
Ontogenetic dental patterns in hyenas (*Crocuta crocuta* Erxleben, 1777) and their palaeobiological implications

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Résumé

Hyenas were one of the main agents of bone accumulation and modification during the Pleistocene. During this epoch, humans and hyenas co-occurred at sites that included cavities and rock-shelters, generating a mix of bones accumulated both by humans and carnivores. Research in this field has given rise to much debate about the relationship between hominids and carnivores during the Pleistocene so that interpreting the nature of the different biological activities conducted may constitute a useful approach to understanding predator behaviour and to reconstructing the palaeobiology.

Dentition analysis is a powerful technique applied in zooarchaeological studies to interpret the use of shared spaces, including hibernation and carnivore dens, refuges and short-term shelters. In Pleistocene sites, isolated hyena teeth are the most common elements. However, in the Terrasses de la Riera dels Canyars (Gavà, Barcelona, NE Iberian Peninsula), a fluvial deposit dated at 39.6 ka cal BP (Heinrich Stadial 4) with a considerable record of large mammals and a few lithic tools (Aurignacian), cranial and postcranial hyena bones are uncommonly well preserved with all the ontogenetic stages represented. Based on an analysis of dental ontogeny and tooth replacement, using X-ray combined with tooth wear of the assemblage, we propose five age clusters for the hyena juveniles based on complete (or nearly complete) mandibles and maxillae. Previous studies of hyena ontogenesis have suggested the existence of just two to three juvenile categories.

Using these five, more detailed, age clusters for hyena juveniles, the Minimum Number of Individuals (MNI) increases. Moreover, the method applied to isolated teeth at the site validates its feasibility, as they can be attributed to one of these five specific categories based on dental wear.

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Finally, the mortality pattern observed in Canyars indicates that the site was used mainly by hyenas as a den. The pattern of five age clusters proposed for this assemblage might usefully be applied to isolated teeth recovered at other Pleistocene sites. In short, the method has the advantages of providing more accurate results, increasing the MNI and, so, offering a better interpretation of the role played by biological agents in the past.

Mots-Clés: Juvenile, dental replacement, wear pattern, X, ray imaging techniques, Hyaenidae, Late Pleistocene.