

## PERFORATIONS IN ARCHAEOLOGICAL NEOLITHIC CATTLE SKULLS: A NEW METHODOLOGICAL APPROXIMATION FOR THEIR STUDY AND EXPLANATION

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**Abstract.** We describe and discuss in this paper new data obtained from the study of the perforations in four cattle skulls recovered in the early Neolithic site of “la Draga” (north-east Iberian Peninsula), dated around 5300-5100 cal BC. All the perforations are located in the posterior region of the skulls, behind the frontal and nuchal eminences, and consist of rounded holes, elliptical in shape and of various sizes. The observed frequency of occurrence is also variable, with only one cattle skull showing multiple perforations. The rounded margins are indicative of the condition being present during the life of the animal. A detailed examination of these specimens was carried out using computed tomography (CT). This technique provides particularly good bone tissue detail, generating cross-sectional images and three-dimensional reconstructions. The CT study allowed the assessment of normal anatomy and bone tissue status around the previously identified perforations to suggest the presumptive diagnosis. We discuss also the available archaeological evidence and the hypothetical explanations concerning the possible causes of the phenomenon (genetic or congenital origin, parasites, tumours, infections, external physical influences due to yokes use during ploughing) according to the status of the animals (wild and domestic), evaluating their possibilities and limitations in order to exclude or test each hypothesis, and advance our understanding in this research subject.

**Key words:** Neolithic, la Draga, Archaeozoology, cattle skulls, cranial perforation, computed tomography.