

OLAVIDE MUSEUM

## Dry Gangrene of the Foot

Piece prepared by: J Barta, Clínica Doctor Castelo  
(Olavide Museum Figure 487, Hospital San Juan de Dios, Ward 4, Bed 4)



**J Barta****Observation**

LFM, a 42-year-old man born in Entrimo (province of Oviedo), Spain, employed in the department of public works, of phlegmatic temperament and poor constitution, without a history of hereditary diseases. He reports that he had the childhood diseases, and at age 20 suffered a tertian-type malarial fever which was treated successfully with quinine sulfate. Subsequently, once cured of the previous condition, he had an episode of blennorrhoea that persisted for an unspecified period; once this was cured, an itching sensation remained in the left testicle. Later he suffered from a syphilitic chancre in the coronal sulcus of the penis. Once cured of this, he was admitted to this hospital with an abscess of the lumbar region which was drained and treated. He was subsequently admitted to Dr Olavide's clinic with syphilitic ulcers on his right leg. He left the clinic cured after Dr Olavide recommended the thermal baths of Archena, which he has visited periodically for 5 years. However, upon entering the bath this year, he felt an extremely sharp pain which had already been troubling him but was now localized on the sole of his foot. The foot and leg began to lose warmth and sensitivity at the same time as color, which turned waxen. In view of this, after consulting a physician, he left the thermal baths and returned home, where his right foot and leg began to be inflamed and took on a purple, almost blackish color, whereupon he was admitted to this hospital on June 28, 1882.

**Symptoms**

The patient is in supine or seated position, finding it too uncomfortable and even impossible to lie on his side. On the surface of the skin there is a series of scars resulting from syphilitic ulcers. Normal skin color has been replaced by a slightly jaundiced color and he is quite wasted as a result of his extreme weakness. His digestion is good and respiration and circulation are unaffected. Only the right leg and foot are swollen, black in color, lacking warmth and sensitivity, and do not function normally, signs which, of course, make his affliction all the more evident.

**Treatment**

Upon the patient's admission to the clinic, Dr Castelo applied potassium iodide for a considerable period; this produced significant relief as the patient gradually

regained sensation in the leg, but he developed ulcers extending the entire length of the tibia accompanied by intense pain. In view of this, the patient was given opium extract in pill form and treatment for his leg with bismuth subnitrate ointment. This simple and appropriate treatment caused the blackness to disappear from the leg and remain limited to the foot.

After a time, the surface of the earlier ulceration changed completely, the deep areas becoming septic and the soft tissue necrotic. The tissues around the joint were attacked by wet gangrene, and the lower portion of the anterior tibia was exposed and necrotic. Finally, such was the condition of this joint that, one afternoon when they went to treat the patient, the foot came off in the assistant's hands. In these circumstances an attempt was made to create the conditions necessary for the process of scar formation, treating the wound with pure alcohol, but this was impossible because of a subsequent considerable retraction of the tissues leaving the lower third of the tibia exposed, a circumstance which obliged us to consider amputating the leg.

After consultation with the patient to obtain his consent, the leg was amputated at the thigh rather than at the calf, as was originally contemplated, because it was feared that there was insufficient soft tissue to form a flap of skin as the leg in question was atrophied, and in the face of this uncertainty, it was decided to amputate at the thigh as the site of choice, using the circular method. Once the blood vessels were tied off and the sutures put in without incident, the patient was returned to his bed after Guereu's cotton-wadding dressing was applied. After 48 hours, his temperature rose considerably, his fever was very high, and the stump swelled, symptoms indicating one of the worst possible complications for surgical patients. He was given quinine sulfate and the stump was treated with pure alcohol because the suppuration was abundant and fetid. This treatment, though it lowered his temperature, did not prevent the formation of an abscess in the stump that required débridement and later the creation of a counter incision in the lateral upper thigh for the placement of a drainage tube so that the pus would not become stagnant and, decomposing during absorption, cause an aseptic fever that would have taken the patient's life. By these means the patient's fever was brought down, the suppuration diminished and the tissues dried up. Scar formation, however, was impossible because the stump took on the shape of a cone with the femur protruding some 4 cm from the soft tissue. In addition, the patient had a fistula extending from the highest point of the gluteal region through the exterior of the thigh right up to the edge of the stump. The patient remained in this condition for 4 months but it was impossible for him to continue

longer in this state because his strength was diminishing day by day, and for this reason a resection of the femur was performed. It was necessary to débride the soft tissues that had adhered to the bone; the blood vessels were tied off with great care since they had degenerated and the sutures were placed deep in the flesh so that the inflammation following the trauma would not cause them to tear out; Lister's dressing was then applied. The patient was returned to his bed without incident. His fever was very low and 3 days following surgery the dressing was removed. The stump was found to be in excellent condition; following the first cleaning of the surgical wound he experienced copious

bilious vomiting, which was controlled with lumps of ice and bismuth subnitrate. When the dressing was removed 6 days following surgery, scar formation was found to have taken place at the edges of the stump, and all that remained were the points of entry and exit of the drainage tube. Alcohol was injected into the tube and the Lister's dressing was substituted by lint soaked in alcohol and a cotton-wadding dressing. At 12 days, the ligature threads fell off, and following removal of the drainage tube this unusual and noteworthy patient continued to improve until completely cured, remaining in the clinic for purposes of observation.

## Commentary

The peculiarity of this figure is that it is not a wax model but actual organic remains. It consists of the entire foot amputated from the right leg of a patient suffering from gangrene. The specimen shows the dorsal part of the foot with the articular surface of the ankle bone exposed. The foot is practically black in color because of the severe ischemia the patient suffered.

The entire foot is visibly necrotic and had disarticulated spontaneously from the tibia and fibula. In all probability this was the result of an arterial embolism or endoarteritis, which fits well with the nature of the onset: the sharp pain and change in color recorded in the clinical history. The fourth and fifth toes are missing. They may have been

amputated previously, although there is no mention of this in the patient's clinical history.

It may be, although this is not entirely clear, that this is linked to tertiary syphilis. The description of the surgical amputation is very thorough. It is also strikingly contemporary, since the last paragraph begins with "after consultation with the patient to obtain his consent..." This shows that the informed consent procedure required by the current legal framework (*Ley General de Sanidad*) was already in use more than a century ago, demonstrating a patent respect for the patient's autonomy especially in the case of a surgical intervention as serious at that time—as it still is today—as the amputation of a limb.

**L Conde-Salazar, E del Río, R Díaz-Díaz,  
X Sierra, and F Heras**