**SUPPLEMENTAL MATERIAL**

|  |
| --- |
| Table S1: 14C AMS dates from Quebrada Chupacigarro contexts |
| Individual | Lab Code | Material | Date |
| 14C BP | cal BC 1σ | cal BC 2σ |
| ZAC 0711 | Beta-531665 | collagen | 2510 ± 30 | 756-519 | 770-418 |
| ZAC 0872 | AA113128 | collagen | 2521 ± 28  | 758-544 | 774-421 |
| ZAC 1364 | AA113129 | collagen | 2545 ± 28 | 772-550 | 790-486 |
| ZAC 5749 | AA113130 | collagen | 2483 ± 29  | 745-416 | 756-407 |
| ZAC 0361 | Beta-332463 | cotton | 2440 ± 30 | 540-402 | 750-393 |
| ZAC 0381 | Beta-332464 | plant | 2430 ± 30 | 516-400 | 747-390 |
| ZAC 0754 | Beta-515734 | collagen | 2380 ± 30 | 476-232 | 541-204 |
| ZAC 0751 | AA113127 | collagen | 2324 ± 27 | 400-260 | 401-200 |
| Beta: Beta Analytic; AA: University of Arizona 14C AMS Laboratory. \*Calibrated with SHCal20: Southern Hemisphere (Hogg A. et al. 2020. SHCal20 Southern Hemisphere calibration, 0–55,000 years cal BP. Radiocarbon, 62 (4): 759-778) in OxCal 4.4 (Bronk Ramsey, C. 2009. Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1): 337–360). |

|  |
| --- |
| Table S2: 14C date combination\* of Quebrada Chupacigarro dates |
| R\_Combine (2455, 11)68.3% probability536 BC ( 3.3%) 530 BC517 BC (65.0%) 411 BC95.4% probability 744 BC (11.8%) 691 BC665 BC ( 5.0%) 645 BC550 BC (70.6%) 401 BC |
| *\** Using *R\_Combine* function, OxCal v.4.4 (Bronk Ramsey, 2009). *R\_Combine* function combines several 14C dates from the same event using error-weighted mean to retrieve a statistically more accurate date range. |

|  |
| --- |
| Table S3: Age-at-death and sex classification of individuals recovered at Quebrada Chupacigarro cemetery |
| Age | n | % | Sex |
| M | F | Und. |
| Neo  | 29 | 43.2 | 0 | 0 | 29 |
| Inf | 16 | 23.9 | 0 | 0 | 16 |
| Ch | 2 | 3.0 | 0 | 0 | 2 |
| Ad | 3 | 4.5 | 1 | 2 | 0 |
| YA | 4 | 6.0 | 3 | 1 | 0 |
| MA | 10 | 14.9 | 7 | 3 | 0 |
| OA | 3 | 4.5 | 1 | 2 | 0 |
| Total | 67 | 100.0 | 12 | 8 | 47 |
| Age categories:Neo: Neonate, 0-1 yr; Inf: Infant, >1-5 yrs; Ch: Child, >5 - <12 yrs; Ad: Adolescent, 12-20 yrs; YA: Young Adult, >20-35 yrs; MA: Middle Adult, >35-50 yrs; OA: old Adult, >50 yrs. |

|  |
| --- |
| Table S4: Prevalence of trauma in Quebrada Chupacigarro cemetery: differences between groups† |
| Comparisons  | Significance\* |
| Neonates vs. Infants | ns |
| Neonates vs. Children | ns |
| Neonates vs. Adolescents | **0.039** |
| Neonates vs. Young Adults | ns |
| Neonates vs. Middle Adults | **<0.001** |
| Neonates vs. Old Adults  | **<0.001** |
| Infants vs. Children | ns |
| Infants vs. Adolescents | ns |
| Infants vs. Young Adults | ns |
| Infants vs. Middle Adults | ns |
| Infants vs. Old Adults  | ns |
| Children vs. Adolescents | ns |
| Children vs. Young Adults | ns |
| Children vs. Middle Adults | ns |
| Children vs. Old Adults  | ns |
| Adolescents vs. Adolescents | ns |
| Adolescents vs. Middle Adults | ns |
| Adolescents vs. Old Adults  | ns |
| Young Adults vs. Middle Adults | ns |
| Young Adults vs. Old Adults  | ns |
| Middle Adults vs. Old Adults | ns |
| Juveniles\*\* vs. Adolescents + Adults | **<0.001** |
| Males vs. Females | ns |
| Males vs. Undetermined\*\*\* | **<0.001** |
| Females vs. Undetermined | **<0.001** |
| †Considering all the observable trauma (antemortem and perimortem). In bold: statistically significant difference p<0.05. ns: non-significant. \*For chi-square test, expected frequencies less than 5 were considered acceptable after Yates' correction. \*\*Juveniles (<15 years). \*\*\*In this case Undetermined (U) corresponds to juveniles <15 years.  |

