

# Livedoid and Gangrenous Dermatitis (Nicolau Syndrome)

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Livedoid and gangrenous dermatitis is a rare posttherapeutic accident, produced by intravenous, intramuscular or intra-arterial drug injection under an oily or suspension form. It was first described by Stefan G. Nicolau in 1925 after injections of bismuth. The progression of the disease is favorable most cases are cured after 6–8 weeks. We present a clinical case of a patient aged 74 years.

**Keywords:** dermatitis, gangrene

## Introduction

Livedoid and gangrenous dermatitis is a rare posttherapeutic accident, produced by intravenous, intramuscular or intra-arterial drug injection under an oily or suspension form. In the first stage, artery and branches embolization occurs or there is wall irritation. In the second stage thrombosis or arterial spasms follow and acute ischemia syndrome of segmental skin occurs. The extent and severity of the lesions are closely related to the size of the affected artery. The first clinical case was described by Stefan G. Nicolau in 1925, after injections of bismuth [1].

## Case presentation

We report the case of a female patient aged 74 years. Because of her multiple morbid conditions that are irrelevant to this case, she had an intravenous catheter inserted into the forearm, which was used for daily treatments. At the administration of one of the recommended intravenous injections of 400 mg of cyprinol, the patient felt local pain with radiation to the upper limb. The pain was amplified in the hours following the injection and a red-purple reticular plaque appeared with a livedoid or mottled aspect. 24 hours after the injection, the typical clinical picture appeared: red-purple plaque, approximately 8 cm in diameter, with livedoid aspect, centrally necrotic, very painful, with well defined edges and geographic contours (Figure 1). Based on the patient's history and clinical appearance we diagnosed the livedoid and gangrenous dermatitis. We used symptomatic treatment, local antibiotics and epitelizants (Figure 2). The evolution was favorable, the lesion healed in about eight weeks.

## Discussions

The clinical signs began at the moment of the drug injection, and the pain then radiated throughout the affected limb. The ischemic type pain is permanent, with exacerbation at pressure and standing. Artery and branches embolization occurs or there is wall irritation. There follows

thrombosis or arterial spasm and the occurrence of acute ischemia syndrome of segmental skin. The location is mostly on the gluteal region where intramuscular injections are usually injected [2]. In cases where the artery was not thrombosed, lesions remain in livedoid stage for 6–10 days; then there begins their regression and resorption. If the artery is thrombosed, the livedoid aspect intensifies, the skin assumes a dark color and mortifies, forming a dry,



Fig. 1. Clinical aspect of the disease



Fig. 2. After 7 weeks of treatment

hard retractable eschar which arises after a few weeks [3]. In other cases, blisters can form and sanguinolent echymotic plaques appear, followed by ulceration of skin and tissues. Generally, healing of gangrenous form is obtained after several weeks. There have been described cases after penicillin deposit injections, and after injections of oxacillin, chloramphenicol, tetracycline, penicillin, crystalline phenylbutazone and their derivatives [4,5,6]. The only case published in Romania in the last 30 years was caused after injection of oxacillin and was reported by Oanță [7]. The progression of the disease is favorable, and most cases are cured after 6–8 weeks. The treatment is divided into two phases. The first stage concerns the first minutes after injection. These have to be made locally; the first large infiltrations of novocaine or lidocaine 1% are to remove arterial spasms and to dilute the injected substance [8]. When tissue necrosis are formed local treatment is needed and followed by their surgical removal. Antibiotics and epitheliazants can be used locally [9].

### Conclusions

Livedoid and gangrenous dermatitis or Nicolau syndrome is a rare posttherapeutic accident, produced by intrave-

nous, intramuscular or intra-arterial drug injection under an oily or suspension form. The progression of the disease is favorable, most cases are cured after 6–8 weeks without sequelae. To prevent this posttherapeutic accident it is necessary to respect the correct procedures for giving injections. We consider this case interesting for publish being the second case reported in Romania in the last three decades.

### References

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