The Funerary Cave of the Old Lady Spider (Ladakh)

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This paper is about the study of a rare funerary cave in Ladakh, known as Abi Srinjamo Bao, or the Old Lady Spider Cave (Fig. 1 & 2, 34.552716°N 76.422624°E). The morphology of the cave and its remains, as well as the folklore surrounding it, fairly stand out in the landscape of funerary caves documented elsewhere on the plateau.

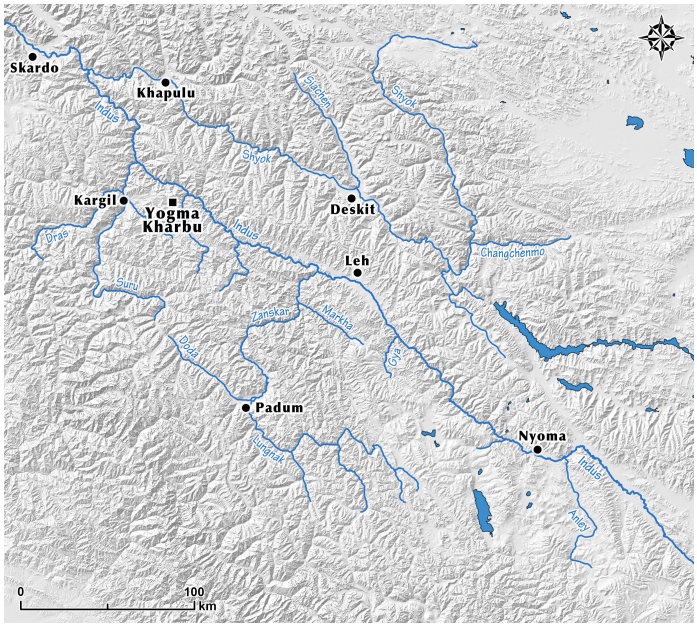


Fig. 1: Location of the Old Lady Spider Cave, Yogma Kharbu (Devers 2025).

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The unique potential of the site for the exploration of little-known aspects of Ladakh's ancient history, at the crossroads of the Tibetan, Central Asian, and South Asian worlds, led the authors to set up and conduct the research presented in this paper, in close— partnership with the village community. In the following, we will cover the description of the cave and its remains, its folklore, and the study conducted on the bones, including palaeopathological, paleogenetic, and radiocarbon analyses.



Fig. 2: Ladakh within the network of the so-called "Silk Routes" (Devers 2025).

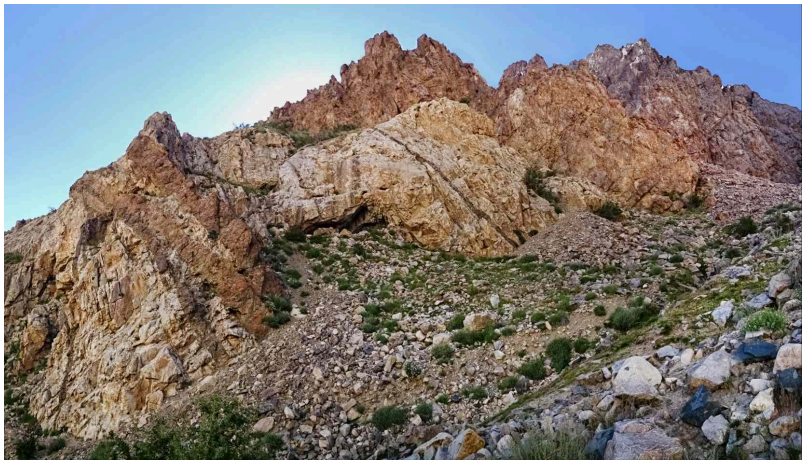


Fig. 3: The Old Lady Spider Cave from below (Devers 2015).

1. Description of the cave

The cave (Fig. 3) is located in the pastures of Gachu Lhabrog, above the village of Yogma Kharbu (3,440 m), in the region of Purig in Ladakh. The valley is in the wider area of influence of the major fortified complex of Chigtan (3,290 m). Gachu Lhabrog (3,720 m) is the summer settlement of Yogma Kharbu, where one finds ruins of habitations, fields (now mostly abandoned), and trails to reach several pastures for the flocks of sheep and goats. The cave is in the main valley upstream of Gachu Lhabrog, at an altitude of about 4,030 m. Although nowadays the valley is largely desertic, until a few decades ago it had a forest of tall juniper trees. As a result, there used to be a more diverse and abundant wildlife, including Himalayan brown bears.

