HOMO - Journal of Comparative Human Biology xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

HOMO - Journal of Comparative Human Biology

journal homepage: www.elsevier.com/locate/jchb

An accident at work? Traumatic lesions in the skeleton of a 4th millennium BCE "wagon driver" from Sharakhalsun, Russia

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ARTICLE INFO

Keywords:
Fractures
Interpersonal violence
Activity
Entheseal changes
Bronze Age
Caucasus

ABSTRACT

The study of ante-mortem trauma is a popular and important aspect of palaeopathological analysis. The majority of publications focus on a particular assemblage, skeletal element or type of fracture, with case studies of single individuals with multiple/unusual traumata being much rarer in the literature. This paper presents the case of an adult male from the Bronze Age site of Sharakhalsun, Russia, buried, uniquely, in a sitting position on a fully assembled wagon, who displayed evidence for multiple healed ante-mortem fractures of the cranium, axial and appendicular skeleton. The mechanisms and likely etiologies of the fractures are presented, with reference to modern and 19th century clinical literature, and possible interpretations suggested: that the individual was involved in a severe accident involving a wagon or draft animals, or both, a number of years before his death. The suggestion is also made that the unique burial position of the individual was a form of commemoration by the community of the survival and recovery of the individual from such a serious incident.

Introduction

Ante-mortem fractures are commonly described in the palaeopathological literature. Typically, such studies focus on single populations (Gilmour et al., 2015; Glencross and Agarwal, 2011; Judd and Roberts, 1998, 1999), a wider geographic and/or temporal spread (Burrell et al., 1986; Djurić et al., 2006; Šlaus et al., 2012), the particular skeletal element affected (Blondiaux et al., 2012; Brickley, 2006; Curate et al., 2011; Darton, 2010), or a specific type of fracture (Jordana et al., 2006; Judd, 2008; Mays, 2006). Less frequent are publications focusing on individual skeletons with unusual fracture patterns, or multiple fractures (Anderson, 2002; Boccone et al., 2011; Gresky et al., 2013; Palfi et al., 1993; Wakely, 1996), as such individuals are relatively rare in the archaeological record. However, such case studies can provide great insights into the assaults that daily life can inflict on individuals in past societies. They also have the potential, when the specific type and pattern of fractures is examined in detail, to allow the possible nature of these assaults to be determined and interpreted in relation to particular lifestyle patterns.

This paper presents an example of this type of approach, in examining the multiple fractures sustained by an adult male living in the Bronze Age Caucasus, in the light of modern and nineteenth century clinical cases. When used together in combination with the archaeological evidence for environmental and subsistence patterns in the region during the 4th millennium BC, a few possible scenarios are presented to account for the patterning of trauma, which may suggest that the individual had suffered a severe accident "at work" a number of months, and probably years, before his death.

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http://dx.doi.org/10.1016/j.jchb.2017.05.004
Received 23 November 2016; Accepted 8 May 2017

