

Syphilis Cases in Roman Lombardy

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Introduction

For a long time paleopathology, origin and epidemiology of syphilis have been the object of much controversy among scholars. One of the major hypotheses proposes that syphilis originated in the New World and was introduced in Europe by Columbus's crew in the 1490s. This is supported by historical accounts indicating the rapid spread of syphilis in the 15th century. In contrast, the "pre-Columbian hypothesis" asserts that treponemal disease was present in the Old World before the 1490s, already in Greek and Roman times. This theory has been confirmed by the finding of certain venereal syphilis in England dated before 1492 (Von Hunnius *et al.*, 2006). However, doubts about this case have been raised recently.

In fact a review of the reported cases of treponemal disease has been performed by Harper and co-workers (Harper *et al.*, 2011). The authors of this study assert that there is still no secure evidence of syphilis in the Old World before the 1490s because though many certain cases of treponemal disease were reviewed in their article, the dates remain problematic in all of them. We present 1 case that confirms the "pre-Columbian hypothesis" and 3 other probable syphilis cases.

Materials and Methods

The 4 cases analysed come from 2 archaeological sites of northern Italy: Milan (Catholic University) and Como (Via Benzi). Both necropolis date back between the 3rd and the 5th century. Dating was based on stratigraphy, grave goods

and other artefacts not associated with skeletal remains, coins and features of the graves (Niccoli, 2002; Sannazaro, 2011).

Macroscopic and microscopic standard analyses were performed for sexing (cranial and pelvic morphology, metrics), aging (dental and bone development; pubic symphysis, auricular surface) (Cattaneo *et al.*, 2004). Palaeopathological analysis was based on the macroscopic morphological study and radiological examination, keeping in mind that lesions highly suggestive of venereal syphilis are later stages of *caries sicca* and nodes with superficial cavitations on long bones. Skeletal evidence more specific for congenital syphilis are dental defects, such as Hutchinson's incisors. Other lesions consistent with treponemal disease are systemic periosteal reactions and sabre shins (Ortner, 2003; Harper *et al.*, 2011).

Results

Among the 4 cases presented only one showed strong evidence for treponemal disease, more precisely congenital syphilis (Milan Catholic University, US 5880) (Cattaneo *et al.*, 1996).

In 1 case signs observed are suggestive of venereal syphilis (Milan Catholic University, US 5290) and in 2 cases lesions are consistent with congenital syphilis (Milan Catholic University, US 2183; Como via Benzi T 17). Results, signs and their interpretation are shortly presented in Tab. 1.

Discussion

In most cases the skeletal signs are not specific to syphilis (see Tab. 1). However the finding of one certain syphilis case in Roman Lombardy is an important confirmation of

SITES NAME	DATING	SKELETAL REMAINS DESCRIPTION	DIAGNOSTIC SIGNS DESCRIPTION	DIAGNOSIS
Milan (Catholic University) T 2164 US 2183	4 th – beginning 5 th century	STATE: sparsely represented, highly degraded, AGE: perinatal	both femurs with periosteal reactions and cortical thickening (fig. 1), left ulna with bone deposition (fig. 1)	probable congenital syphilis

SITES NAME	DATING	SKELETAL REMAINS DESCRIPTION	DIAGNOSTIC SIGNS DESCRIPTION	DIAGNOSIS
Milan (Catholic University) T 5290 US 5290	beginning 3 th – 5 th century	STATE: well represented, well preserved, not fragmented SEX: female AGE: 30-40 years HEIGHT: about 150 cm	serious malformation of upper 1 st incisor (fig. 4), erosive lesions on the parietals and occipital bones (fig. 5)	probable venereal syphilis NOTE: a sample of a dorsal vertebra for biomolecular analyses to confirm or disprove the diagnosis is being assessed
Milan (Catholic University) T 5879 US 5880	beginning 3 th – 4 th century	STATE: partly represented, fragmented AGE: about 14 years	Hutchinson's incisors (fig. 2), tibial bowing (sabre shins) and cortical thickening (fig. 3)	congenital syphilis
Como (Via Benzi) T 17	second half 3 th – beginning 5 th century	STATE: well preserved AGE: about 3 months	tibial bowing (sabre shins) and cortical thickening (fig. 6)	probable congenital syphilis

Tab. 1. Summarizing table of results.