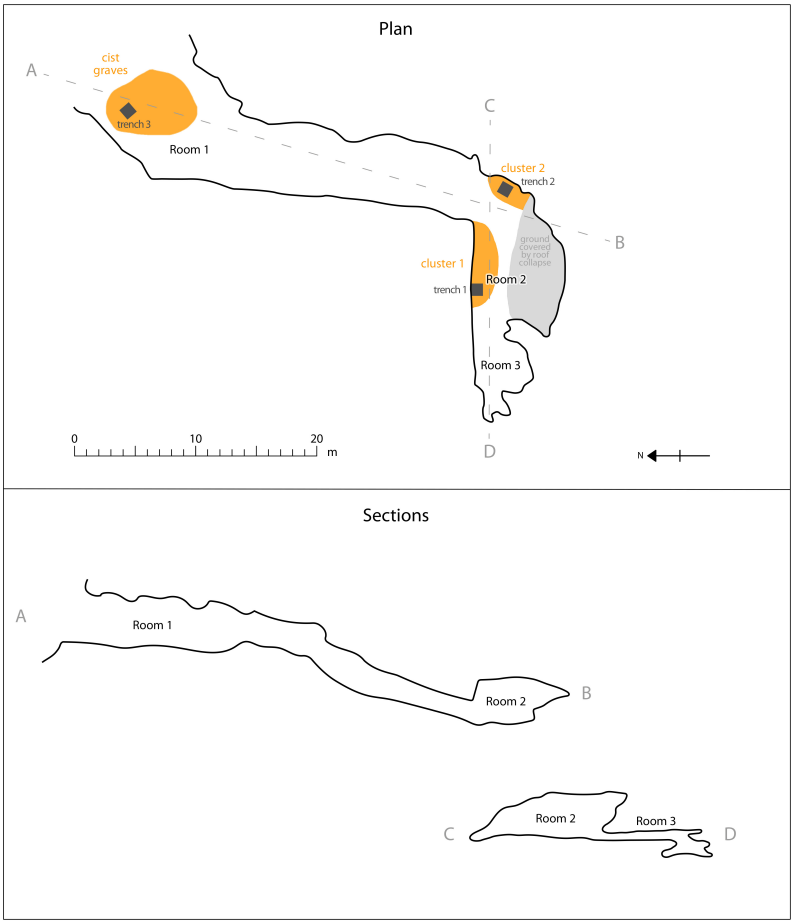


Fig. 4: Plan and section of the Old Lady Spider Cave, drawn from points cloud kindly provided by Danilo Rosati (Rilievi srl) (Devers 2025).



Fig. 5: The first room, with Sonam Dolma, Sumeet Sunil, Saurabh Singh (from right to left) (Devers 2015).

The cave is one of the very few deep ones of Ladakh (Fig. 4), a characteristic likely enabled by its location at the junction of igneous and sedimentary formations. The cave opens on a large room (Fig. 5), which spans a maximum diagonal length of approximately 15 m and a width of over 9 m. The room is scattered with irregularly dispersed rocks, a result of multiple roof collapses. The ceiling reaches a maximum height of a little under 4 m from the cave floor. There are petroglyphs on the ceiling and on a rock that fell from the roof (Fig. 6),

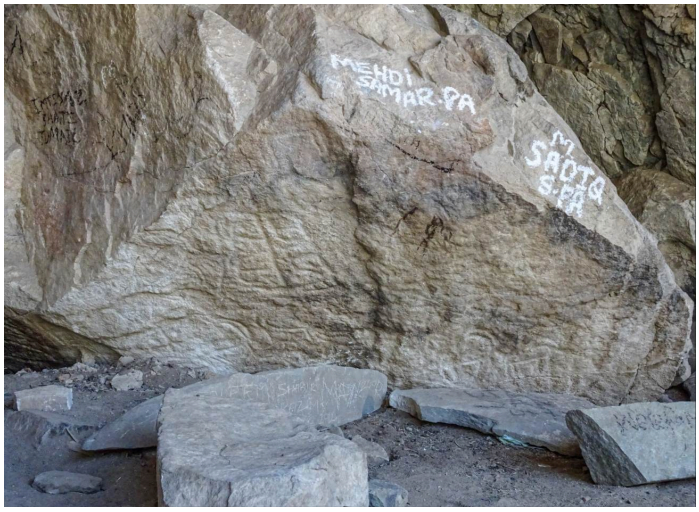


Fig. 6: Petroglyphs inside the first room (Devers 2020).



Fig. 7: Carving of a unique geometrical figure inside the first room (Devers 2024).

which consists mainly of ibexes and of a unique geometric figure (Fig. 7). There are remains of masoned walls at the back of the room (Fig. 8), forming some sort of small structure akin to a storage. There are also remains of opened cist graves in the front area of the room. One elder of the village, Apo Karim Ullah (Gongmicho-pa, Yogma Kharbu), who was 96 years old in 2016, told us that when he was a teenager, one of these structures was still sealed with burnt clay. He opened it, and found a charred barley inside, with bones and three arrow heads



Fig. 8: Masoned walls inside the first room (Devers 2024).

underneath the barley. Because of the barley found inside the tomb, these structures have been locally called *bangba* or 'granary store' (*bang ba*). The number of these cist graves is unknown. Two are currently opened and visible (Fig. 9), others have been buried again by villagers or Nepali labours — all were looted in the past decades. As those revealed during the excavation, they appear to mostly use natural rocks on one of their sides.



