

NAZCA REPTILIAN-LIKE (J-TYPE) TRIDACTYLS: REAPPRAISAL OF FINDINGS IN MILES PAPER (2022) BY DR. FUNG (2026)

By **Dr. K.H. Fung** (Hong Kong SAR, China)

October 2026

SECTION I: BACKGROUND

Clifford Miles self-published a paper entitled '*The Miles Paper*' in October 2022. (Website: TheMilesPaper.com also available in Tridactyls.org) where in part I of his paper he claimed '*A new family, genus, and species of Nazca aliens is described*'. This paper will focus on part I of his paper. For information, Part 2 of his paper dealt with UFO encounters.

Clifford Miles is a palaeontologist based in USA with special interest in dinosaurs. He was a retired CEO of Western Palaeontological Laboratories, Inc. (a commercial company founded in Utah in 1989, USA involved in fossil preparation, excavation and research).

Dr. Miles studied the Nazca tridactyl specimens using X-rays, CT scans, and DNA studies. His study includes 8 specimens (including 5 complete ones, 2 loose skulls and 1 without skull). The majority of his study was performed on named specimens '*Josephina*' aka '*Josefina*', '*Alberto*', '*Victoria*' and 2 loose skulls. Others include a juvenile and a young specimens (*name unknown*). Most of his findings were based on '*Josephina*'.

Dr. K H Fung is a medical doctor and a retired diagnostic radiology specialist based in Hong Kong SAR, China. Dr. Fung had served as clinical consultant radiologist in Pamela Youde Nethersole Eastern Hospital in Chai Wan, Hong Kong before his retirement. He has extensive clinical experience in CT scanning and interpretation with special interest in 3D medical visualisation. Dr. Fung happened to see an open invitation on the website of Tridactyls.org calling on international researchers to study both the open and restricted (with permission) released DICOM CT datasets of Nazca tridactyls and he volunteered to participate as an independent researcher in October 2025. He worked alone and has no connection with the Peruvian government nor researchers and he share no financial interest.

He studied the DICOM CT datasets of both the hominid M-type and the reptilian-like J-type tridactyls and published his findings in a number of articles posted on Tridactyls.org since November 2025. For the Nazca J-type tridactyls, his study includes '*Josefina*', '*Louisa*', '*Alberto*' and '*Victoria*'. His anatomical findings related to this study were based on complete specimens, namely '*Josefina*', '*Luisa*' and '*Alberto*'.

SECTION 2: FINDINGS IN GENERAL AGREEMENT

2.1 GENERAL

- The specimens studied are intact desiccated corpse with well-preserved skin, internal organs and bones covered in white powdery diatomaceous earth. The skin surface can be well seen on CT scan without any interference from the powdery diatomaceous earth.
- They are upright bipedal hominids with general body plan featuring head & neck, trunk, shoulder and pelvis girdles, upper & lower limbs, tridactyl hands & feet. (Figure 1)
- Skin show evidence of scale-like features resembling reptilians. Skin nodules are also noted. (Figure 2)
- Oval shaped reptilian-like eggs are present in the abdomen of some species showing unusually high CT density content (denser than compact bone). Structures are found inside the intact eggs suggestive of developing embryos. (Figures 3a,3b,28,29)
- Individual variations are found in details of facial, skull and skeletal features suggestive of young and adult specimens. (Figures 1,4)
- Long bones show mammalian features with dense cortex, trabeculated bones at either ends with bone marrow in between. (Figure 5)

2.2 HEAD & SKULL

- Skulls are elongated in antero-posterior direction. (Figure 6) The skulls and cranial capacities are disproportionately large in relation to the rest of the body.
- Flat forward-facing cordiform shaped face. (Figures 7,8)
- Prominent supra-orbital ridge (=Dr. Miles: prefrontal ridge). (Figures 7,8)
- Large forward looking and widely separated shallow eye sockets with prominent edge. Prominent sunken eyelids with raised edges. Elongated slanting long eyeslits and corresponding orbital fissures. (Figures 7,8)
- Midline nasal ridge between orbits. (Figure 8)
- Small nose with nostrils that may be absent in some specimens. (Figures 4,7,8)
- No nasal cavity nor paranasal sinuses.
- Small mouth with hinged upper and lower mouth plates (=Dr. Miles: premaxillary and prementary plates likely for nibbling and sucking fluid). (Figure 9)
- No separate mandible (=Dr. Miles: small fused mandible). No teeth. (Figures 6,9)
- Series of small and large bony pits (*note: Dr. Fung presumed these to be heat pits for infrared detection) on either side of the face (=Dr. Miles: lateral sinuses). The middle of the larger one is related to the otic capsule. (Figure 6)
- Elongated pronounced bilateral mastoids. Small bilateral temporal processes. (Figure 6)
- Foramen magnum in mid third of skull base. (Figure 10)
- Inverted triangular-shaped occipital bone. (Figure 4)
- Occipital foramen (*note: this feature is only noted in 'Josefina')
- Bilateral smooth bony concavity anterior to occipital bone (=Dr. Miles: posterior parietal curves). (Figure 8)

SECTION 2: FINDINGS IN GENERAL AGREEMENT (contd.)

