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Short fieldwork report

Human remains from Sari Gol, Iran, 2018

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Sari Gol cemetery (38°11'23"N, 56°36'59"E) is located 900m southeast of Dolan village in North Khorasan province, Iran (**Figure 1**). The Jargalan River passes 100m south of this cemetery (**Figure 2**). The site was located in the area to be impacted by the Chandir Dam, its rescue excavation was carried out by Ebrahim Roustaei Farsi (Roustaei Farsi et al. 2019) in three trenches from early June to mid-July of 2018, with the aim to rescue and collect all remains from the building known as the Sari Gol crypt dated based on inscribed bricks to 1651 CE, i.e. the Safavid period. Thermoluminescence dating of two bricks (370±16 years ago) corroborate that the inscriptions were contemporary to the construction of the crypt.

The first trench with dimensions of 10×10m was established on top of the mound known as Sari Gol crypt. After removing the debris, a rectangular building with dimensions of 530×460cm appeared. The building entrance door and porch were in the

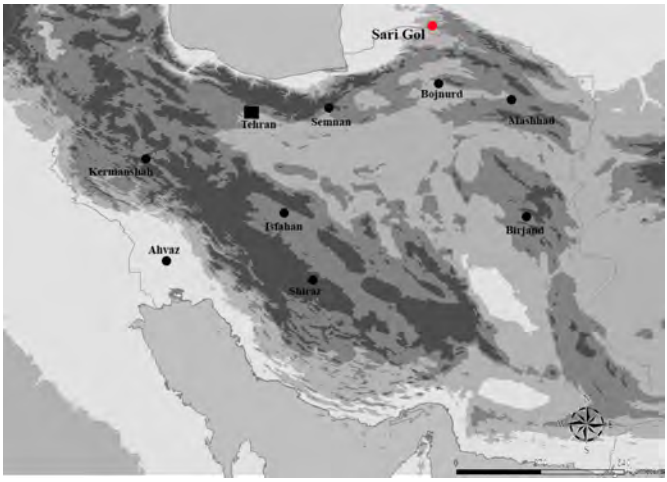

Figure 1. The location of Sari Gol. Drawing by M. Heydari Dastenaei.

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Table 1. The description of human bone assemblages from the crypt.

Unit	MNI	Pathologies/Fractures
1	four adults and one subadult	DJD of the joint surface on the right radial head; morphological changes, porosity, and deformation of distal fibula; moderate DJD in thoracic vertebrae; healed trauma in left fibula; healed oblique fracture in left radius
2	six adults and one subadult (possibly overlapping with unit 1)	tibia with lateral deformity (possibly rickets)
12	two adults	osteophytes in L4, L5
16	three adults	porosity and deformity in the lateral end of right clavicle; DJD on vertebral body in one cervical vertebra; a skull with evidence of premature closure of the sagittal suture
27	six adults and one subadult	fusion of two thoracic vertebrae; heavy porosity and osteophytes on thoracic vertebrae; porosity, eburnation, and osteophytes on the articular facet for dens of an axis; heavy bone formation and deformity and porosity on six lumbar vertebrae (advanced spondylosis)
29	three adults	porosity and osteophytes on the head of one thoracic rib; DJD in T12 or L1

southern part, and the entrance to the crypt was located strictly under the pavement of the porch. Unfortunately, its front part has been destroyed due to unauthorized digging. A total of 318 complete or fragmented adult bones, 12 subadult elements and two adult skulls were collected from 6 units (numbered 1, 2, 12, 16, 27, and 29)

Figure 2. Sari Gol in the landscape of Northeastern Iran. Photograph by E. Roustaei Farsi.

of the crypt (**Table 1**). Three other graves found in this trench were simple pits with *lahad* stones. In the Islamic funeral rite *lahad* is the narrow gap at the bottom of the grave to place the body, and the *lahad* stones are placed above this gap completely covering the *lahad* gap (Najafi et al. 2019:56), and their direction is approximately