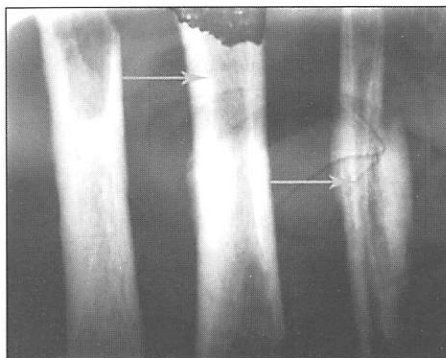


Fig. 1. Milan (Catholic University) T 2164 US 2183. Femurs and left ulna with cortical thickening.

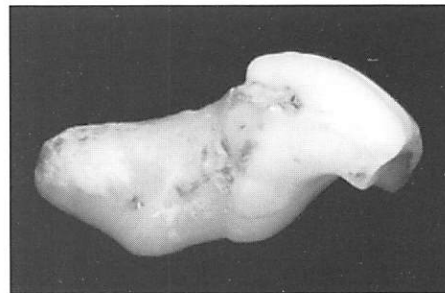


Fig. 4. Milan (Catholic University) T 5290 US 5290. Malformation of upper 1st incisor. Left side, medial view.

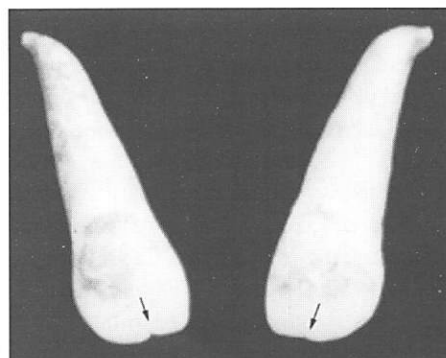


Fig. 2. Milan (Catholic University) T 5879 US 5880. Hutchinson's incisors.

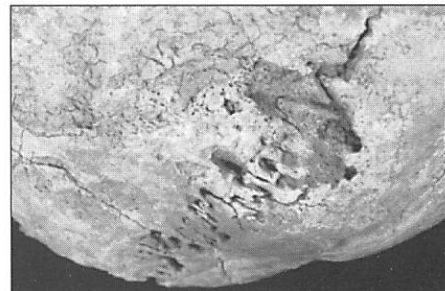


Fig. 5. Milan (Catholic University) T 5290 US 5290. Erosive lesions on the left parietal and occipital bones.

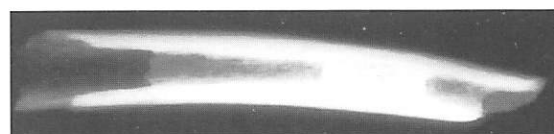


Fig. 3. Milan (Catholic University) T 5879 US 5880. Radiograph of the tibia showing cortical thickening and narrowing of the medullary cavity.

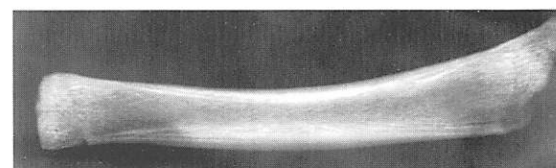


Fig. 6. Como (Via Benzi) T 17. Radiograph of the tibia showing cortical thickening and narrowing of the medullary cavity.

the “pre-Columbian hypothesis”. Moreover the presence of syphilis in Roman times also in Milan and Como has an important historical value for the repercussions that this disease could have had on the whole population. In fact syphilis is easily transmitted (sexually or transplacentally) and terminally it can cause serious neurological complications (Cattaneo *et al.*, 2001).

In addition to classical anthropological and paleopathological analyses, we propose to start biomolecular research to confirm or disprove the diagnosis and to study the evolutionary history of *Treponema pallidum* in depth.

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