Fig. 9: Open cist grave inside the first room (Devers 2024).



Fig. 10: General view of the second room with Veena Mushrif Tripathy, Sumeet Sunil, and Sonam Dolma (left to right) (Sunil 2021).

The first room ends with a tunnel, whose entrance is half collapsed — one should enter it with care without causing the roof to collapse further. This tunnel leads to a second room (Fig. 10), about 8 x 10 m. Due to the uneven surface, the ceiling height varies, with a maximum height at about 4 meters. Over half the ground is covered by rocks fallen from the roof. The rest of the ground was covered with human bones (Fig. 11 & 12). As the only chamber permitting unrestricted



Fig. 11: Bones in the first cluster of the second room (Mushrif-Tripathy 2018).



Fig. 12: Bones in the first cluster of the second room (Mushrif-Tripathy 2018).

movement, this room exhibited significant signs of anthropogenic activity. Although there were bones scattered a bit everywhere, there were two main clusters. The walls of the room are covered with graffiti left by the numerous villagers and other sightseers who have visited the cave year after year since the original exploration of the cave by Kacho Akbar Khan. Overall, the bones were never in the same position: it was common for visitors to pick some up and move them — a nickname for the cave was thus "the bone market". Some remember a group of doctors from Kashmir University that came to the cave with sacks to collect large numbers of bones for the medical lab of their college. A group of Nepali labours is also supposed to have collected a certain quantity of skulls and long bones — the most valuable on the black market. Beyond human interference, the cave is inhabited by an abundance of pikas, and other animals probably go inside the cave on a regular basis, moving bones on their way. Members of the present study have witnessed the moving of the bones between each of visit from 2015 onward.

The entry to the third room is particularly notable. Situated at the northwest corner of Room 2, the entrance is a narrow, roughly 30-cm-high opening, requiring individuals to crawl. Although fairly large (about 7 x 5 m), the ceilings are only about 30 to 60 cm high throughout the room, requiring one to either crawl or crouch throughout (Fig. 13). The floor of the room was scattered with bones.



Fig. 13: Bones in the third room (Devers 2015).

At the end of this room there is a sort of shaft that opens, which used to lead to a fourth room. The tunnel to this room is now collapsed: it is not possible to access it anymore. It is not known when the tunnel collapsed exactly, but until the early 2000s it was possible to enter the fourth room. Villagers state that it was the largest room, and that there were numerous bones and skulls inside. Our study thus misses an important chunk of the remains that were located inside this room.

There was a tunnel beyond this fourth room, which was already inaccessible in the 1980s.

2. The tale of the Old Lady Spider

The tales of the Abi Srinjamo Cave

Two main legends are linked to the cave. The most prominent is about the Abi Srinjamo: "There once was a giant creature known as the Old Lady Spider living in a deep cave in the pastures of Gachu Lhabrog above Yogma Kharbu. She often wandered the mountain and ate the people she would encounter, later spitting out their skeletons inside her den. One day, the Tibetan hero Kesar came to know about the monster. He went on a chase and killed her with one swift blow of his legendary bow, forever freeing the people from the wrath of the Old Lady Spider."

In a secondary story, it is said that there once was a group of outsiders that came to the pastures of Gachu Lhabrog and settled inside the cave. One night, a grandmother from the village went to the cave and, while people slept, she started a fire inside the cave and blocked the entrance, causing everyone to die.

Other stories pertain to the length of the cave. According to oral tradition, it is believed that the cave of the Old Lady Spider (4,030 m) connects to another cave located along the Indus on the other side of the mountain at the village of Batalik (2,640 m). The horizontal distance between the two caves is about 13 km as the crow flies, and there is about 1,360 m of difference in altitude. One story states that at some point, a group of villagers wanted to see if the two caves were really connected; they consequently tied a lit candle to the tail of a cat and released him inside the cave at Gachu Lhabrog: the cat was subsequently seen coming out from the cave at Batalik.

Beyond the legends, the Old Lady Spider Cave happens to be located at the junction area of igneous and sedimentary formations. This type of geological situation is conducive to deep caves and extensive networks of interconnected galleries. It is thus conceivable that the two caves are actually connected in real life. To ascertain this,

an in-depth speleological study would need to be conducted, involving the clearing of the roof falls along the way.

Other tales of giant spiders

Interestingly, there are other villages in this part of Ladakh with stories involving giant spiders. On the other side of the mountain, there is thus a story of Ani Srinjamo, or Aunty Spider, at the village of Garkon. In the mountain, there is a cave known as Rui Chatari, whose entrance is walled off by adobe bricks or rammed earth. It is said that a giant monster, Ani Srinjamo, used to live inside this cave. She regularly attacked the village and ate its inhabitants. In order to prevent these assaults, the villagers had to give her one child every year. One day, Guru Rinpoche, a Buddhist heroic figure who is considered to have first brought Buddhism to Tibet in the 8th century, came to Garkon and, learning about the misdeeds of the creature, chased after her, drove her inside the cave and threw mud at the entrance in order to seal her off, freeing the villagers from the wrath of the Aunty Spider.

