### 2.4 A Recently Discovered Etruscan Dental Bridgework

*Maria Teschler-Nicola, Michaela Kneissel, Franz Brandstätter, and Hermann Prossinger*

#### Introduction

Human skeletal remains from the distant past are not only biological source material – being particularly relevant in the absence of historic documents – but also documents of cultural and medical importance. Therapeutic attempts, such as the care of bone injuries or the restauration of teeth or jaws, can be documented even for epochs in which written documents do not exist. Early authentic archeological finds of tooth prostheses are extraordinarily rare.

Except for two tooth replacements and/or fastening mechanisms from ancient Egypt (Junker 1929, Harris and Iskander 1975, Hoffmann-Axthelm 1985, Alt 1994, Puech 1995) – the interpretation of their primary implementation remaining controversial –, the only genuine dental work that can be documented stems from historic antiquity (Asbell 1948, Jackson 1988, Walter 1989). Among such works, those of the Etruscans must be considered exceptionally good. Nearly twenty finds of tooth replacements and examples of parodontal bridgework (now kept in various museums; see Waarsenburg (1991) and Becker (1994)) certify the high technical expertise of their makers. They show various technical styles, the most common being the use of a gold band in order to hold loose teeth or – in the case of dental loss – a tooth replacement; other, more sophisticated ones were made from small separate gold loops.

The exceptional rarity of such early dental work is the reason why we here present an isolated dental bridgework found a few years ago in an Etruscan tomb near Lake Bracciano, north of Rome, and now stored in the Department of Anthropology, Natural History Museum, Vienna. Waarsenburg (1991) bemoans the problems resulting from the “non-accounted and usually fictive dating of dental specimens” presented in the literature. In the case of this “Bracciano bridge” we have incomplete information as to the arrangement of the grave goods in the tomb. However, some accompanying archeological artefacts have been preserved (now in the Department of Prehistory, Natural History Museum, Vienna), which
enable us to date this bridgework between 700–600 BC. These same artefacts also indicate that the wearer was female, probably from a higher social class.

In order to elucidate the in situ circumstances, the origin of the tooth replacement, the functionality of the implementation, the metal used, as well as the construction technique employed by the ancient goldsmith, we used a variety of methods; we investigated the artefact macroscopically, radiologically and with both light and scanning electron microscopes.

**Tooth Features**

This Etruscan dental bridgework consists of three frontal teeth of the upper jaw (right lateral, right central and left central incisor) and an approximately 4 mm broad band of gold, which is riveted to the right medial incisor and surrounds the adjacent teeth (Figs. 1–4).

The tooth crowns of the outer teeth (teeth 12 and 21) are completely preserved, including the neck regions, while the major parts of the roots have deteriorated. The horizontally and transversally orientated root-fractures must be recent fracture lines, as there are no smoothing effects due to influences incurred during extended post-mortem deposition. These fractures could be a consequence of the postmortual removal of the dental device, which possibly occurred during the excavation by an amateur. On both teeth, a moderate shoveling is evident. In the case of the left central incisor this feature is accompanied by the presence of a lingual tuberosity.

By contrast, the right central incisor shows a different degree of preservation: This tooth consists of the crown and a small root remnant. Based on macroscopic, light and scanning electron microscope investigations, all parts seem to have been