2.2 HEAD & SKULL (contd.)

- Converging temporal lines on top of skull. (=Dr. Miles: *frontal ridges*) (Figure 11)
- Occipital sinuses or cavities within occipital skull bone. (=Dr. Miles: *occipital cavity*) (*note: in addition, Dr. Fung noted widespread multiple sinuses within skull bones, presence of internal occipital crest). (Figures 10,12)
- Otic capsule (=Dr. Miles: *pyramid*) with dense bone in anterior third of skull containing vestibule. (*note: Dr. Fung also described internal auditory meatus and semi-circular canals) (Figure 12) In 'Alberto' the left otic capsule was displaced upwards and rotated. (*note: Dr. Fung also noted right otic capsule was absent and replaced by thin bony plate). (Figures 13a, 13b, 13c)
- No external ears.
- Presence of superior sagittal sinus inside skull bone. (Figure 14)
- Presence of residual brain remnant in some specimens. (Figure 14)

2.3 LIMBS

- In the long bones, there is evidence of dense bony cortex and trabeculae with bone marrow (i.e. mammalian rather than avian bone architecture). (Figure 5)
- Unique single bone in forearms and lower legs. (Figure 15) (*note: Dr. Fung noted widening of distal long bones showing "Erlenmeyer flask" appearance.)
- Slender long limbs with disproportionately longer proximal bones. There is asymmetry between right and left side. (Figures 1,15)
- Distal tibial tubercle forming part of heel. (*note: Dr. Fung noted this feature only in 'Josefina' where the distal tibia articulates anteriorly and indirectly via soft tissue with a single tarsal bone. 'Luisa' and 'Alberto' show flat ending of distal tibial bone articulating directly with a flat single tarsal bone forming the heel). (Figure 16)
- Tridactyl hands and feet showing equally-spaced 3 long digits of almost equal length. There is absence of short opposing thumb, palm nor forefoot. (Figures 17,18)
- Single carpal and tarsal bones. (*note: Dr. Miles identifies the single tarsal bone as a cavity with bone marrow) (Figures 16,17)
- Knee and elbow joints lacking congruent articulating surfaces with irregular bones and intervening soft tissue. (*note: Dr. Miles referred to the intervening structures as "cavity cylinders") (Figure 19)
- Evidence of trauma (e.g. shoulder dislocation, hip fracture). (Figure 20)

SECTION 2: FINDINGS IN GENERAL AGREEMENT (*contd.*)

2.4 GASTRALIA AND RIBS

- Presence of gastralria with short paired horizontal side ribs. (*Figure 21*)
- Multiple broken dislocated ribs penetrating into spinal canal. (*Figure 22*)

2.5 SPINE

- Lack of atlas/axis in first segment of cervical spine.
- Lack of posterior elements (transverse processes or neural arch) in cervical spine. Primitive shape of cervical spine. (=Dr. Miles: *centra*) (*note: Dr. Fung noted different numbers of vertebra in different specimens and unevenly spaced vertebrae suspicious of extensible neck) (*Figure 23*)
- Upper elements of thoracic spine do not bear ribs. Lack of conventional vertebral bodies in upper thoracic spine, being replaced by bar shaped anterior elements in 'Josefina' and 'Alberto'. (= Dr. Miles: *centra plates*). (*Figures 23,24*) (*note: in addition, Dr. Fung noted fusion of lower thoracic spine forming block vertebra)
- Lack of conventional lumbar vertebrae. Rest of thoracic spine show conventional complex interlocking design. (*note: Dr. Fung noted abnormally dense intervertebral disks) (*Figure 22,23*)
- Sacrum with sacro-iliac joints present but lack of coccyx. (*Figures 22,27*)
- Voluminous spinal canal with wide opening ending inferiorly covered by thin skin. Upper spinal canal tapering and does not reach cervical region. (*Figures 18,22,23*)
- Evidence of trauma in spine and intervertebral disks. (*Figure 23*)

2.6 SHOULDER AND PELVIC GIRDLE

- Furcula articulating in midline with absence of manubrium and sternum. (*note: =Dr. Miles: *clavicles*) (*Figure 26*)
- Prominent scapula articulating with furcula via acromial process. (*note: in addition, Dr. Fung noted fusion of medial edge of scapulae to spinous process of upper thoracic spine, Dr. Miles noted hook-shaped "Korotkov process" in scapula posteriorly). (*Figures 15,26*)
- Sacrum articulating with oval shaped iliac bones. Lack of complete pelvic ring (including lack of ischium and pubic bones). (*Figures 22,27*)
- Vertical iliac bones showing variable degree of asymmetrical with diverging angles in different specimens. Iliac bone bears small linear hip joint sitting on disproportionately large femoral head. Not conventional ball and socket hip joint. (*Figures 1,5,15,20,27*)

SECTION 2: FINDINGS IN GENERAL AGREEMENT (*contd.*)