At Batalik, there is a large boulder that spans the two banks of the gorge of the torrent. It is said that there was a giant spider, or Srinjamo, that was traveling from Baltistan to Leh. She carried clay and a big rock to help for the construction of the palace at Leh. When she reached Batalik, she learnt that the palace was already finished, which made her drop the heavy rock which became the bridge over the torrent of Batalik. Later, she dropped the clay at Spituk.

These legends involving giant spiders, more specifically *srinjamo* spiders (*srin ja mo*: 'huntsman spider' in the northwestern regions of Ladakh such as Sham)[5], are found in villages located in a small area (each about 10km from the next). The stories of the Old Lady Spider and of the Aunty Spider follow a similar narrative: 1) a giant spider lives in a cave; 2) she ate humans; 3) a heroic figure (Gesar or Guru Rinpoche) learn about her and free the villagers from the scourge she causes. In these stories, the giant spiders probably represent pre-Buddhist deities to whom human sacrifices were performed in order to not suffer their wrath. At Garkon, Guru Rinpoche could be seen as representing the arrival of Buddhism that freed the villagers from these pagan rituals, whereas at Yogma Kharbu, a Muslim village, it is the laic hero Kesar that performs the liberation.

[5] According to the reference dictionary for Ladakhi dialects, *Rang Skat* (Norman 2019).

Braving the monster: the exploration of the cave by Kacho Akbar Khan

The legend of the Old Lady Spider ensured that people were afraid of the cave and did not dare to go inside. The tale would have been reinforced by the few scattered bones visible at the entrance, enough to discourage people from going further. As a result, the cave appears to have been largely left undisturbed. This state of affairs took a sharp turn in the 1980s when Kacho Akbar Khan, then a medical student, was curious to explore the cave, as his training had made him unafraid of human skeletons or stories of monsters. He is the first person in living memory to have ventured inside the cave. Equipped with a small torch he went from room to room. He remembers seeing dozens of skulls in the various rooms. After this visit, more people started to go inside the cave to see by themselves the bones and the place of the stories they had heard since childhood. From this time of the late 1980s or early 1990s we have the first pictures from inside the cave, taken by Kacho Mumtaz Khan and his friends.

As time went on, the cave became an object of curiosity and attracted visitors from far beyond Yogma Kharbu: people regularly come from all over Purig, or even from Kashmir — during the excavations there was the surprising visit of a rinpoche from Sham.

3. Initial hypotheses for the origin of the bones

Based on the characteristics of the Old Lady Spider cave, several hypotheses were formulated to potentially explain the origin of the bones:

1) The cave was used as a mass grave following a war or massacre. In such case, all bones should return a similar dating, and there would likely be signs of trauma and cut marks from weapons on the bones. It would also have to be determined if the cist graves and the bones in the other rooms are the result of two different events, or if they are the result of two different strata of people (a category of people entitled to a cist grave, a category of people without).
2) The cave was used as a repository for bodies in times of epidemics. It is common in oral traditions throughout Ladakh for caves to be thought to have been used to isolate ill people in times of epidemics. In such case, bones may return either a similar dating if the cave was used in single epidemic, or a range of dating if it was used in the course of several epidemics. It would be likely that a number of bones would bear marks left by diseases, and/or that paleo-pathology analyses would identify pathogens.

3) The cave was used for ritual human sacrifices. It is common in the Tibetic world that stories of monsters relate to pre-Buddhist deities. It was further common for some of these deities to require human sacrifices. The cave could thus have been a place of sacrifice to a deity later remembered in folklore as the Old Lady Spider. In such case, it would be probable to find signs of trauma or cut marks on some bones as a result of the killing of the sacrificial subjects. Such use would also match well the legend of the Aunty Spider at Garkon, which require a yearly donation of a child from the villagers, and who was defeated by Guru Rinpoche, the person who is considered to have first brought Buddhism to Tibet — hence theoretically putting an end to pre-Buddhist beliefs and sacrifices.
4) The bones from the second rooms onward are sacrifices made at the death of important people buried in the cist graves of the first room. It was not uncommon in the Central Asian world at the death of an important figure to sacrifice their servants, slaves, etc. In such case, the bones inside the cist graves and those in the other rooms should return similar dating. It would also be probable to find signs of trauma or cut marks on some bones as a result of the killing of the sacrificial subjects.
5) The cave was used as a repository for the dead. Such deep cave is very rare in Ladakh. It could for instance have been seen as a symbolic way to the world of the underground. The Old Lady Spider could also have represented an ancient funerary deity. In such case, it is difficult to expect a particular range of dating, as it would depend on the chronological extent during which the cave was thus used. It would also have to be determined if the cist graves and the bones in the other rooms are the result of two different periods of use of the cave as a funerary site, or if they are the result of two different strata of people (a category of people entitled to a grave, a category of people without).

