

## Phalangeal Osteomyelitis due to Nail Biting

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**The authors report a 39-year-old man who developed a phalangeal osteomyelitis of the right thumb in consequence of nail biting. Cultures grew *Staphylococcus aureus*. Treatment with intravenous teicoplanine 400 mg/day for 3 weeks resulted in complete cure of infection.**

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Osteomyelitis of the digits may result from a hematogeneous spread of infection or may be secondary to a trauma or a contiguous focus of infection (1).

Non-hematogeneous phalangeal osteomyelitis is uncommon and most commonly results from acute traumatic events such as fractures and puncture wounds. It has also occasionally been reported as a complication of nail biting (2), of compulsive nail rubbing and picking (3), as well as of severe atopic dermatitis with intense scratching of infected skin (4).

We report here a case of phalangeal osteomyelitis associated with severe nail biting in an adult patient.

### CASE REPORT

A 39-year-old gynaecologist consulted us in September 1992 because of a localized area of distal onycholysis of his right thumb. The history revealed that 1 month earlier the patient had experienced onycholysis associated with pain in the distal digit and that the pain had progressively worsened, preventing him from pursuing his profession. The patient's general health had always been excellent.

Clinical examination revealed severe dystrophy of all nails of both hands. The nailplates appeared extremely irregular and the exposed nail beds showed erythema, fissures and erosion. The right thumb showed distal onycholysis associated with a subungual black escharotic verrucous area (Fig. 1). Laboratory examinations revealed normal values except for a slightly elevated sedimentation rate (25 mm in 1 h). X-ray film of the right thumb showed a 1-cm large oval osteolytic area, with irregular and thinned lateral margins at the apex of the distal phalanx (Fig. 2). Surgical removal of the adherent hyperkeratotic eschar revealed a small sinus tract draining serosanguinolent material. Cultures from this fluid grew *Staphylococcus aureus* sensitive to teicoplanine (Targosid®). The patient was treated with intravenous teicoplanine 400 mg/day for 3 weeks.

In December 1992 the nail bed sinus was healing well and roentgenogram showed a significant reduction of the osteolytic area.

6 months later the 1st right fingernail was normal. Evidence of onychophagia was still present in all the other fingernails.

### DISCUSSION

Nail biting is an extremely common habit in childhood and

affects up to 60% of children. The reported occurrence in teenagers is 45% (5), but the incidence in adulthood is much less. When nail biting persists in adult life it is usually severe and associated with a poor prognosis.

Whether nail biting in adults should be categorized as a sign of a psychological or psychiatric disease is controversial (6). Although nail biting has been associated with psychotic personality, anxiety, obsessional symptoms, and aggressive needs, there is no evidence to suggest a relationship between this habit and an underlying mental disorder. The patterns of nail biting vary among patients and may involve one, many or all nails (7). Nail biting, which makes nails short and irregular, frequently induces secondary bacterial infections of periungual tissues.

Other possible complications of nail biting include longitudinal melanonychia due to matrix melanocyte stimulation (8), multiple periungual warts, apical root resorption (5) and nail pterygium. Although periungual infections commonly occur in nail biters, secondary bone infection has only been reported in one child who developed osteomyelitis as a complication of acute paronychia of the left 4th finger (2).

In our patient, however, osteomyelitis developed in the absence of any evidence of periungual inflammation, the primary site of infection probably being a nail bed wound due to onychophagia.

Non-hematogeneous osteomyelitis can occur in the absence of systemic signs of infection such as fever, leucocytosis and elevation of the erythrocyte sedimentation rate (4).

Even though our patient was a medical doctor, the absence of systemic symptoms delayed a correct diagnosis. Results of cultures and roentgenographic features permitted a diagnosis of bacterial osteomyelitis secondary to nailbed injury due to nail biting.



Fig. 1. Distal onycholysis of the right thumb. The nailplates of all other fingernails are short and irregular.



Fig. 2. X-ray shows a 1-cm large osteolytic area at the apex of the distal phalanx of the right thumb.

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