|  |
| --- |
| Table S5: Description of trauma in Quebrada Chupacigarro individuals |
| Id | Location | Age - sex  | Description  | Inferred category |
| ZAC 0485 |   | U-Neo | Healed fracture on the shaft (distal third) of 11th right rib compatible with direct blunt trauma. The lesion was possibly inflicted, due to location in a specific point. In the case of an accident more fractures would be expected.  | AM, ambiguous |
| ZAC 1037 | U17 | U-Neo | Depressed fracture of elongated (12 x 4 mm) irregular shape on the left frontal eminence with radiating fracture lines. The lesion is compatible with blunt force trauma.  | PM, intentional |
| ZAC 0872 | U17 | U-Inf | Penetrating perimortem fracture in left parietal with associated radiating fractures compatible with blunt force trauma.  | PM, intentional  |
| ZAC 0630 | U16 | U-Inf | Fracture of the 8th left rib at the shaft (middle third). This fracture shows early signs of bone proliferation and possibly is related to the cause of death.  | PM, ambiguous |
| ZAC 0698 | U16 | U-Inf | Comminuted depressed fracture with multiple radiating and concentric fracture lines on the right parietal bone, compatible with blunt force trauma. Bleeding stains in this bone. The 6th right rib shows possible perimortem fracture in the shaft (middle third).  | PM, intentional |
| ZAC 0856 | U17 | U-Ch | Comminuted fracture of occipital bone with four radiating fracture lines (the origin point is 20 mm above the Inion). Fractures of C1 located at the anterior arch and lamina linked to vertebral compression and possibly related with the occipital trauma. Fracture of left scapula that affects the medial border. Transverse fracture of right ulna at the distal third of the shaft. All these lesions are compatible with blunt force trauma. | PM, intentional |
| ZAC 0869 | U17 | M-Ad | Comminuted depressed fracture on right eminence of frontal bone, irregular shape (45 x 30 mm) with radiating fractures. One of these lines affects the right superciliary arch and orbital roof. The fracture is possibly related to the cause of death. Bleeding stains in the right periorbital region. Other possible perimortem fracture in the right parietal bone. Both lesions are related to blunt force trauma. | PM, intentional |
| ZAC 0531 | U20 | F-Ad | Fractures on the shaft of 8th and 9th right ribs. Fractures on medial border of both scapulae. These fractures are linked to blunt force trauma.  | PM, ambiguous |
| ZAC 1005 | U17  | M-YA | Healed fractures on one proximal phalanx of the right hand and 5th proximal foot phalanx. Penetrating fractures on vertebral bodies of T3 and T10 linked to sharp force trauma. Multiple transverse fractures on the shaft of 4th, 5th, 7th - 10th right ribs, compatible with blunt force trauma. Bleeding stains on occipital, femur, and tibia.  | AM+PM accidental and intentional, respectively |
| ZAC 0747 | U19 | F-YA | Healed fracture of nasal bones with deviation of the left segment. Healed fracture with shortened left clavicle in their lateral third. Healed fractures located near the angle of 8th, 10th and 11th left ribs, compatible with blunt force trauma that compromised the left side of the body. In the right-side 3rd and 4th ribs show shaft fractures (sternal third) in initial healing process. The left 4th metatarsal and right 3rd proximal phalanx show misaligned fractures.  | AM, intentional |
| ZAC 1437 | U19 | M-MA | Healed depressed fracture on left superciliary arch (10 x 5 mm) compatible with blunt trauma. Transversal healed fractures in left midshaft of ulna and left radius compatible with indirect trauma (e.g., falling onto an outstretched hand). Healed fractures in left metacarpals and phalanxes. Healed fractures in several ribs on the left side. Multiple non-healed transverse fractures on right ribs. Those lesions suggest blunt trauma. | AM+PM, accidental and intentional |
| ZAC 0853 | U17 | M-MA | Healed misaligned transverse fracture of right 3rd metatarsal.  | AM, accidental |
| ZAC 1011 | U17 | M-MA | Complete fracture of ischio-pubic ramus (bilateral) probably produced by blunt force trauma. Penetrating fracture of circular shape (20 mm diameter) located on right ilium blade compatible with blunt-sharp force trauma. Fractures of the shaft of right 3rd, 7th, and 8th ribs.  | PM, intentional |
| ZAC 1438 | U19 | F-MA | Depressed fracture on the articular surface of lateral condyle of right tibia, possibly by repetitive stress linked to a contralateral femoral degenerative disease. This fracture shows signs of healing. Healed oblique fracture of the distal shaft of left radius.  | AM, stress and accidental |