4. Exploration and excavation campaigns

Exploration campaign (2018)

A first campaign of exploration took place in 2018, led by Veena Mushrif-Tripathy, with the participation of a Master student from Deccan College, Stanzin Norbu (Samba-pa, Sabu). The goal of this campaign was to assess the extent of the bones, their diversity, and the potential for excavations. It was observed that there were bones from both genders and all age groups (from infant to elderly individuals). It

was also found that skulls were strikingly missing, and that long bones such as femurs and tibiae were under-represented. This may be due to a combination of factors. The cave could have been used over the centuries as a source for long bones to make the ceremonial flutes known as *kangling* (*rkang gling*) and as a source for skulls to make the ceremonial drinking cups known as *kapala* (*ka pā la*), both used in Tibetan Buddhism. The potential sourcing of such bones for ritual objects however cannot fully explain the absence of skulls, as the villagers who visited the cave in the 1980s and 1990s all remember seeing skulls. It is thus likely that a number of skulls and long bones were also taken by subsequent visitors.

Excavation campaign (2021)

A campaign of excavations was subsequently organised in 2021. The research team was composed of first and third authors, Sumeet Sunil and Saurabh Singh from the Deccan College, and second author from the CNRS. Thanks to the immense help of the Kacho family, in particular of Kacho Mumtaz Khan, Kacho Sikundar Khan, Kacho Shamim Khan, and Kacho Akbar Khan, the villagers were incredibly accommodating and far made up for these particular conditions.

The goal of the excavation was to 1) collect the bones in all three rooms to study them at the Deccan College Post-Graduate and Research Institute, 2) make a trial pit in the first room to see if there could still be an intact cist grave, 3) make trial pits in the second room to assess the stratigraphy and whether there are bones below the ground, 4) if an intact cist grave could be found to assess the possible relationship between the cist graves and the bones in the other rooms.



Fig. 14: The two cist graves exposed during the excavation (Devers 2021).

Trial pit in the first room

The trial pit of the first room exposed two graves, both looted (Fig. 14). Both graves were built with stone masoned walls, and used large rocks on one or two sides. One grave is L-shaped, the other is partly-circular. Long stones were also exposed which were used to cover the tombs.

The stratigraphy consisted in a homogeneous layer of post-looting filling. This filling corresponds to the occupation of the cave by a group of Nepali labours in the mid-2010s. They worked on the construction of a dam over the stream a little upstream of the cave. They camped in the cave, and were witnessed to dig in the first room in search of objects inside the tombs.

Trial pits in the second room

Two trial pits were made in the second room, at the location of the main two clusters, each 1 x 1 m.

The first pit was excavated on the right side when entering the room, inside cluster 1 (Fig. 15 & 16). Three layers were identified until reaching a fourth layer of stone rubble, which probably corresponds to a past collapse of the roof of the cave. The maximum depth of this pit was just about 1 m. The first layer contained most of the rare artefacts, consisting of stones, bones, wood, and few ceramic shards.

The second pit was excavated on the left side when entering the room, in cluster 2. Three layers were also identified before reaching a fourth layer made of stone rubble — an apparent past collapse of the roof of the cave as well (Fig. 17 & 18). Circular burnt patches were located in layer two, along with a few charred animal bones, indicating past cooking activity in this area.



Fig. 15: Trial pit 1 in the second room (Sunil 2021).



Fig. 17: Trial pit 2 in the second room (Sunil 2021).

For both trial pits, the few artefacts found in the layers below the ground can reasonably be explained by the digging activity of the numerous pikas of the area.

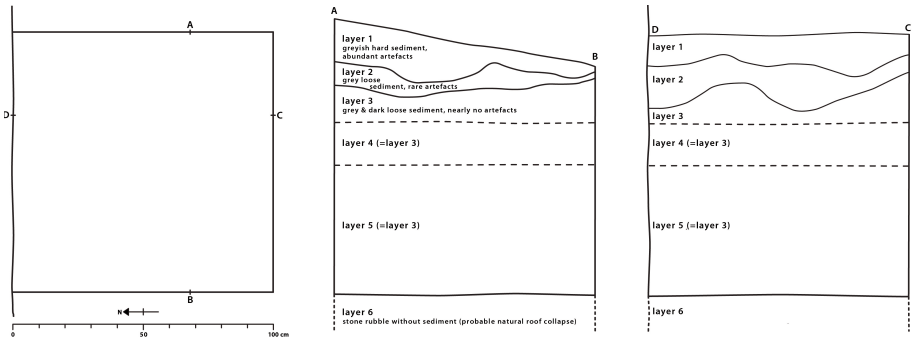


Fig. 16: Plan and sections of trial pit 1 in the second room (Devers 2021).

