The excavation held in the summer of 2016 recovered burials of children and camelids at the city of Huanchaquito, in Peru. The sample of what was already the largest child and llama sacrifice context in the New World increased significantly with a total of 200 camelids and 140 children.

Skeletal remains of 48 children were analyzed in the laboratory at the University of Trujillo. These included sets of human skeletal remains from earlier excavations in 2014. The age distribution of the sample (n=48) includes children as young as five years of age and as old as fifteen years of age. Because sometimes we needed to address an age range, for instance, between six and seven years of age, the average age distribution of the sample is ten and a half years of age.

The method used to record the cut mark frequency and distribution included: 1 – calculating the number of individuals with cut marks, and 2 – calculating the number of skeletal elements with cut marks. The cut marks were analyzed using the naked eye and a digital microscope (DinoXcope) with a magnifying lens of 50x.

There was a total of 34 remains with evidence of cut marks on the sternum. Two of the individuals that had a sternum with a cut mark also had cut marks on the ribs (Table 1). Three individuals had cut marks on the ribs and either presented no cut marks on the sternum or the latter was too fragmentated to be analyzed. Two individuals had a
fragmented sternum, and that made the analysis inconclusive. One individual presented a V-shape trauma on the clavicle. The entire trauma analyzed is consistent with perimortem sharp force trauma, where the cuts were made at or around the time of death, and they present bending of bone and no evidence of healing. Ten individuals did not have any evidence of cut marks on the sternum or ribs.

The cuts present on the sternum of all the skeletal remains were made perpendicular to the surface of the bone, and enough force was applied to bisect the element completely. Besides the sternum, some ribs also presented cut marks. Of the five skeletal remains that had ribs with cut marks, three had the cuts on the right 3rd rib, one had the cut on the 4th right rib, and one had the cut mark on the left 3rd or 4th rib (missing elements made it difficult to reassemble the chest). The cuts on the sternum bisected the manubrium and ran horizontally and ventrally. Based on their trajectory and the presence of cut marks on ribs, it is possible that these cuts were created to open access to the chest cavity. Sharp force trauma caused with enough force to bisect the sternum would have been probably fatal.

The microscopic analyses of the cut marks on the ribs and manubria reassured the patterning of perimortem trauma with no healing. The damage on the manubria was greater because it has a high degree of cancellous bone. Microscopically, cancellous bone consists of plates (trabeculae) and bars of bone adjacent to small, irregular cavities that contain red bone marrow. The manubria don’t present typical patterns of cut marks for instance; no kerf could be analyzed. The kerf of the cut refers to the floor and the walls of the cut mark. The ribs, however, could be analyzed through their kerf morphology. There are mainly four types of shapes designated to kerfs, and they are V-shaped, Y-shaped, U-
shaped, and Funnel-shaped (Figure 1). In profile, the angled and longer kerf wall represents the side of edge bevel. The cuts on the ribs fall within the Y-shaped and V-shaped. The difference among the kerfs exhibited within the sample can be explained by the variability in force and angle applied in creating each cut (Figure 2).

Through the analyses of the manubrium, I expected to notice some crushing and a tendency of the trabeculae to fall within the direction of the cut being made. For instance, if the cut were being made from the left to the right, the trabeculae would be “aggregated” or had a tendency to angle to the right, for the force was being applied to that side. Through the analyses of the ribs, I could observe the angle and bending of bone after the cuts. Even when the sternum did not present cut marks, I expected to be able to give a directionality of the cut that was made.

The microscopic pictures helped me to observe the patterns on the trabecular bone and ribs. There was a tendency of the trabeculae to “bend” to the right side, sometimes even showing signs of “crushing” through pressure, and cuts passing through the trabeculae themselves. The ribs showed kerfs and sometimes bending of the bone consistent with cuts being made ventrally, and from left to right. Both of these results combined are in line with a cut being made in the chest, running from the left side to the right side (Figures 3 and 4).

All the data analyzed, combined with the site and burial arrangement as well as the period (1400 AD) these skeletal remains represent, are consistent with a ritual sacrifice of children and llamas. Cut marks similar to those in this sample are present in other societies along the North Coast of Peru and other regions (Verano, 2001; Besom, 2009;
Table 1: Skeletal remains that presented cut marks. Bold elements presented cut marks in both sternum and ribs. Underlined element presented cut mark on left rib.

| Ribs        | **E100**, E107, **E110**, **E116**, E126 |
| Fragmentary (inconclusive) | E125, E139 |

Figure 1: Types of kerf morphology
Figure 2: Left: Cut marks on the rib of E100. Right: Cut marks on the rib of E107. The differences on kerf morphology are due to variability on angle and force used to cut, but they fall within V-shaped and Y-shaped types.

Figure 3: Frontal view of manubrium of E93. Notice the trabeculae bending to the right side, also cuts that can be recognized in the trabeculae. The directionality of the cut is left to right.
Figure 4: Dorsal view of manubrium of E116. Left: Starting point of the cut (left side of the manubrium). Right: Ending point of the cut (right side of the manubrium). Notice a clean starting cut point and a tendency for the trabeculae to bend to the side it is pressured on. There is also a cut mark in the trabeculae that angle down. Cut directionality is left to right.

References