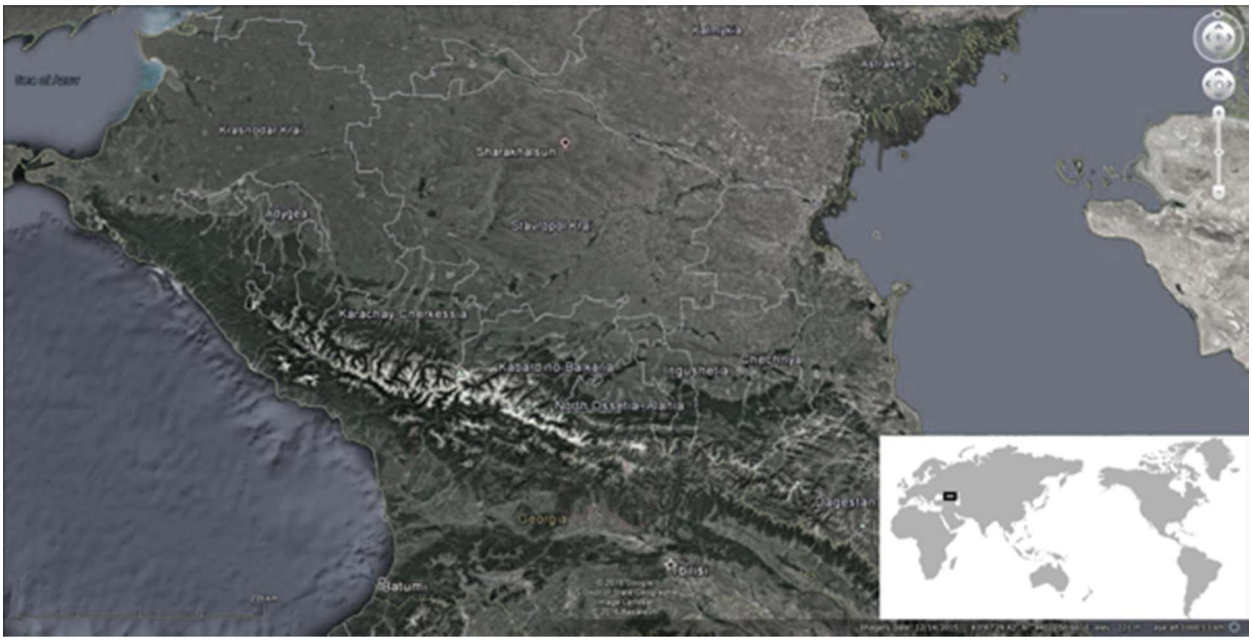

Fig. 1. Location map of the site of Sharakhalsun in the Northern Caucasus.

Archaeological background

The cemetery site of Sharakhalsun 2 is located approximately 160 km east of Stavropol in the north Caucasus region of Russia (Fig. 1). It comprises a linear alignment of mounds situated on the right side of the river Kalaus near the Manych water reserve. This area was a focus of burial activity from the late 5th millennium BCE onwards, and is dotted with tens of thousands of mounds.

Burial mound 6 was 50 m in diameter and 3 m high and was initially constructed by communities of the Steppe Maikop culture in the late 4th millennium BCE (Yakovlev and Samoylenko, 2008). During the third millennium, the mound was reused by groups from the Yamnaya community, who added several graves to the centre (graves 4, 5, 16) and periphery of the mound (grave 3). Several construction layers of the mound embankment can be attributed to these Yamnaya communities.

The most intriguing aspect of mound 6 was the discovery of four burials with wagons or wagon parts. The oldest is grave 18, which was a narrow, deep catacomb-like shaft dug from the side into the existing mound. At the bottom of the shaft the skeleton of an adult male was discovered, buried in a sitting position on a four-wheeled wagon (Fig. 2). Most wooden parts of the wagon were poorly preserved but it is obvious that they comprised a complete, assembled wagon that was squeezed into the burial chamber. No other grave inclusions were found. Due to the constant remodelling of the mound when new burials were added, the actual stratigraphic relationship to the central Yamnaya graves is unclear but wooden parts of the wagon have been radiocarbon dated to 4500 ± 40 BP (3356-3033 cal BCE, at 95.4%, OxCal 4.2.4; Bronk Ramsey, 2009), which links the grave to the early Yamnaya culture and specifically to a group that are in between the Maikop and Yamnaya.

Two other Yamnaya graves of adult males from the same mound (grave 4 in the centre, and grave 3 on the periphery) also contained wagons, although both were dismantled. In these cases, the wheels had been placed into the corners of the grave pit, covered by the wagon box. The latest grave with a wagon (grave 9, dated to the East Manych Catacomb Culture) contained only half of a four-wheeled vehicle squeezed into the entrance shaft of its catacomb.

Wagon burials are a well-known phenomenon in the Northwest and North Caucasian steppe zone and beyond. The dating of their archaeological contexts associates such graves with the Novotitarovskaya, Yamnaya and Catacomb Cultures (Gei, 2000; Häusler, 1982; Kaiser, 2007; Shishlina et al., 2013). There is a great variation in this type of burial, with some wagons being found intact and assembled within graves, wagons with dismantled wheels being found below burials, or wagon boxes being used as the grave ceiling. Assembled or dismantled wagons have also been found in specific chambers beside the burial pits (Belinskiy and Kalmykov, 2004; Gei, 2000; Häusler, 1982; Limberis and Marchenko, 2002).

Successive wagon burials within the same mound are likewise relatively common elsewhere (Gei, 2000) and other graves with wagons have been found at a number of sites in the vicinity of Sharakhalsun 6, such as the neighbouring necropolis of Sharakhalsun 5, the cemeteries of Damba Kalaus 1 and 2, and a number of sites near the modern town of Elista (Belinskiy and Kalmykov, 2004; Mansfeld, 2013). However, in the cemetery areas of Sharakhalsun itself, out of 48 excavated mounds, only two contained burials with the remains of wagons.

Not only is grave 18 the oldest wagon burial in mound 6 at Sharakhalsun but the position of the individual is unique. Out of the approximately 280 wagon burials so far known from the Urals to the lower Danube (Kaiser, 2007), it is the only one where the associated individual was buried sitting on the wagon, in contrast to the typical supine burial position underneath the wagon box.