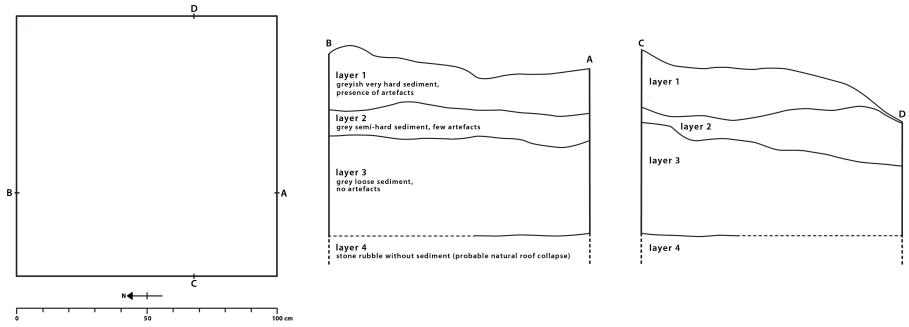


Fig. 18: Plan and sections of trial pit 2 in the second room (Devers 2021).

5. Analysis of the bones

As seen hereabove, disarticulated skeleton remains were observed dispersed across all three chambers, including the end pit of room 3. The distribution of the bones is most dense in room 2, followed by room 3, with only a few bones found in room 1. During each visit to the cave, new bone specimens were recovered, necessitating an understanding that both the Minimum Number of Individuals (MNI) and the Number of Identified Specimens (NISP) remain susceptible to change with every new investigation. Additionally, human intervention emerged as a significant factor impacting the integrity of the

assemblage, consistently disturbing the orientation and location of the bones, thereby influencing data accuracy. The excavation revealed that bones were primarily confined to the surface layer. The negligible number of small bones recovered from the substratum is most likely due to rodent activity.

The cave's elevation of 4,030 m has provided a high-altitude indoor environment setting that helped effectively shut out a number of destructive decaying agents.[6] Thanks to persistently low temperatures (below freezing level several months per year) and the arid environment, four naturally mummified specimens in phenomenal condition were recovered (Fig. 19). The overall assemblage is exceptionally well preserved — bones are mostly intact and all anatomical districts are represented. In the instances where partial damages are observed, they appear to have primarily arisen from post-mortem damage due to cultural factors (human intervention) as well as structural deterioration caused by environmental factors (weathering).



Fig. 19: Mummified hand retrieved on the floor of the second room (Mushrif-Tripathy 2018).

The material for this study is a combination of the bone specimens obtained from previous explorations (2018 onwards) as well as newly acquired bone specimens retrieved during the excavation in 2021. However, a number of specimens collected and kept inside the cave prior to 2021 were lost due to intermittent cave visitors. Therefore, the photographic documentation of the preceding bone assemblage record served as a reference to create this new combined data set.

[6] Finaughty and Morris 2019.

The determination of the minimum number of individuals (MNI) was represented by the maximum number of R scapulae of 56 individuals from the combined assemblage. This number was achieved by categorizing the catalogued sample in similar skeletal elements into left and right sides and subsequently selecting the most represented element as the estimated MNI in the studied sample.[7] The specimens for which the sides could not be ascertained were omitted from the count. Conversely, all disarticulated skeletal elements were counted, irrespective of their side identification and preservation condition, in order to establish the NISP (Number of Identified Specimens).

In 2018, the gathered bones were categorized into two distinct clusters, referred to as cluster 1 and cluster 2. The division was done in order to create an onsite inventory. However, during the 2021 excavation, it emerged that the bone specimens are found only on the surface layer. The NISP yielded in 2018 from cluster 1 and cluster 2 was 1,603. However, due to the occasional presence of cave visitors, 282 specimens were lost. As a result, the collection was reduced to 1,321 specimens when it was retrieved in 2021. In addition, 468 new specimens were incorporated into the existing collection in 2021, resulting in a total of 1,789 specimens.

Hereafter, we focus on the study of 678 bones conducted by the third author for her doctoral research. Bone elements like the thoracic cage (ribs 604 and sternum 23) and the vertebral column, (484 specimens: cervical 67, thoracic 263, lumbar 119, sacrum 35) are not incorporated.

Demographic profile of the site

As discussed, the skeletal assemblage is of commingled type. Barring a few exceptions, associating bones with one another is extremely difficult. Therefore, understanding the demographic pattern of the site is delicate. Sex determination was only done on the mandible and pelvic bones following standard methodologies.[8] No sex determination was conducted on long bones.

For age estimation, methods developed by Buikstra and Ubelaker (1994) for adult individuals, and Scheuer and Black (2000, 2004) for subadults, were used. The age is given in large bracket rather than exact age estimation. The assemblage thus includes individuals from all age categories with a representation of infants, young adults,

[7] Buikstra et al. 1994; Adams and Byrd 2006; Konigsberg and Adams 2014.