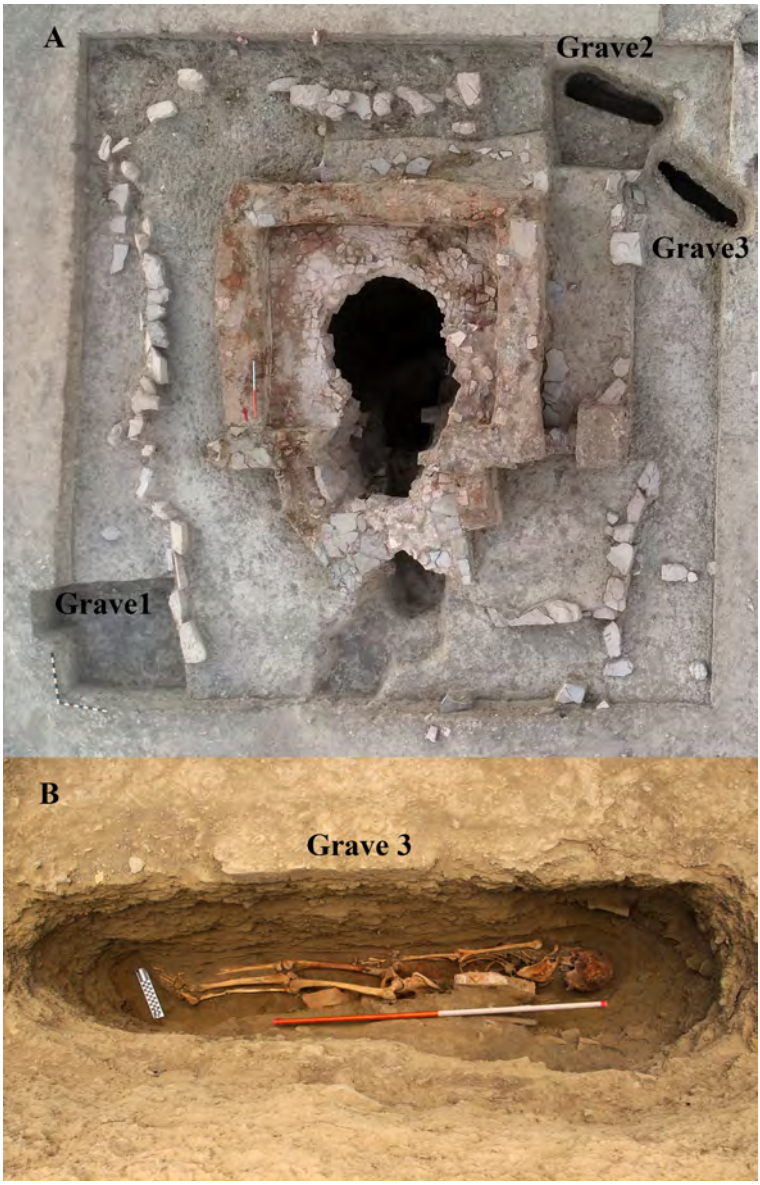

Figure 3. A: Sari Gol crypt after excavation, B: Grave 3. Photographs by E. Roustaei Farsi.

southeast-northwest (i.e., towards Qiblah). In each of these graves, only one skeleton was found, along with traces of wood (**Figure 3**).

The second trench 10×12m was excavated northeast of the crypt (**Figure 4**). Eight graves were excavated there, with no human remains in four of them, suggesting they were prepared in advance. Human remains were found in four other graves, all of them also along northwest-southeast axis. The third trench was established 30m northeast of the crypt with dimensions of 4×5m (**Figure 5**). There were three further graves with *lahad* stones.

Figure 4. Trench 2. Photograph by E. Roustaei Farsi.

Figure 5. The grave of Trench 3. Photograph by E. Roustaei Farsi.

Table 2. Human skeletal remains discovered at Sari Gol outside the crypt.

Trench	Burial type	Burial	Skull	Age at death	Sex	Bone/tooth paleopathology
I	single	2	broken	50+ years	female	moderate DJD in the elbow, thoracic and lumbar vertebrae (T8–12, L1–5), and sacrum S1, AMTL, dental calculus
I	double	3A	+	25–35 years	female	periodontal disease, dental calculus
		3B	–	0–6 months	–	
II	double	2A	–	0–3 months	–	
		2B	–	0–1 year	–	
II	single	3	broken	20–25 years	male	cribra orbitalia (R)
II	single	3	–	0–3 months	–	
II	single	4	–	1.5–2 years	–	
III	single	1	broken	50+ years	female	osteoporosis, advanced AMTL with atrophy of mandibular alveolus

Age-at-death and sex estimation of adults were based on pelvic and cranial morphology (Buikstra & Ubelaker 1994; Brothwell 1981; Bass 2005). In subadults, the age-at-death was assessed based on the growth and development status of bones and teeth (Scheuer & Black 2000; Ubelaker 2004). Pathological conditions were diagnosed following Ortner (2003). Details on human skeletons retrieved from the cemetery outside the crypt are provided by **Table 2**. Taphonomic effects observed at Sari Gol include fragmentation, erosion, staining and surface plant roots. Especially the elements retrieved directly from the grave floor showed high degree of damage.

In general, the sample size is too small to offer a reliable insight into the local population buried at Sari Gol and only some general observations were possible. Evidence of degenerative joint disease was noted in many adult elements (especially the spine, ribs, and hand bones), and there were two cases of well-healed fractures (**Figure 6**).

Figure 6. A: Healed fracture of fibula, B: Healed fracture of radius, both elements retrieved from context 1 of the crypt. Photographs by E. Roustaei Farsi.

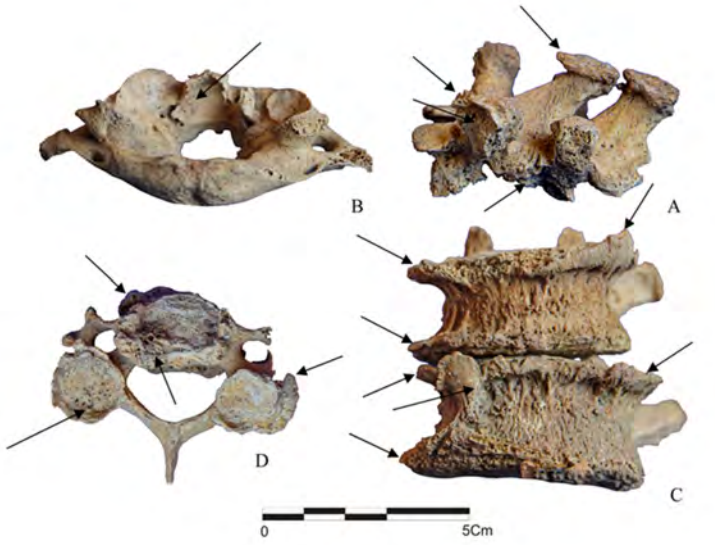

Figure 7. Pathological lesions from context 27, A: Fusion of two thoracic vertebrae; B: Osteophytosis in the atlas joint; C: Degenerative joint disease in the lumbar vertebrae, D: Degenerative joint disease in the cervical vertebra. Photographs by E. Roustaei Farsi.

These signs suggest that some of the buried people experienced some degree of mechanical stress during their lives. Joint disease of the cervical vertebrae may reflect carrying a load on the head (**Figure** 7).

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