2.7 INTERNAL ORGANS

- Some specimens contains up to 5 oval-shaped eggs of different sizes that are hyperdense on CT (more dense than cortical bone) in their bulging abdomen. Eggs show inhomogenous content suspicious of developing embryo. There is presence of an elongated structure in left side of abdomen adjacent to a tiny egg extending to perineum suggestive of oviduct. The eggs are surrounded by branching soft tissue content. (*Figures 3a,3b,28,29*)
- Tubular heart / aorta in right side of thorax and abdomen (**note: Dr. Fung also identified large longitudinal vein in thorax and abdomen and venous structures in neck of 'Josefina'.* (*Figure 30*))

2.8 METALLIC IMPLANTS

- Sophisticated dumbbell-shaped metallic implants at skin level anteriorly below the furcula in 'Josefina' and 'Luisa'. (*Figures 1,15,21,31*)
- Small flat moon shaped implant over injured right hip in 'Alberto' associated with bone regrowth. (*Figure 1,20,31*)

SECTION 3: MAJOR DISCREPANCIES

3.1 Shape of Foramen Magnum

Dr. Miles: Square-shaped.

Dr. Fung: Oval. *(Figure 10) (*note: Square-shaped foramen magnum was observed by Dr. Miles on external surface of loose skulls. Dr. Fung observed oval shaped foramen magnum internally in full intact specimens.)*

3.2 Basis for interpretation of skull bones and sutures

Dr. Miles: Prefrontal bone concept. *(Figure 32)*

Dr. Fung: Anterior and posterior parietal bones with accessory parietal suture concept. *(Figure 32) (*note: Prefrontal bone is skull bone separating the lacrimal bone from frontal bone in many tetrapod skulls. It is completely absent in human, modern mammals and birds. No lacrimal bone can be identified in J-type tridactyls.)*

3.3 Ring shaped pattern on top of skull

Dr. Miles: Concentric growth lines on top of skull.

Dr. Fung: CT scan artefacts (stepping artefacts). *(*note: stepping artefacts are most evident at top of head when thick CT cuts are used for 3D reconstruction. The artefacts are less obvious with thin cuts.)*

SECTION 4: CONCLUSION

Multiple specimens of very well-preserved dehydrated corpses (including complete specimens) in the Nazca J-type tridactyls offer an excellent opportunity to study both the external morphology (without being obscured by diatomaceous earth) as well as detail internal anatomy of these beings by employing modern high resolution CT scanning combined with sophisticated 3D image reconstruction capabilities. Finding can also guide physical examination enhancing effectiveness. Open availability of these invaluable CT datasets enables documentations, advance level interpretation and open verification of findings allowing comparison by researchers and experts worldwide, enhancing transparency. Experts from different fields can participate and exchange their findings and interpretation, avoiding tunnel vision inherent in over-specialized fields.

Although the J-type tridactyls and M-type tridactyls (e.g. 'Maria') are bipedal hominids sharing similar findings of 3 fingers and 3 toes, their anatomical features are entirely different and a class of its own, entirely unlike human anatomy too. In particular, they have single forearm and leg bones, unique skull lacking separate sinuses and nasal compartments, lack separate jaw and teeth, otic capsules located anteriorly, centrally located foramen magnum in skull base, absence of complete pelvic ring, unconventional joints, together with unconventional spine and spinal cord configurations. These combination of features are almost unknown or unheard of in human or animals. Furthermore they show both reptilian features (e.g. skin, eggs) as well as mammalian features (e.g. bones). They bear metallic implants (how and why?) and the finding of hypodensity in the egg contents are currently unresolved mystery.

Dr. Clifford Miles report provides a very detailed analysis and anatomical description of these J-type tridactyls based on CT findings and provided his interpretation as a seasoned paleontologist. I had attempted to analyse the CT scan findings as a medical doctor and radiology specialist leaning on my extensive clinical experience in analysis and interpretation of CT scan findings in both normal and diseases states in different age groups in human beings. Obviously my experience in other fields is limited or absent but CT interpretation is an expertise that I had acquire in my whole career.

Despite significant differences in background, surprisingly I share many of the findings with Dr. Miles as to the detailed anatomy of the J-type tridactyls as per outlined in this article. The findings are solid and scientific. The highly detailed anatomical findings we have brought forward together can provide a firm basis for future research on the subject of the J-type tridactyls. As scientists, simply disregarding such findings before our very eyes as hoax would be a great loss to science and will forfeit our primary quest for knowledge and the need to seek out the truth. In particular, the implications of these findings would be of great significance in many fields including human history, evolution, paleoanthropology, anthropology, functional anatomy, biology, reproduction, origin of species, species extinction, hybridization, gene manipulation, adaptation to earth environment, ufology etc.

Yes there are findings that we do not understand or explain with our current knowledge. There are points of variance in observation, nomenclature, interpretation or inference. Yet I sincerely hope that these could offer opportunities for further research studies to clear away the clouds.

How would this group of J-type tridactyls relates to other types of tridactyls found in Peru e.g. M-type or S-type tridactyls and how they interact with ancient human civilization remained to be explored too. There is long path ahead calling for more open and independent researches, particularly from academics and research scientists worldwide. It is important to humanity.....

