Adjuvant Treatment with Pentoxifylline in Patients with Cocaine-Induced Midline Destructive Lesions (CIMDL): Experience in an Otorhinolaryngology Service

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ABSTRACT

Cocaine-induced midline destructive lesions (CIMDL) are inflammatory, necrotizing, and progressive alterations affecting the nasal septum and central facial structures. These lesions are associated with chronic intranasal cocaine use, where intense vasoconstriction leads to ischemia, necrosis, and tissue destruction.

We report an observational clinical study involving 8 patients treated in our hospital's outpatient clinic, who received adjuvant therapy with pentoxifylline in combination with surgical intervention. Subjective and objective clinical improvement was observed in the post-treatment evolution, although the sample size is recognized as limited.

INTRODUCTION

Cocaine is a psycho-stimulant drug with increasing use worldwide. Its intranasal abuse can lead to severe midline facial destructive lesions. These injuries are multifactorial, involving chemical trauma, ischemia, inflammation, secondary infection, and autoimmune phenomena, such as ANCA-associated vasculitis. CIMDL may mimic diseases such as granulomatosis with polyangiitis (GPA), lymphomas, and sarcoidosis, thus complicating early diagnosis.

WHAT IS CIMDL?

Cocaine-Induced Midline Destructive Lesions (CIMDL) are defined as progressive, necrotizing lesions involving destruction of the nasal septum, hard palate, and other midline cartilaginous and bony facial structures. They are associated with chronic cocaine use and often clinically overlap with systemic vasculitis, such as GPA, complicating differential diagnosis.

It is estimated that fewer than 5% of chronic intranasal cocaine users develop clinically significant destructive lesions, although subclinical injuries such as septal perforation are more frequent. Septal perforations are considered initial manifestations and occur in approximately 4–7% of regular intranasal cocaine users (Weber et al., 2014; Westin et al., 2019).

Commonly Affected Structures:

- Nasal septum (perforation being the most common);
- Hard palate (oronasal fistula);
- Nasal vestibule and columellar base;
- Paranasal sinuses;
- Orbit;
- Skull base (in severe cases).

Image 1. Midline lesions involving the entire nasal cavity in one of the patients participating in this approach.

METHODS AND MATERIALS

Prospective clinical study involving 8 patients (5 males, 3 females; age range: 33–48 years old) diagnosed with CIMDL, treated at CEMA Hospital between 2023 and 2025.

Inclusion Criteria:

- Clinical and endoscopic diagnosis of CIMDL.
- No use of anticoagulants or antiplatelet agents.
- No history of coronary syndromes, stroke, or previous hemorrhages.
- No known allergy to pentoxifylline.

All patients underwent:

- Surgical debridement.
- Pentoxifylline 800 mg/day (400 mg twice daily), initiated 30 days prior to surgery and maintained for 90 days postoperatively, totaling 120 days of treatment.

RESULTS

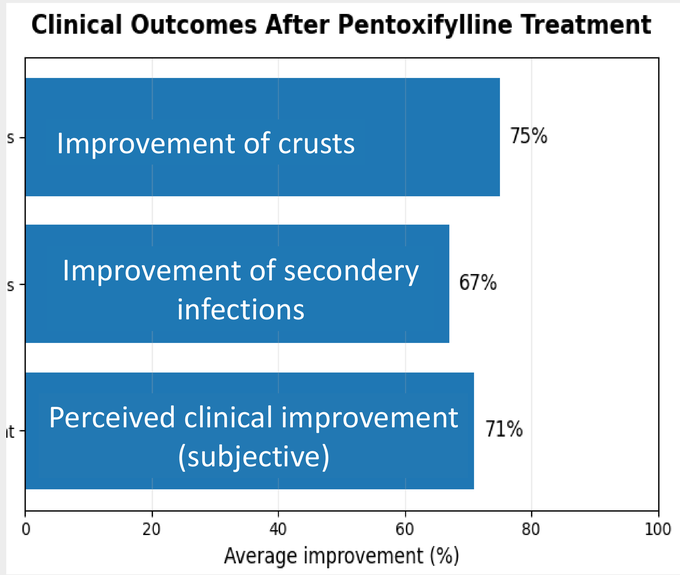

Image 2. Comparative graphs

Main improvements reported:

- Significant reduction of crusting.
- Decrease in secondary infections.
- Subjective improvement in nasal discomfort and pain.
- Improvement in appearance and halitosis.
- Good treatment adherence and absence of adverse effects.

DISCUSSION

Pentoxifylline is a methylxanthine derivative with anti-inflammatory, vasodilatory, and hemorheologic properties, already used in vascular ulcers, vasculitis, and ischemic conditions. Its use in CIMDL appears promising by reducing local inflammation and improving vascular perfusion.

The small sample size (n=8) in this study limits broader generalizations. Randomized and controlled clinical trials are needed to evaluate the impact of pentoxifylline on objective outcomes such as need for reinterventions, healing rates, and lesion recurrence.

CONCLUSIONS

The adjuvant use of pentoxifylline in the treatment of CIMDL demonstrated relevant clinical benefits, with good tolerance and improvement in patients' local symptoms. Larger clinical trials are necessary to validate therapeutic efficacy and to establish standardized treatment protocols.

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