| ZAC 0361 | U15 | M-MA | Three depressed healed lesions on cranial vault. Two are located at both sides of the parieto-occipital suture, at quite the same location. The third is a suprainiac lesion. All these lesions seem to be linked to cranial modification device. Incomplete fracture on left radius related to sharp-blunt force trauma. Several fractures in C1 rings compatible with torsion. Both types of traumas suggest interpersonal violence.  | AM+PM, intentional |
| ZAC 1568 | U19 | M-MA | Healed fracture of nasal bones, healed fracture of left zygomatic bone. Healed fractures of at least three ribs on the right side and undetermined number of ribs on the left side. Penetrating fracture located on right parietal (oval shape, 31.5 x 27.5 mm), related to sharp-blunt force trauma. Penetrating fracture in right maxilla produced by lithic point/flake (the piece remains embedded in the right wall of pyriform aperture of the nose). Enamel fractures in upper left incisor. Fractures of right scapula. Fracture of humerus at the elbow joint. Fracture of humerus shaft. Fracture of both ulnae shafts. Fracture of both pubic bones. Fracture of left femur head and fracture of left fibula shaft.  | AM+PM, intentional |
| ZAC 0645 | U16 | F-MA | Incomplete healed fracture of right clavicle (inferior face with healing signals). Healed fracture in left naso-maxillary region. Non-healed fractures in 2nd, 6th - 12th left ribs at middle and (9th -12th) and distal (2nd, 6th - 8th) shafts. Fracture of distal shaft of left ulna (possible defensive lesion). Transverse fracture on right fibula shaft. Comminuted fracture in cranial base (ring fracture) that also affected C1 and C2. Longitudinal fracture of the right mandibular condyle and ramus. All these lesions are possibly linked to blunt force trauma and interpersonal violence.  | AM+PM, intentional |
| ZAC 0711 | U15 | F-MA | Three healed depressed fractures in cranial vault. The first is suprainiac, possibly related to cranial modificatory device. The second is at the left lambdoid suture and the third is at the right the lambdoid suture, these two lesions show oval shape and are compatible with blunt trauma produced by rounded objects. Healed burst fractures in vertebrae T10 to L1 probably caused by pathology (tuberculosis?). Multiple healed fractures in ribs 9th to 11th left at the vertebral third of the shaft. Fracture of left scapula at the body. Misaligned oblique fractures of the left ulna and radius shafts compatible with indirect trauma (e.g., falling onto an outstretched hand). Probable perimortem ring fracture in occipital. Probable perimortem fractures in 2nd - 7th left ribs, and 2nd to 7th right ribs. Both scapulae show probable perimortem penetrating fractures at the scapular body related to sharp-blunt force. The taphonomic damage does not allow adequate diagnoses. | AM+PM? accidental, stress/pathology and intentional |
| ZAC 1045 | U17 | M-MA | Comminuted fracture in right zygomatic arch and penetrating fracture of right temporal and sphenoid bones, with compromise of cranial base, compatible with blunt force trauma. Complete parasymphyseal fracture of mandible at the lower right canine, compatible with blunt force trauma. Multiple fractures in middle shaft of right 2nd and 4th – 8th ribs and proximal shaft of left 9th and 10th ribs, compatible with sharp-blunt force trauma. Depressed fractures of anterior-right face of vertebral body of L4 and L5, compatible with sharp-blunt force trauma. Fractures in the right pelvis. Depressed fracture in the superior face of the lateral end of right clavicle and penetrating fracture in body of right scapula, both compatible with sharp-blunt force trauma. Transverse fracture of right fibula at the midshaft. All these lesions are compatible with interpersonal violence. | PM, intentional |
| ZAC 0608 | U20 | F-OA | Pathological burst fracture on body of T11 related to possible tuberculosis and/or osteoporosis. Complete misaligned healed fracture on left ulna shaft. Perimortem fracture in right frontal bone, consistent with blunt force trauma.  | AM+PM, stress/pathology and intentional |
| ZAC 1008 | U17 | F-OA | Multiple fractures in the middle shaft of 5th - 9th left ribs. Fracture of pubic symphysis possibly related to blunt force trauma. Depressed comminuted fracture of right parietal linked to blunt force trauma. Enamel fracture in upper right incisor, probably related to cranial trauma. | PM, intentional |
| ZAC 5746 | U22 | M-OA | Healed depressed fracture at the right frontal eminence. Healed depressed fracture at the left frontal eminence near to the temporal line. Healed fractures of several right ribs (3 or 4 of them) between 7th and 10th (the fragmentariness of human remains did not permit precise diagnoses). Healed fracture of left 5th metacarpal. | AM, intentional |
| U#: excavation unit. AM: antemortem lesion; PM: perimortem lesion. |