status, changes in neuromuscular activity and autonomic instability. [5]

In our case, the patient presented with vascular and muscular manifestations, revealed by humeral and axillary vein thrombosis and rhabdomyolysis. On admission to the emergency department, the patient showed no disturbance of consciousness or hallucination, having been found late after taking MDMA.

Muscle lesions and inflammation have been associated with thrombosis in many other pathologies. Inflammatory myopathies such as polymyositis and dermatomyositis have been associated with extensive muscle damage, increasing the risk of venous thrombosis. [1] [2]

Muscle tissue contains various intracellular proteins, in particular actin and myosin filaments. Serum myosin levels have been demonstrated in polymyositis and dermatomyositis for several days after rhabdomyolysis [6]. To date, elevated myosin levels have not been described in connection with MDMA.

Several other sites of thrombosis have been reported, such as a renal thrombosis revealed on biopsy [3], and a myocardial infarction following an aortic thrombus revealed on chest CT by an intraluminal defect in the ascending aorta not consistent with aortic dissection. [4]

4. Conclusion

3,4-methylenedioxymethamphetamine has become widely used among young people despite its deleterious and sometimes fatal effects. Management is multidisciplinary because of the multivisceral damage it causes. Thrombosis of the upper limb following use is a rare but serious complication. The prognosis remains poor because of the nerve damage caused.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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