The American Journal of Medicine (2007) 120, e1-e2

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THE AMERICAN JOURNAL *of* MEDICINE®

CLINICAL COMMUNICATION TO THE EDITOR

A Gold Dental Prosthesis of Roman Imperial Age

To the Editor:

A dental prosthesis, from a necropolis in Rome dating to the 1st-2nd century AD, provides the first evidence of skilled dentistry during the Imperial Age.

Although many Roman literary sources document the development of dentistry during the Imperial Age, A. Cornelium Celsum (25 BC-50 AD) first provided a systematic description of dental disease and their treatment in *De Medicina*. In this book, Celsum also indicates how to bind and sustain unstable teeth by using silk or gold wires: *"If for some blows or for other reasons some teeth are unsteady, they need to be bound with a gold wire to the solid teeth."* (De Medicina 7, XII)[1]

During archaeological excavations carried out in 2000 by the Soprintendenza Archeologica di Roma in the necropolis of Viale della Serenissima, the partially cremated remains of an adult woman, still wearing a dental prosthesis, were found (1st-2nd century AD).

Although fire caused the loss of or major damages to the crown of the teeth, the jaw was largely preserved from the third left molar to the second right premolar. Inspection of the material showed that mandibular anterior teeth were bound with a gold wire, forming a true dental prosthesis to replace the central incisors lost *intra vitam* (Figure). The gold wire supports an "artificial" tooth replacing the right central incisor. The left central incisor is not preserved, but is certainly "artificial," as suggested by the space apparent in the gold wire. The "artificial" right central incisor is perforated at the neck, in mesio-distal direction, and the root apex is filed to fit the tooth on the gum. Two gold wires pass trough the hole, firmly binding around canine and lateral incisor on the right side, and around lateral incisor on the left side. The "artificial" tooth is definitely human and the root canal is visible from X-rays as well as by stereomicroscope (25×), due to the deep lingual wear (Figure, c). The close resemblance in form, dimension, and wear to the left lateral incisor suggests that the "artificial" tooth belonged to the same woman and that it was re-used in the prosthesis after its loss. The deep wear on the lingual surface of this "artificial" incisor, similar to that observed on the other teeth, was certainly present before the loss. The reduction in tooth diameter, produced by the wear, made it more fragile and the making of the prosthesis more difficult.

Severe buccal wear that removed enamel, cementum, and part of dentine affects many in situ teeth. The wear extends from the crown to the root and makes the tooth surface concave and smooth. Very similar abrasions, found in King Christian III of Denmark (1503-1559)[2] and Isabella d'Aragona, Duchess of Milano (1470-1524),[3] have been attributed to rubbing of dental surfaces with abrasive powder during hygienic activity.

It seems very likely that, in the case under study, the dental rubbing was performed for hygienic or palliative reasons, as suggested by the marked alveolar bone resorption indicative of severe periodontal disease. This disease was probably responsible for the central incisor's loss.

Although Etruscan gold prostheses (VI-IV centuries BC) are relatively numerous,[4] none dating to the Roman Age has yet been published. Thus, the finding presented here provides the first archeological evidence of dentistry in that time period and documents a diffuse practice mentioned in different literary sources, not necessarily medical. For example, the famous 1st century satirist Martial frequently likes to joke in his writings on dental appliances: *"Lucania has white teeth, Thais brown. How comes it? One has false teeth, one her own. And you Galla, lay aside your teeth at night just as you do your silken dress."*[4]

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doi:10.1016/j.amjmed.2006.05.062