[8] Ascádi and Nemeskéri 1970, Milner 1992, Buikstra and Ubelaker 1994, Klales et al. 2012.

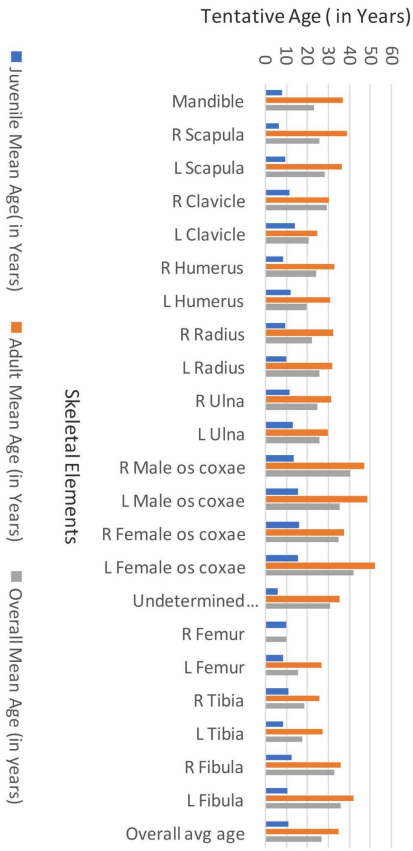


Fig. 20: Mean age observed in different skeletal elements (Dolma 2025).

middle-aged adults, and old adults. The youngest observed individual was around 1 year old, whereas the oldest was over 50 years old. The majority of the individuals were in their 30s (Fig. 20).

Both males and females are represented in the collection. Of the nine adult mandibles examined, four were assessed as likely male, three as likely female, and two remained indeterminate. Examination of pelvic elements identified 10 left and 5 right os coxae as male, and 14 left and 14 right os coxae as female. Given the commingled nature of the assemblage, the minimum number of individuals represented by the pelvic elements is calculated at 10 males and 14 females, i.e. about 58% of the individuals that can be gendered are females (Fig. 21).

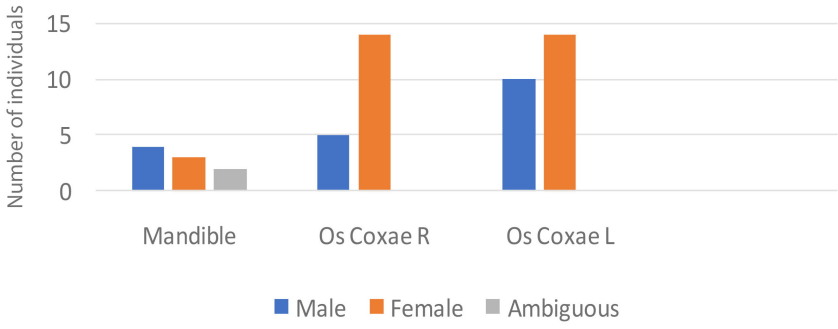


Fig. 21: Sex distribution evaluated from mandible and os coxae bones (Dolma 2025).

Pathological findings

The overall health status of the population of the cave, as inferred from the skeletal remains, appears relatively robust, although indicators of environmental stress are evident. The incidences regarding the nutritional insult are visible with Harris lines or growth arrested lines in some individuals. The presence of numerous young individuals in the collection shows that there could have been a nutritional burden on the population represented in the cave. There is a notable absence of pathological conditions typically associated with systemic infections, congenital deformities, or major trauma. However, the assemblage does exhibit several other notable pathologies, particularly degenerative joint disease (DJD), osteoarthritis (OA), markers of metabolic stress, and dental pathologies.

The most prevalent pathology observed is degenerative joint disease, presented through features such as marginal osteophyte formation, articular lipping, porosity, and eburnation. Interestingly, DJD is not confined to older individuals; evidence from the clavicles suggests early onset among younger adults. Specifically, left clavicles showing DJD fall within the 25–35 age range, although generally in a mild form. This early degeneration likely reflects biomechanical stress resulting from physically intensive activities.

Degenerative changes are especially evident at the enthesis sites of the clavicle, with the rhomboid fossa exhibiting a lytic lesion impression. This may suggest lateralized activity patterns, such as the preferential use of one arm for carrying, lifting, or tool use. Furthermore, the presence of lipping on the inferior medial clavicle indicates that repetitive mechanical stress was a common experience across various age groups.

Pathogen analyses conducted on several samples has unfortunately been unsuccessful. Although no signs of epidemics could be detected so far either on the bones or on tissue samples, more analyses would be helpful before to fully discard this analysis.

Radiocarbon dating

Dating of samples was conducted as standard procedure for their analysis in paleogenetic (see hereafter). After calibration on the IntCal20 scale, dates span from the mid-3rd to the turn of the 7th centuries CE, with most samples revolving around the 5th–6th centuries.

