

PRISON HEALTH IN IMAGES

CLINICAL CASE

Text received: September 2009

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41-year old patient admitted in our center in June 2009. 10 months before he had suffered a gunshot wound in his right leg (with pellets and grapeshot ammunition) and had developed chronic metaphyseal osteomyelitis in his tibia.

He had undergone two surgeries in February and March 2009, with cleaning and bone grafting. Since then he was treated with antibiotic therapy of Amoxicillin and Clavulanic Acid with a dose of 875/125 three times a day.

Upon admittance he presents an area with absence of skin tissue of about 7 X 3 cm with the exposure of a bone fragment that protrudes about 1cm on top of the skin under his right knee (see Image 1).

Macroscopically a surface of compact bone around reticular spongy bone areas with irregular trabeculae corresponding to one of the two bone grafting procedures undergone is appreciated (see Images 2 and 3).

We initially kept the antibiotic therapy, disinfected the injury and established periodic occlusive dressings. He was also transferred to the traumatology unit of our reference hospital.

The report of that unit confirmed our performance and stated that "...definite treatment includes the coordination of a multidisciplinary team with experts on restorative and plastic surgery, traumatology and microsurgery. Yet many of these injuries lead to the amputation of the lower limb..." and they suggest transferring the patient to a center that will be able to provide such services. While all this process was taking place, at the beginning of September 2009, the patient is discharged.

Chronic osteomyelitis is an infection of the bone and is generally due to direct or exogenous contamination (through open or post surgery fractures). Acute hematogenous osteomyelitis can also develop into chronic if inappropriate or late treatment is undertaken.

The most common organism responsible for osteomyelitis is *Staphylococcus aureus*¹, although we are currently detecting an increase of other organisms such as Beta-hemolytic *Streptococcus* groups A and B, *Pseudomona aeruginosa*, *Proteus mirabilis* and *Escherichia coli* among others.

The symptoms of osteomyelitis are based on chronic suppuration and cyclic fistulization of the affected



Image 1.

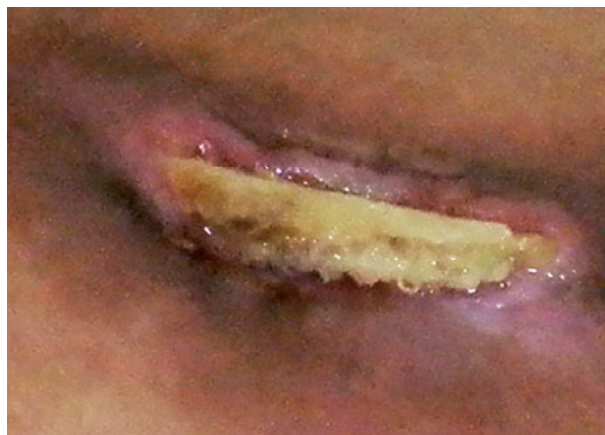


Image 2.

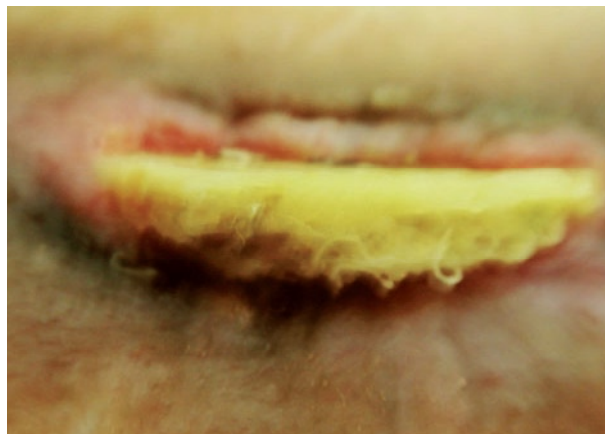


Image 3.

area, with symptoms during acute phases such as pain, localized warmth, erythema, swelling and a characteristic external appearance with deformity and bone swelling and trophic skin lesions.

Its influence on the general condition is usually limited.

The laboratory test shows leukocytosis, an increase in the erythrocyte sedimentation rate (ESR) and positive CRP at the beginning of the process. Diagnosis of osteomyelitis is based on image techniques – radiography, computed tomography (CT), fistulography, nuclear magnetic resonance (NMR) and gammagraphy with gallium.

The natural history of the disease is slow and chronic; it can lead to malignant degeneration of soft tissues (skin epidermoid carcinoma) or even to osteosarcoma of the affected bone area². Systemic amyloidosis is generally the most frequent complication. Amputation of the limb may be needed in between 2 and 15% of the cases.

The treatment of osteomyelitis involves appropriate antibiotic coverage and exposure surgery and debridement of necrotic tissue with osteolysis. Coadjuvant treatments include hyperbaric oxygen therapy³, electro-stimulation local drop antibiotic therapy with previous culturing and antibiogram of the secretion material, immobilization of the affected segment and the implantation of antibiotic impregnated microspheres in the bone⁴.

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