SECTION 5: SUMMARY TABLE OF COMPARISON

GENERAL		
	Dr. Fung	Dr. Miles
Upright bipedal	Yes	Yes
Combined reptilian and mammalian features	Yes	Yes
Dinosaur features	No	Yes
Reptilian skin (scale-like, nodularities)	Yes	Not mentioned

FACE		
	Dr. Fung	Dr. Miles
Prominent prefrontal ridge	Yes	Yes
Absent glabella	Yes	Yes
Forward looking eyes	Yes	Yes
Large shallow eye sockets	Yes	Yes
Slanted eyelids and orbital fissure	Yes	Yes
Nasal ridge	Yes	Yes
Nasal openings	Not all (<i>some specimens</i>)	Yes
Multiple large and small facial bony depressions	Yes (<i>=heat pits</i>)	Yes (<i>=lateral sinuses</i>)

SECTION 5: SUMMARY TABLE OF COMPARISON

SKULL

	Dr. Fung	Dr. Miles
Large elongated skull	Yes	Yes
Frontal bone	Yes	Prefrontal bone
Coronal suture	Yes	Frontal suture
Parietal bone	Yes	Frontal bone
Accessory parietal bone	Yes	Parietal bones
Occipital bone	Yes	Yes
Intraparietal suture	Yes	Coronal suture
Sagittal suture	Yes (Only between intraparietal bones)	Yes
Lambdoid suture	Yes	Yes
Metopic suture	No	Yes
Fused sutures	Yes	No
Circular ridge lines	No (=CT step artefacts)	Yes
V-shaped temporal lines	Yes	Yes (=frontal ridges)
Foramen magnum shape	Oval	Square
Foramen magnum location	Central	Central
Occipital foramen	Yes (Josefina only)	Yes
Superior sagittal sinus	Yes	Yes
Internal occipital crest	Yes	Not mentioned (paired occipital cavities)
Sinuses within skull	Yes	Yes
Long narrow mastoid processes	Yes	Yes
Temporal process	Yes	Yes
Posterior parietal curve	Yes	Yes

SECTION 5: SUMMARY TABLE OF COMPARISON (*contd.*)

SKULL (*contd.*)

	Dr. Fung	Dr. Miles
No nasal cavity	Yes	Yes
No paranasal sinuses	Yes	Yes
No external ears	Yes	Yes
Otic capsules	Yes	Yes (=pyramids)
Internal auditory meatus	Yes	Not mentioned
Vestibule	Yes	Not mentioned
Semi-circular canals	Yes	Not mentioned
Absent teeth	Yes	Yes
Upper and lower mouth plates	Yes	Yes (=premaxillary & prementary plates)
No separate mandible	Yes	Yes (=Fused mandible)
Displaced otic capsule in Alberto	Yes	Yes (=displaced pyramid)

SECTION 5: SUMMARY TABLE OF COMPARISON *(contd.)*

LIMBS		
	Dr. Fung	Dr. Miles
Tridactyl hands	No metacarpal	Metacarpal+phalanges
Tridactyl feet	No metacarpal	No metacarpal
Single carpal bone	Yes	Yes
Single tarsal bone	Yes	Absent
Single forearm bone	Yes	Yes
Single leg bone	Yes	Yes
Long proximal limb bones	Yes	Yes
Erlenmeyer flask shaped long bones	Yes	Not mentioned
Mammalian bone architecture	Yes	Yes
Furcula	Yes	Clavicles
Scapula	Fused scapula	Not mentioned
No complete pelvic ring	Yes	Yes
No ball and socket joint in hips	Yes	Yes
Not direct bone contact in elbows	Yes	Yes
Not direct bone contact in knees	Yes	Yes

SECTION 5: SUMMARY TABLE OF COMPARISON (*contd.*)

SPINE		
	Dr. Fung	Dr. Miles
No posterior elements in cervical spine	Yes	Yes
Variable number of cervical vertebrae	Yes	Not mentioned
Wide spinal canal	Yes	Yes
Wide open lower end of spinal canal	Yes	Not mentioned
Ribs penetrating spinal canal	Yes	Yes
Anomalous configuration of upper thoracic vertebral bodies	Yes	Yes
Fused lower thoracic vertebral bodies	Yes	Not mentioned
No coccyx	Yes	Yes
Sacro-iliac joint present	Yes	Yes
Asymmetrical iliac bone flaring	Yes	Yes

SECTION 5: SUMMARY TABLE OF COMPARISON (*contd.*)

THORACIC CAGE

	Dr. Fung	Dr. Miles
Gastralia	Yes	Yes
Absent manubrium and sternum	Yes	Yes
Paired horizontal ribs	Yes	Yes

SPINAL CORD

	Dr. Fung	Dr. Miles
Present behind cervical vertebrae	Yes	Yes
Forming loop at thoracic level	Yes	Yes
Divided into 2 cords	Yes	Yes

VASCULAR

	Dr. Fung	Dr. Miles
Tubular heart	Yes	Yes
Aorta	Yes	Yes
Major vein	Yes	Not mentioned
Neck veins	Yes	Not mentioned

SECTION 5: SUMMARY TABLE OF COMPARISON (*contd.*)

REPRODUCTIVE		
	Dr. Fung	Dr. Miles
Oval eggs	Yes (5 numbers)	Yes (4 numbers)
Different stages of eggs	Yes	Yes
Eggs with hyperdense content	Yes	Yes
Soft egg shells	Yes	Yes
Oviduct	Yes	Yes
Cloaca	No	Yes

SECTION 6: ACKNOWLEDGEMENT

Special thanks to Gonzalo Chavez and Tridactyl.org for granting permission to access the DICOM CT datasets of the tridactyls for study and for posting the findings in their website.

