

# Tooth wear and extra-masticatory behaviour:

## a particular case of a fisherman from the Identified Skeletal Collections of the University of Coimbra

Sofia N. WASTERLAIN

CIAS - Centro de Investigação em Antropologia e Saúde, Department of Life Sciences, University of Coimbra, Portugal

### Introduction

The unusual dental wear in the anterior dentition of an individual belonging to the collection of identified skulls "Escolas Médicas" (19<sup>th</sup>-20<sup>th</sup> centuries) from the University of Coimbra is described. The possible scenarios that led to such alterations will be discussed, considering also the known profession (fisherman) of the individual.

### Material and Methods

The analysed skull belongs to a 75 year-old male from Lavos (Figueira da Foz) (Figure 1). All teeth (n=20) were examined macroscopically under good lighting conditions, and the tooth wear registered according to Smith (1984). The differentiation between deliberate tooth modification and that caused by a wide variety of extra-masticatory functions or accidents was done by careful observation of the pattern and location of modifications, the symmetry of teeth affected and attending to the general frequency in the population (Blakely and Beck, 1984; Domett et al., 2013). The tooth nomenclature of the "Fédération Dentaire Internationale" was adopted.

### Results

Ten teeth (48, 46, 45, 36, 38, 18, 24, 25, 27, and 28) were lost ante-mortem. Only two teeth (13 and 22) were lost post-mortem. Of the remaining teeth, two (17 and 23) were affected by gross carious lesions. Tooth wear was more severe in the anterior ( $6.78 \pm 0.667$ ) than in the posterior teeth ( $4.78 \pm 0.833$ ). The upper central incisors had symmetrical and strongly oblique wear facets (Figure 2), exposing secondary dentine in the lingual surfaces (Figure 3). These ascended from the mesial margin to the incisal edge, forming an inverted V. The lower anterior teeth were severely worn, but more evenly.

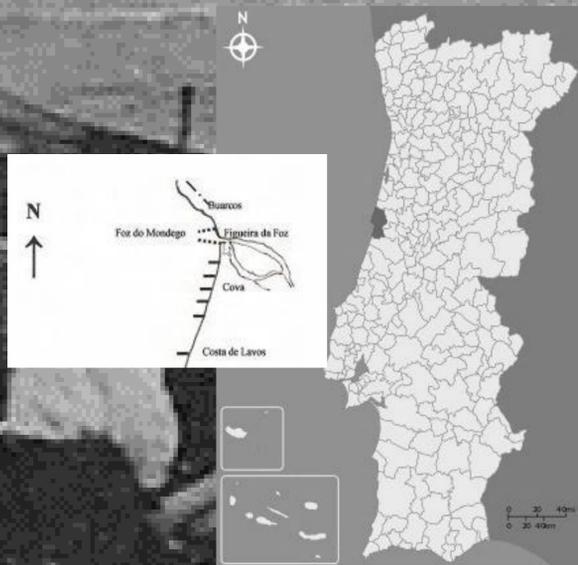


Figure 1 – Location of Costa de Lavos in Portugal.



Figure 2 – Frontal view of the anterior dentition of the individual no. 456 from the "Medical Schools" Osteological Identified Collection. Notice the symmetrical and strongly oblique wear facets ascending from the mesial margin to the incisal edge, forming an inverted V.



Figure 3 – Inferior view of the upper anterior teeth of the individual no. 456 from the "Medical Schools" Osteological Identified Collection. Notice the secondary dentine in the lingual surfaces of both upper central incisors.

### Discussion and conclusions

The pattern and frequency of dental caries and ante-mortem tooth loss are consistent with an elder man. However, the fact that anterior teeth are more worn than posterior ones is unusual. Regarding the dental wear in the upper central incisors, the diet (foods consumed and its preparation) and any therapeutic attempts were excluded as possible causes based on the location and symmetry of the lesions. The intentional modification of teeth for aesthetic or cultural reasons was also considered unlikely since the pattern of wear is quite distinct: the facet is softer and less delimited, involving a considerable part of the lingual surface of the teeth. Task-related activities tend to affect the occlusal or approximal surfaces of teeth, whereas intentional modifications are usually performed on crown edges or labial surfaces (Blakely and Beck, 1984; Domett et al., 2013). Besides, there isn't any historical reference to such practice in the Central region of Portugal at that time. According to the "Escolas Médicas" collection's files this individual was a fisherman. A brief ethnographic research revealed that in the past some fishermen used their teeth to hold the lines when sewing the fishing nets. Therefore, it is possible that this man used his teeth as a 'third hand' during the practice of mending fishing nets. In fact, according to Comma (1999), some fishermen used to hold the sewing lines between their teeth, causing damages that can be unilateral or bilateral depending on the centre of tension. This is in accordance to the postulated by Lukacs and Pastor (1988), that incisor and canine teeth frequently serve dual purposes of food processing and manipulation. This study corroborates the value of dental records in reconstructing the habits of occupational, personal or cultural nature from skeletal remains, which is of major importance in bioarchaeological and forensic studies.

#### References

- Blakely RL, Beck L. 1984. Tooth-tool use versus dental mutilation: a case study from the prehistoric Southeast. *Midcontinental Journal of Archaeology* 9: 269-277.
- Comma JMR. 1999. *Antropologia Forense*. Madrid: Ministerio de Justicia.
- Domett KM, Newton J, O'Reilly DJW, Tayles N, Shewan L, Beavan N. 2013. Cultural modification of the dentition in prehistoric Cambodia. *Int J Osteoarchaeol* 23: 274-286.
- Lukacs JR, Pastor RF. 1988. Activity-induced patterns of dental abrasion in prehistoric Pakistan: evidence from Mehrgarh and Harappa. *Am J Phys Anthropol* 76: 377-398.
- Smith BH. 1984. Patterns of molar wear in hunter-gatherers and agriculturalists. *Am J Phys Anthropol* 63: 39-56.