

# Infectious cellulitis: report of a case in the little finger of the right hand

## Abstract

Pathologies associated with the hands are important from a clinical point of view, due to the functions they perform in the body. The objective of this article was the diagnosis and therapeutic procedure applied to a patient with infectious cellulitis in the little finger of the right hand. To do this, a macroscopic evaluation of the affected area was carried out, whose signs and symptoms were compatible with an advanced degree of infectious cellulitis. Parenteral antibiotic therapy was applied with oxacycline 1g, clindamycin 600mg and diclofenac 75g as an analgesic and anti-inflammatory. On the 4th day of hospitalization, a satisfactory evolution of the inflammation and associated secretions was observed, so the patient was discharged with treatment at home with ciprofloxacin 500mg and gentamicin 80mg/2ml until the lesion had completely healed. It is concluded that the diagnosis and treatment during hospitalization and discharge of the patient was effective, since the area healed completely without subsequent complications.

**Keywords:** cellulitis, skin, finger, infection, abscess

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## Introduction

Cellulitis is a cause of hospitalization in most cases, and its clinical picture is of great importance in medicine, since the etiology varies according to the circumstances and context in which the patient is located. However, what is known is that depending on the infected area, it can cause cellular damage to surrounding tissues, worsening the general condition of the person suffering from it.<sup>1,2</sup>

The dermatological manifestations of the lesions include moderate rashes, intense localized pain, and in advanced cases, purulent ulcers. The hands are one of the anatomical parts of the human body most exposed to various eventualities of daily activities, whether at home, work, among others.<sup>3</sup>

The present article aimed to recognize and/or clinically describe a case of acute cellulitis in the right little finger of a foreign patient in the public hospital of Tibú-Norte de Santander, Colombia.

## Methodology

A 40-year-old Venezuelan patient, who has been living in the municipality for 7 years, is presented at the emergency room of the public hospital in Tibú-Colombia. He reports intense pain in the little finger of his right hand, due to a visible severe inflammation above the proximal phalanx. The vital signs are normal, with no significant involvement.

At the time of the emergency consultation, he tells the doctor on duty that 6 days ago he began the process with a slight pain in the proximal phalanx, and that after 2 days, he noticed a small lump in the area with a hard consistency. He began treatment with 500 mg of amoxicillin every 8 hours for 5 days, which did not work, since the granule continued to grow exponentially, until forming a prominent mass of great consistency that was hard to the touch, with severe pain, almost unbearable, whose pathological characteristics corresponded to infectious cellulitis.

After the assessment of the injury and with the first treatment without favorable results with amoxicillin 500 mg every 8 hours for 7

days, the patient was admitted for hospitalization. This was justified by the fact that the injury was located in an area with little muscle tissue, such as the hand, so it was important to prevent the infection from invading the bone tissue of the finger.

The treatment indicated by the doctor was the following: Oxacillin 1gr every 6hrs, Clindamycin 600gr every 8hrs and Diclofenac 75mg every 8hrs. On the second day of hospitalization, a single dose of Dexamethasone 8mg was indicated to relieve the intense pain. All medications were administered parenterally.

## Results and discussion

The patient underwent a macroscopic evaluation of the injury to the little finger of the right hand, observing severe inflammation, redness and displacement of the edema to the upper part of the hand and wrist, for which a blood count was indicated to analyze values. Reference hematology.

Below are the results obtained in the patient's blood profile:

As seen in Table 1, the leukocyte counts are above 10,000 per cubic centimeter of blood, which demonstrates an infectious focus, which combined with the high neutrophil count at 71.4. Although manocytes are within the range, a value of 5.8% indicates important macrophagocytic activity, since, in patients without apparent infection, its value is close to 2%. These results indicate a significant bacterial infection. This is related to the obvious injury in the area of the proximal phalanx of the little finger on the right hand.