SECTION 7: REFERENCES

- Clifford Miles. “*The Miles Paper*” 2022. (Website: TheMilesPaper.com or Tridactyls.org)
- K H Fung “Comparative anatomy between the hominid ‘M-type’ tridactyls and reptilian ‘J-type’ tridactyls” 2026 (Website: Tridactyls.org)
- K H Fung “Llama skull versus J-type reptilian tridactyl skull: the truth?” 2026 (Website: Tridactyls.org)

SECTION 8: ILLUSTRATIONS

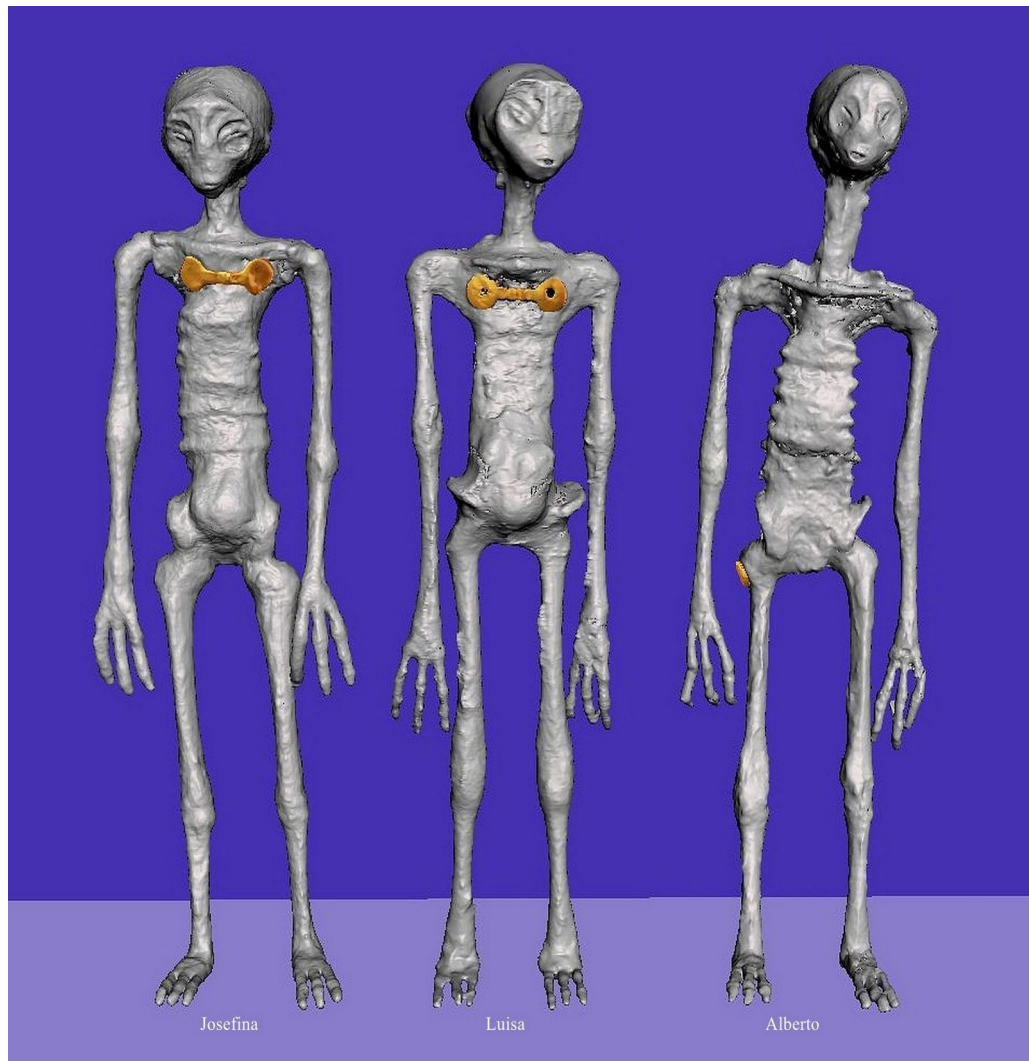


Figure 1: 3D CT of '*Josefina*', '*Luisa*' and '*Alberto*' showing the relative sizes and proportions of body parts and presence of individual variations. '*Josefina*' and '*Luisa*' bear multiple eggs in their bulging abdomen. Proximal long bones are relatively longer than distal bones. Note the extra-long neck of '*Alberto*'. The variable length of the neck in different specimens suggested that the neck can be extended and retracted.