Paleogenetic analysis

Analyses conducted by David Reich and Nick Patterson et al. (forthcoming) evidence an admixture that occurred about fifty generations prior to the date of the samples. Two populations thus appear to have mixed around the 9th century BCE: one population of Tibetan Plateau-related ancestry (carrying the haplotype conferring high-altitude adaptation inherited from Denisovans), and one population of northern South Asian-related ancestry. This is the first time that such 50/50 admixture is evidenced in the Tibetan cultural world.

6. Discussion: what interpretation for the Old Lady Spider cave?

Five main hypotheses were formulated hereabove to explain the origin of the skeletal remains in the cave. In light of the results obtained with the various analyses conducted, here is what conclusions we may derive:

Scenario 1: *The cave was used as a mass grave following a war or massacre: the main requirements for this scenario are; all bones should be of similar dating, and there would likely be signs of trauma and cut marks from weapons on the bones.*

There are no weapon injuries or cutmarks on any of the preserved bones. Dating of samples yielded results spanning from the mid 3rd to the turn of the 7th centuries CE. As such, this hypothesis can probably be safely discarded.

Scenario 2: *The cave was used as a repository for bodies in times of epidemics. It is common in oral traditions throughout Ladakh for caves to be thought to have been used to isolate ill people in times of epidemics.*

All the bones in the collection do not show any indication of infectious disease. There are certain pathological lesions but they are confined to arthritic joint disease. Some nutritional insults are also found. Pathogen analyses conducted on several samples has unfortunately been unsuccessful. Although no signs of epidemics could be detected so far either on the bones or on tissue samples, more analyses would be helpful before to fully discard this analysis.

Scenario 3: *The cave was used for ritual human sacrifices. In the Tibetic world, it is common for stories of monsters to be linked to pre-Buddhist deities. Many of these deities were once associated with rituals that included human sacrifice. It is therefore plausible that the cave functioned as a site of sacrificial*

offerings to such a deity—one that, over time, was reimagined in local folklore as the figure of the Old Lady Spider.

To prove this hypothesis the explanation of scenario 1 is applied as there are no cut marks on bones. At the same time bones of both men and women, children and adults are present. Some of them also have arthritic lesions. Generally, there are criteria used for the selection of the individuals to offered as sacrifices. However, no selection pattern can be distinguished in the assemblage. For these reasons, it is unlikely that this hypothesis can be retained.

Scenario 4: *The bones from the second room onward are sacrifices made at the death of important people buried in the cist graves of the first room. In Central Asia, it was common to sacrifice servants or slaves upon the death of a prominent person. Thus, bones in cist graves and adjacent rooms should date similarly. Evidence of trauma or cut marks on some remains would likely indicate sacrificial killings associated with the burial practices of the time.*

To prove this hypothesis the explanation of scenario 1 is applied as there are no cut marks on bones. Anthropologically, it is less likely that young children would be buried along with the important figures. This hypothesis thus appears unlikely. However, because all the cist graves in the first room have been looted, the relationship between these tombs and the bones in the subsequent rooms cannot easily be ascertained: we cannot know at present if they were contemporaneous or from different periods. Therefore, this scenario cannot be fully ascertained.

Scenario 5: *The cave was used as a funerary depository for the dead. Such deep cave is very rare in Ladakh. It could for instance have been seen as a symbolic way to the world of the underground. The Old Lady Spider could also have represented an ancient funerary deity.*

This would thus leave the use of the cave as a repository for the dead as the main remaining possibility. It is common for populations to have preferred burial or funerary locations away from the living for a variety of reasons, such as to avoid the disturbing of the dead or to avoid the spread of diseases. In addition to symbolic/sacred considerations, the Old Lady Spider cave would undoubtedly have been ideal location for such other more practical considerations.

Conclusion

The cave of the Old Lady Spider represents the first excavation of an ancient funerary site in Ladakh. A minimum number of 56 individuals was observed. Considering the number of bones that have been taken

from the cave over the last decades by various visitors, and considering that the fourth room, which was the largest and which also had large number of bones, was inaccessible to us, the original number of individuals was likely significantly higher. All age groups and both genders are represented. The population of the cave was overall fairly healthy. The main pathologies observed were degenerative joint disease (DJD), osteoarthritis (OA), markers of metabolic stress and nutritional insults, dental pathologies, and healed fractures — no signs of epidemics were detected. Paleogenetic analyses evidence an admixture that occurred around the 9th century BCE between a Tibetan Plateau-related population and a northern South Asian-related population. In light of these various results, it appears that the cave was used as a place of repository of the dead mainly around the 5th and 6th centuries, possibly from as early as the mid-3rd century. The topic of funerary caves is an emerging one both in Ladakh, Western Tibet, and the Western Himalayas. More in-depth comparison between the various sites in these regions, such as Sding-Chung in Western Tibet[9] or the funerary caves of Upper Mustang, will undoubtedly prove a fascinating field for future research.

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[9] Lu et al 2022.

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