**Table 1** Blood count Day 1 hospitalization

Variables	Laboratory values	Results
Leukocytes	Until 10 e3/uL	11.93
Neutrophils	Until 65%	71.4
Lymphocytes	40%	20%
Monocytes	12%	5.8
Eosinophils	Until 7.30%	2.5
Basophils	Until 1.70%	0.3
Hemoglobin	Until 17.5 g/dl	13.9
Platelets	Until 450 e3/uL	13.9

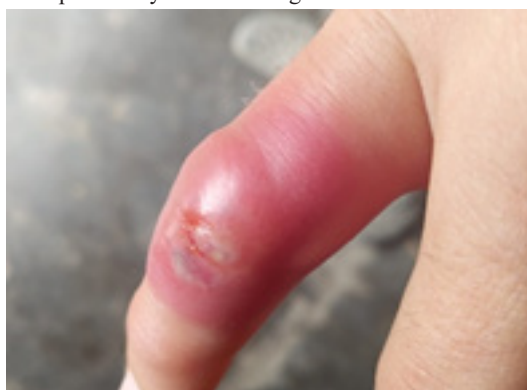
The findings of the following blood count correspond to the repetition for evaluation on the third day of hospitalization.

The blood values reflected in Table 2 indicate that the infectious focus is still present, taking into account that the patient had already been receiving parenteral oxacillin, clindamycin and diclofenac for two days. However, the percentage of monocytes decreased significantly, but the white cell count is still high (+0.45) compared to the previous examination. This led the ward doctor to leave the patient hospitalized for an additional 24 hours to continue receiving the antimicrobial medication described in the emergency room.

**Table 2** Blood count Day 3 hospitalization

Variables	Laboratory values	Results
Leukocytes	Until 10e3/uL	11.45
Neutrophils	Until 65%	87
Lymphocytes	40%	10
Monocytes	12%	2.5
Eosinophils	Until 7.30%	0.1
Basophils	Until 1.70%	0.0
Hemoglobin	Until 17.5 g/dl	14.7
Platelets	Until 450 e3/uL	223

In the following photographs taken of the patient with his consent, the clinical evolution of the infection during and after hospitalization is presented. Figures 1 - 4 show a local inflammation in the little finger, with erythema and accumulation of interstitial fluid. On day 2 of hospitalization, part of the dead upper skin was removed to expose the lesion, and in this way clean the area well through daily dressings under the responsibility of the nursing staff.



**Figure 1** Day 1 of hospitalization.



**Figure 2** Day 2 of hospitalization.



**Figure 3** Day 3 of hospitalization.



**Figure 4** Day 4 of hospitalization.

This procedure was performed until day 4, observing a slight decrease in inflammation in the ulcerated area.

Cellulitis is an acute infection located in soft tissue that occurs as a consequence of skin bacterial penetration, especially by germs of the genus *Streptococcus* sp., which have the ability to cross the skin's protective barrier (acid mantle), causing one or more very painful ulcers with tissue infiltrate, which results in hyperinflation of the affected area.<sup>4,5</sup>

The clinical manifestations reported in this case correspond to those mentioned by Ortiz et al.,<sup>6</sup> where the reticular dermis and hypodermis were noticeably affected. Likewise, the patient manifested a sensation of heat in the injured finger, with strong pain that radiated towards the metacarpals, wrist and part of the forearm.

On day 4 of hospitalization, the doctor on duty gave the order for the patient to be discharged, indicating medication at home, rest, and 7 treatments in the nursing room. The prescribed medications were: ciprofloxacin 500 mg, one tablet every 12 hours for 7 days and 5 intramuscular injections of gentamicin 80 mg/2 ml, one vial daily until the full dose was covered.

Figures 5-10 correspond to post-hospitalization follow-up in the nursing treatment room. A substantial improvement in the area is observed, as a result of correct medication and absolute rest, favoring a significant reduction in edema, pain and inflammation.



Figure 5 Cure 1.



Figure 9 Cure 5.



Figure 6 Cure 2.



Figure 10 Cure 6.



Figure 7 Cure 3.

Figures 11-16 are evidence of the clinical evolution at the patient's home. From day 1 at home, satisfactory healing of the injury is observed, and already on day 6 at home, almost total closure of the wound is perceived.



Figure 8 Cure 4.



Figure 11 Day 1 home care



Figure 12 Day 2 home care.



Figure 13 Day 3 home care.



Figure 14 Day 4 home care.



Figure 15 Day 5 home care.



Figure 16 Day 6 home care.

## Conclusion

After the medical procedure applied in hospitalization and together with the follow-up at the patient's home, it is concluded that the diagnosis and treatment during hospitalization and discharge of the patient was effective, since the area healed completely without subsequent complications. The patient only reports some difficulty in bending his finger inward, possibly due to temporary damage to the tendons caused by cellulitis.

## Acknowledgments

None.

## Conflicts of interest

The author declares that there is no conflicts of interest.

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