SECTION 8: ILLUSTRATIONS

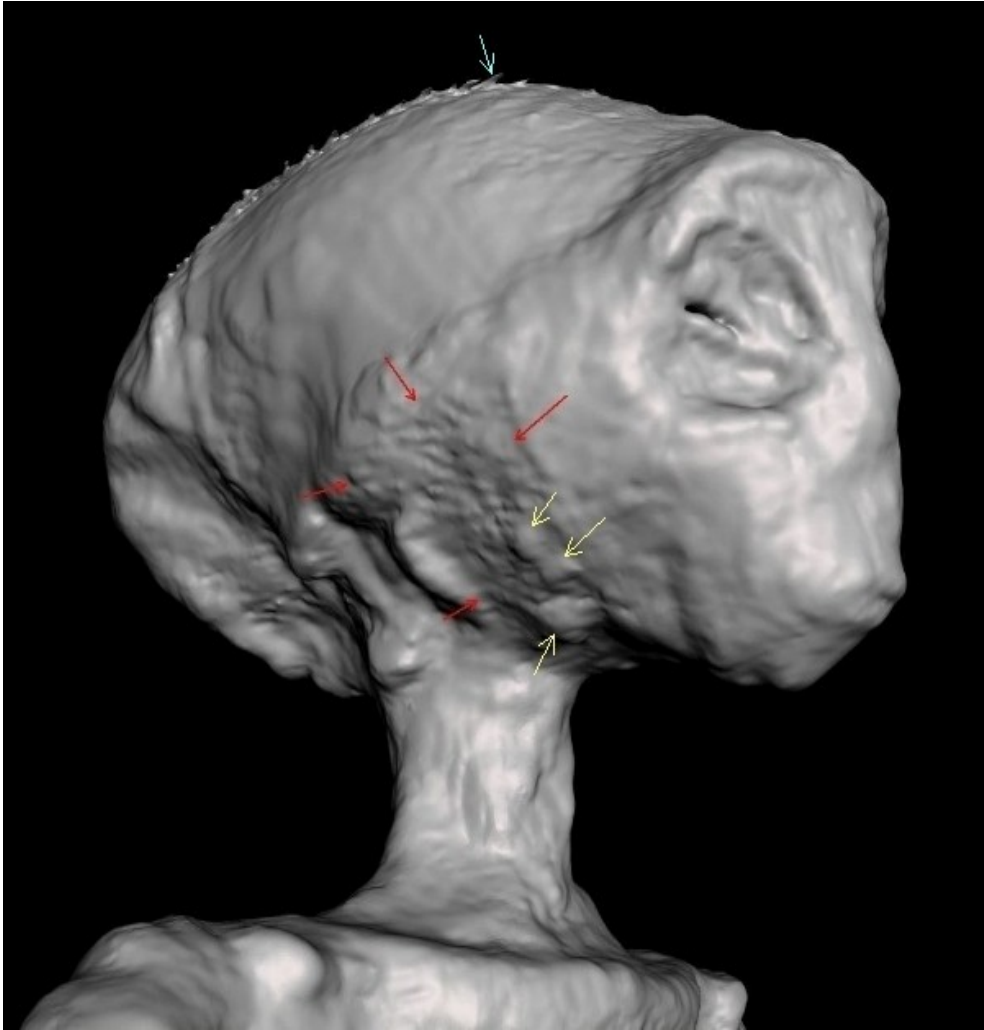


Figure 2: 3D CT of 'Josefina' showing scale-like reptilian skin (*red arrows*). Tiny bristles (*blue arrow*) are noted in the top part of the head of 'Josefina' but not in other specimens. Skin nodules (*yellow arrow*) can be found.

SECTION 8: ILLUSTRATIONS

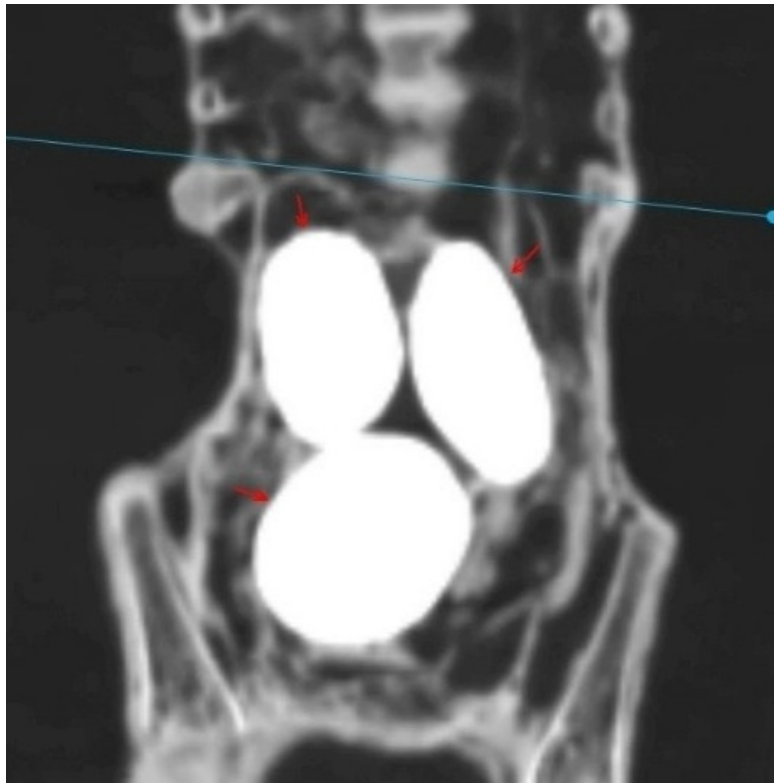


Figure 3a: 2D coronal CT scan showing presence of multiple oval shaped eggs of varying sizes in the abdomen of '*Josefina*'. The content of the eggs show CT value well above that for cortical bone. Chemical analysis would be interesting to rule out any possibility of heavy metal such as copper or lead content.

