Palimpsest dissection in Early Holocene open-air sites through lithic refits and intra-site spatial analysis. The Arenal de la Virgen (Villena, Spain) study case.

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Abstract

Open-air postglacial sites very often present complex, time-averaged archaeological deposits, affected by different kinds of post-depositonal processes forming occupational palimpsests. In this context, the identification of occupational episodes requires the reconstruction of the formation history through the application of extensive multidisciplinary research programs. In this paper we present an integrated research program aimed at reconstructing the site formation process and disentangle the occupational palimpsest at the Mesolithic site of Arenal de la Virgen (Villena, Alicante, SE Iberian Peninsula). This open-air site was subject to new fieldwork in 2017, in the context of the ERC project PALEODEM (ERC-CoG-2015 ref. 683018). An area of 84 m2 was intensively excavated using a high-resolution spatial and archaeological data recording strategy, allowing the identification of lithic scatters and several occupational features (hearth-pits, surface hearths, and possible dwelling structures). Here, we will focus on the results of the lithic refits and the spatial analysis of lithic remains from the Unit IV, in order to identify occupational phases and events. At first sight, the archaeostratigraphic analysis of the occupational horizon did not allow the identification vertically differentiated occupation events, showing a uniform layer with variable thickness and density of remains. The spatial point pattern analysis of the horizontal distribution of lithic remains was performed through multi-scale methods, the calculation of aggregation indexes, the production of Kernel Density Maps, and the analysis of spatial autocorrelation of different artifact classes. High-density concentrations of lithics, spatially correlated to the occupational features, allowed to distinguish different activity areas. The analysis of lithic refits has corroborated both the integrity of the assemblage, with the predominance of short-distance connections, and the spatial structuring of the space on discrete and sometimes connected activity areas. The results in combination with a Bayesian Chronological Model based on a comprehensive radiocarbon dating program on the occupational features, revealed the presence of two different Mesolithic phases.

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Keywords: Open air site, formation processess, palimpsest dissection, lithic refits, intrasite spatial analysis