A morphological and morphometric dental analysis as a forensic tool to identify the iberian wolf (Canis lupus signatus)

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Depredation by the Iberian wolf (Canis lupus signatus) is currently thought to be a problem in some areas of Spain. However, there are few technically validated forensic tools available to determine the veracity of claims with a high degree of scientific confidence, which is important given that such attacks may lead to compensation. The analysis of bite marks on attacked animals could provide scientific evidence to help identify the offender. Thus, the aim of this study was to assess the morphological and morphometric characteristics of Iberian wolf dentition. This data collection would serve as a base-point for a more accurate identification of the wolves thorough their bite marks. For the first time, 36 dental variables have been studied in wolves? skulls, employing univariate and multivariate analyses. The general morphological dental characteristics of wolves are very similar in terms of their dental formula and tooth structure to other canids, like domestic dogs. Sex differentiation was evident, principally in terms of the maxillary distance between the palatal surfaces of the canine teeth (UbC) and the width of the left mandibular canine teeth (LlCWd). New morphometric reference information was obtained that can aid the forensic identification of bite marks caused by the Iberian wolf with greater confidence. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Analysis

Bite marks

Dentistry

Forensics

Iberian wolf

Veterinary

Article

canine tooth

Canis lupus

criminalistics

dental procedure

female

first premolar

incisor

intercanine width

male

mandible

maxilla sinusitis

nonhuman

olfactory tubercle

sex differentiation

third molar

tooth arch