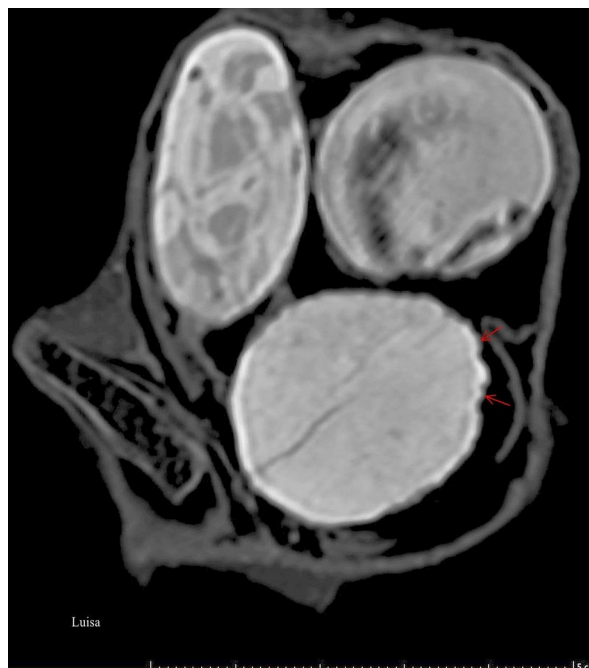


Figure 3b: 2D coronal CT scan showing details of eggs in abdomen of '*Luisa*' using selective window settings. Note the hyper-dense thin shell showing corrugated appearance (*red arrows*) suggestive of soft shell. Note contents inside the eggs that could be suggestive of developing embryos.