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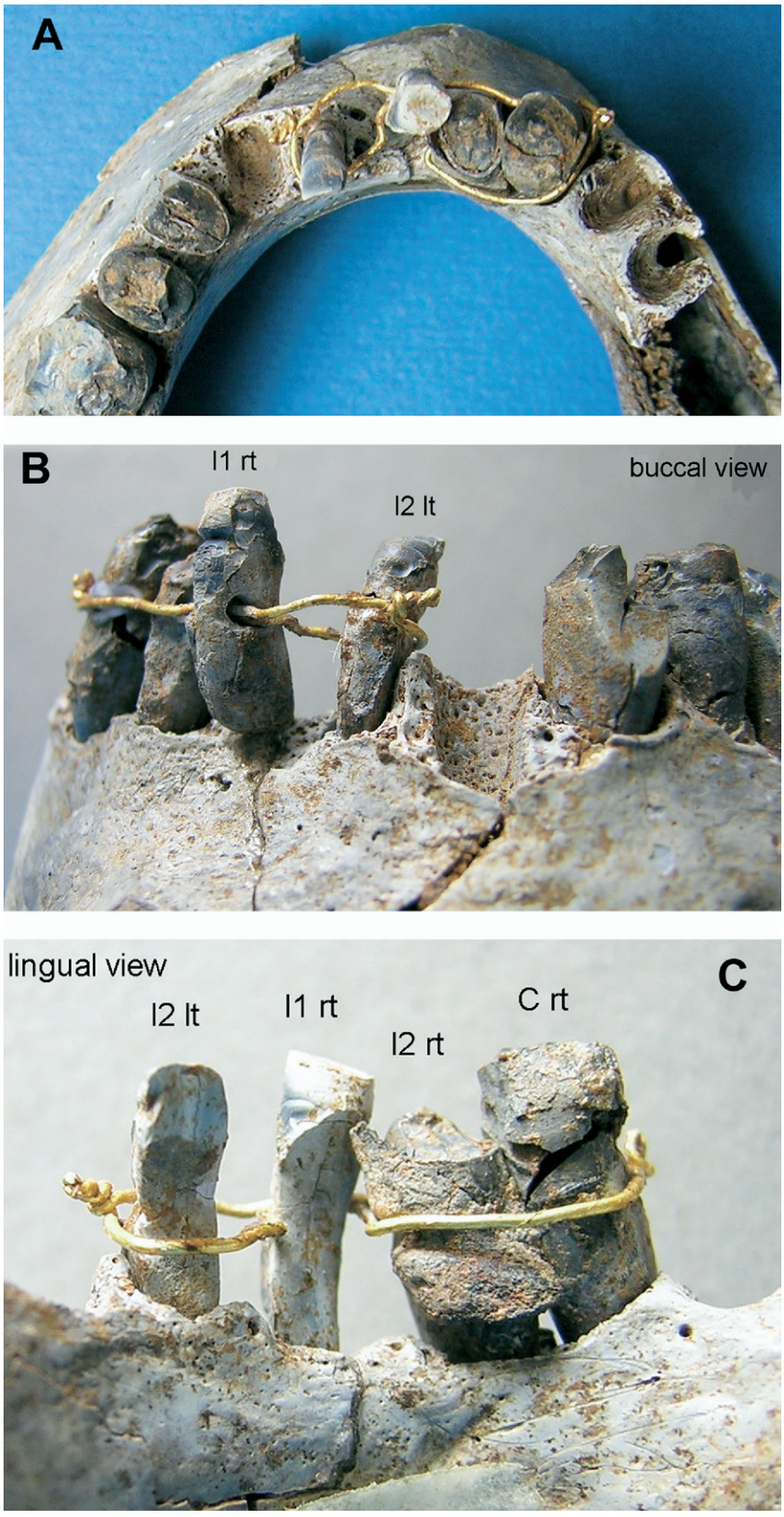

Figure The gold dental prosthesis. (**A**) Occlusal view of the partially burned jaw with the gold wire bounding the anterior teeth. (**B**) Lateral view (buccal side) of the prosthesis showing perforation at the neck of the right central incisor (I1 right) and the peculiar abrasion of the buccal surface of the left first premolar. (**C**) Lingual view of the prosthesis showing the similar and strong wear of the "artificial" incisor (I1 right) and the left lateral incisor (I2 left); the root canal is visible.