Pathology or Taphonomy?
A skeleton from Mozan (Northeastern Syria) dates to the Middle Bronze Age (2000 – 1600 BCE).

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TELL MOZAN

- ✓ An archeaological site in northeast Syria .
- ✓ Over 150 human skeletons were excavated.
- ✓ Datation: Middle Bronze Age (2000- 1600 BCE).
- ✓ Culture: Old Babylonian - Khabur .

MAIN GOALS

Present an ancient case of osteomyelitis. (Middle Bronze age 2000 – 1600 BCE).
How can the distinction between taphonomy and pathology be ascertained?
Were there funerary practices reserved for sick people in the ancient society of Mozan?


Fig. 1: A15.52 in situ.

BURIAL CONTEXT (A15.52).

Location: In one of the royal palace room, adjacent to a room containing 3 infants and 1 sub adult burial.
Chronology: Phase 5, Khabur, 2000 – 1600 BCE.
Structure: A shallow subterranean tomb.
Description: The body rests on the left side, in flexed position. Oriented NS, facing East (Fig. 1).
An adult 30-59 years. Sex indeterminate.
Buried with 2 ceramic vessels, placed next to the right knee joint.
Individual primary burial. Decomposition in a filled space.

The presence of rodent activity is well documented in this burial. With several bones showing significant amount of surface area chewed by rodents; add to that, a rodent femur was found with the burial.

ON THE SKULL

✓ ANTERIOR VIEW (frontal bone, Fig. 2): 6 small foramens on the frontal. A large fracture runs horizontally on the left parietal, and 2 small oblique ones on the right parietal. With no signs of healing.
✓ POSTERIOR VIEW (parietal and occipital bones): A large circular hole (68.38 x 69.06 mm) on the posterior side, cuts mainly the right parietal, extending past the sagittal suture and slightly into left parietal. Cutting the lambdoidal suture and a small portion of the occipital bone (Fig. 3). No bone remodeling is present. The upper border of this hole displays a clean vertical cut lines, while the lower right parietal and entire occipital margins shows evidence of postmortem alterations caused by rodents gnawing. No surfaces reveal remodeled bone.
✓ SUPERIOR VIEW (Top of the skull, Fig. 4,5): an elongated grooving (21.61 x 6.8 mm) in terms of the coronal-sagittal suture junction, extending past sagittal suture. It does not fracture the skull (depth = 2.75 mm). Rodents teeth marks were observed also on the left parietal border.

WHAT HAPPENED TO THE SKULL?

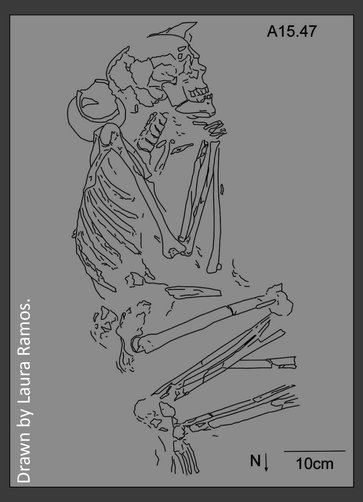
EITHER A15.52 has suffered of an injury on the top of the skull, which leaded to apply a surgical intervention or trephinataion on the back of the skull. In this case, both suspected areas have gnawed post mortem by rodents, widening the border of the original hole, and making it difficult to interpret. This ''trephinataion'' could be related to the osteomyelitis of the right femur also, but as no bone remodeling is present, this fact could not be confirmed.
OR the crane was simply gnawed by rodents, the same which gnawed other long bones of the same individual (humerus, radius). The origin of these traces were examined by zoo-archaeologists who confirmed this hypothesis. Similar cases were observed on other sites.

IN TERMS OF BODY TREATEMENT

✓ Within ancient Mesopotamia, textual sources indicate that several medical procedures were employed. They also suggest it was common practice to distance the sick body from the healthy constituents of society (Avalos 1995, Dalley 1984, Farber 1995).

✓ Compared A15.52 to other adult burials in Mozan (2000 – 1600 BCE) no visible difference in burial layout was noted. It looks like disease did not play a special role in funerary practices, which allow to distinguish a diseased body from a healthy one concerning the type of the grave, the inhumation position or the quality/quantity of funerary objects in the burial… etc.

✓ A15.47 an adult burial. Both these bodies were found inside tomb, flexed, interred with grave goods. The only difference is the orientation of the body (A15.47 was oriented SN, facing west). It is important to mention that orientation of inhumation is variable in Mozan's cemetery.



OSTEOMYELITIS

Location: Right distal femur.
Diagnose based on:
✓ Reactive new bone growth enveloping the squestrum, resulting in an enlarged and deformed appearance of the bone (Fig. 6).
✓ Presence of an abscess (Fig. 7) on posterior side of the distal end.
✓ X-Ray shows lytic center with a ring of sclerosis (Fig. 8).
Bones exhibiting localized sclerotic bone apposition associated with infection: Right patella (anterior face) – Right tibia and fibula (proximal ends).

DISCUSSION AND CONCLUSION

Based on skeletal analysis, A15.52 is an adult with chronic osteomyelitis of the right femur. Analyzing the traces on the skull showed that the differential diagnosis by observing the lesions of the bones in an isolated way, can lead us to distinguish two major causes: pathology (Trauma, trephination) and taphonomy (rodent activity). Scanning the skull could provide us with more precise information about the nature of these traces.
Contrary to what was mentioned in some ancient letters and medical texts from Ancient Mesopotamia, diseased body contaminated did not extend into death. A15.52 was buried following the same funerary practices used in the middle bronze age in Mozan.

Geographical map : Maison de l'Orient et de la Méditerranée, Jean Pouilloux, Université Lumière Lyon2, France .
Photos by: Rana KHAWAM – DGAM – Syrie.
ACKNOWLEDGMENTS. Special thanks go to Olivier DUTOUR (EPHE), Patrice COURTAUD and Henri DUDAY (CNRS) for the pathological and taphonomical advices.