3RD ANNUAL MEETING OF THE

European Society for the study of Human Evolution

19–21 SEPTEMBER 2013
VIENNA / AUSTRIA
Unique within his group: High incidence of chipping enamel may reflect a specialized behavior in the El Sidrón prehistoric group

Almudena Estalrrich1, Antonia Rosas1, Rosa Huguet2, Marco de la Rasilla3

1 - Paleoanthropology Group. Department of Paleobiology. Museo Nacional de Ciencias Naturales-CSIC, Spain - 2 - Institut Català de Paleoecologia Humana i Evolució Social (IPHES) Unidad Asociada al CSIC, Área de Prehistoria, Universitat Rovira i Virgili, Spain - 3 - Área de Prehistoria Departamento de Historia Universidad de Oviedo, Spain

Chippings are irregular \textit{ante mortem} fractures affecting the enamel or both the enamel and dentin, produced due to shock or pressure produced as a result of the use of teeth as tools or due to hard particles ingested with the food. The location of this feature in the dental crown serves to distinguish between the two etiologies, considering those in the occlusal surface of the tooth and in the posterior dentition more likely related to chewing tasks, and those that are on the incisal edge on the anterior dentition as related with non-masticatory activities (Gould, 1968; Molnar, 1972; Belcastro et al., 2004; Scott and Winn, 2011; among others).

In this study we examine the distribution of chippings on the anterior dentition of eleven Neandertals from El Sidrón cave (Rosas et al., 2012), focusing on the number of chipped teeth per individual as well as its number and location on the tooth. Chipping enamel size has been recorded following the 1 to 3-stage scale proposed by Belcastro et al., (2004). When there is no chipping enamel it is recorded as “0” and when it was not possible to record, due to the presence of dental calculus or calculus, it was recorded as “9”. We also located record of the affected areas (mesial, distal, distolingual...). As for the El Sidrón sample all individuals are affected, and about one third of the anterior teeth show chippings with a slightly higher frequency in the maxillary dentition. Chipping appears on the incisal edge of teeth, principally on the labial side, but also it has been found on the mesial and distal sides of the incisal edge. Only El Sidrón Adult 2 has a high incidence of this trait, affecting all the incisal edge of his maxillary anterior teeth (more than three chippings have been recorded on the same tooth), forming an indentation or notching. On the contrary, on his mandibular teeth, the presence of chipping is scarce. Chippings are at stages 1 and 2 (small, affecting only the dental enamel) on the whole anterior dentition. The distribution of this non-masticatory dental wear in this individual seems to be analogous to that described for primitive populations of Australian Aborigines (Gould, 1968), who used their teeth to correct or reshaper the stone tool cutting edge. It is possible that the origin of these marks on the Neandertal population from El Sidrón has a similar etiology, and among the group, El Sidrón Adult 2 seems to have developed a distinctive behaviour when comparing with his group members.

The pattern of distribution of this trait together with the presence of bitumen in the dental calculus of Adult 2 (Hardy et al., 2012), suggests a task’s specialization in this Neandertal group and thus a particular partitioning of labor in this fossil species.

Acknowledgements: This work was supported by Consejería de Cultura del Principado de Asturias, Grant sponsor: Convenio Universidad de Oviedo-CSIC, Grant number: 060501040023. Paleobiological aspects of this study have been funding by MINECO of Spain, Grant number: CGL2012-36682.