SECTION 8: ILLUSTRATIONS

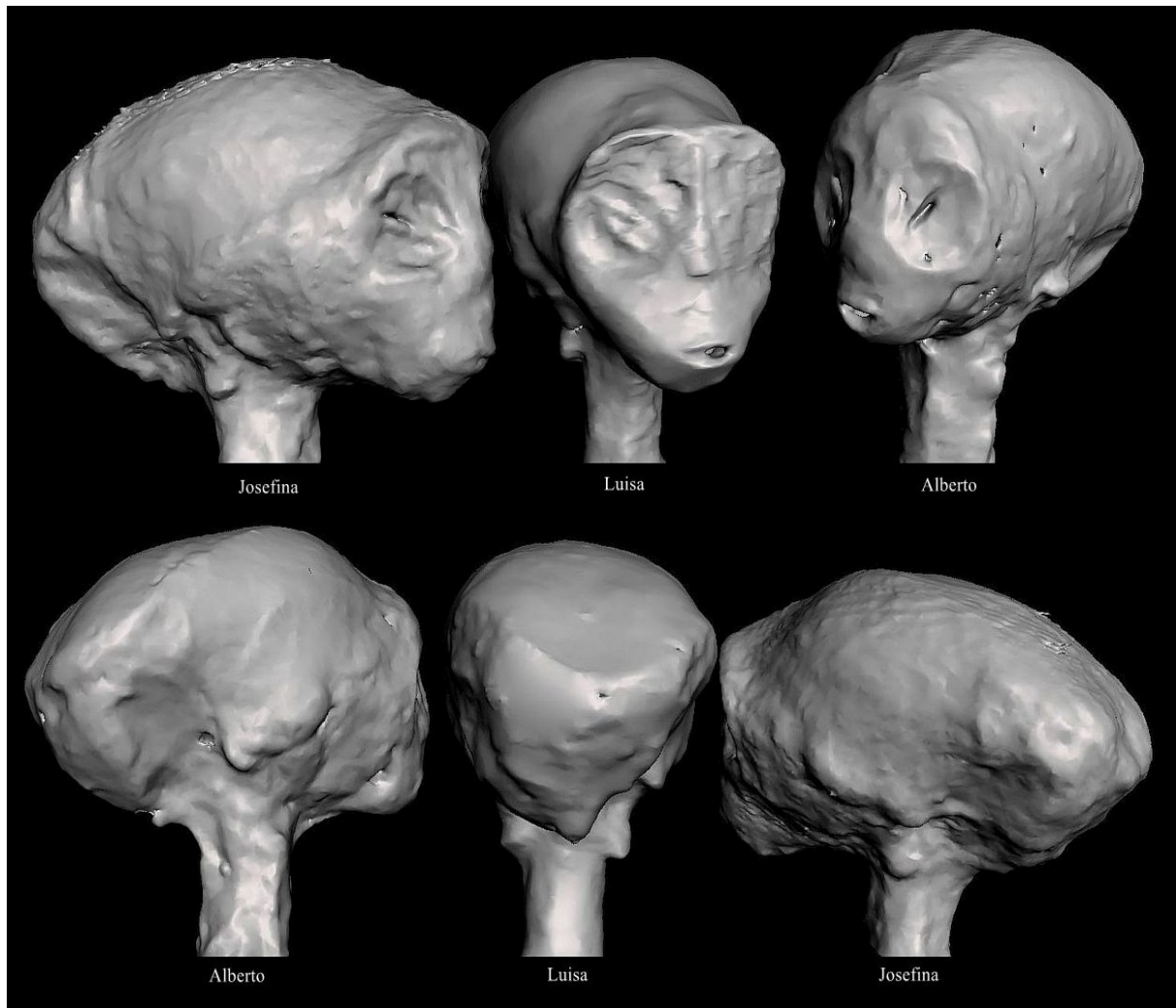


Figure 4: 3D CT showing variations in head and facial features between '*Josefina*', '*Luisa*' and '*Alberto*'. Note the triangular-shaped occiputs. '*Alberto*' seemed to be a younger individual.

SECTION 8: ILLUSTRATIONS

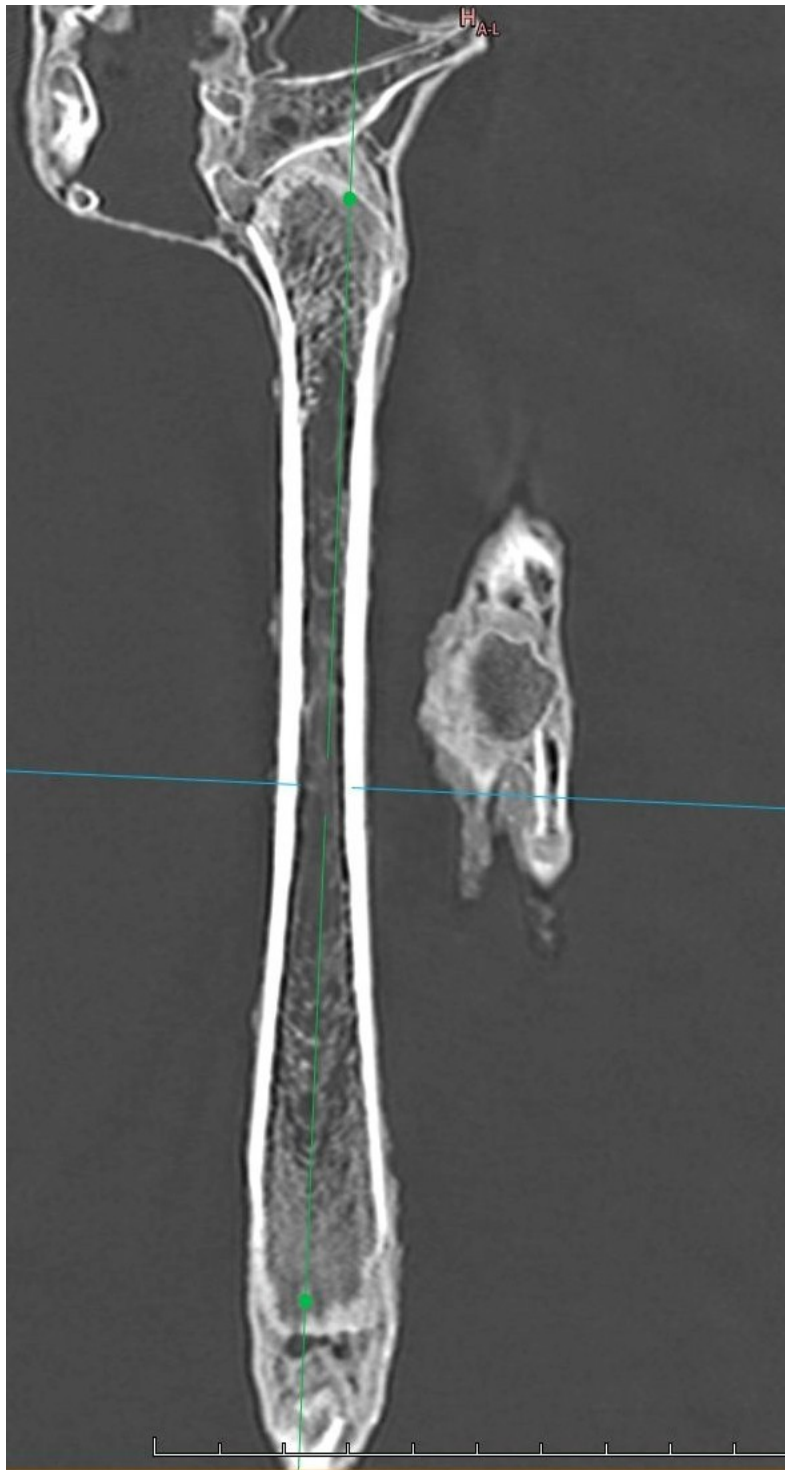


Figure 5: 2D sagittal CT scan of '*Josefina*' showing the left hip and femur. With correct window settings on CT, the bone marrow and trabecular content enclosed by the dense thick cortex can be well seen conforming to mammalian bone architecture, ruling out proposal of hollow / avian bone. Note the single carpal bone at the side.

SECTION 8: ILLUSTRATIONS

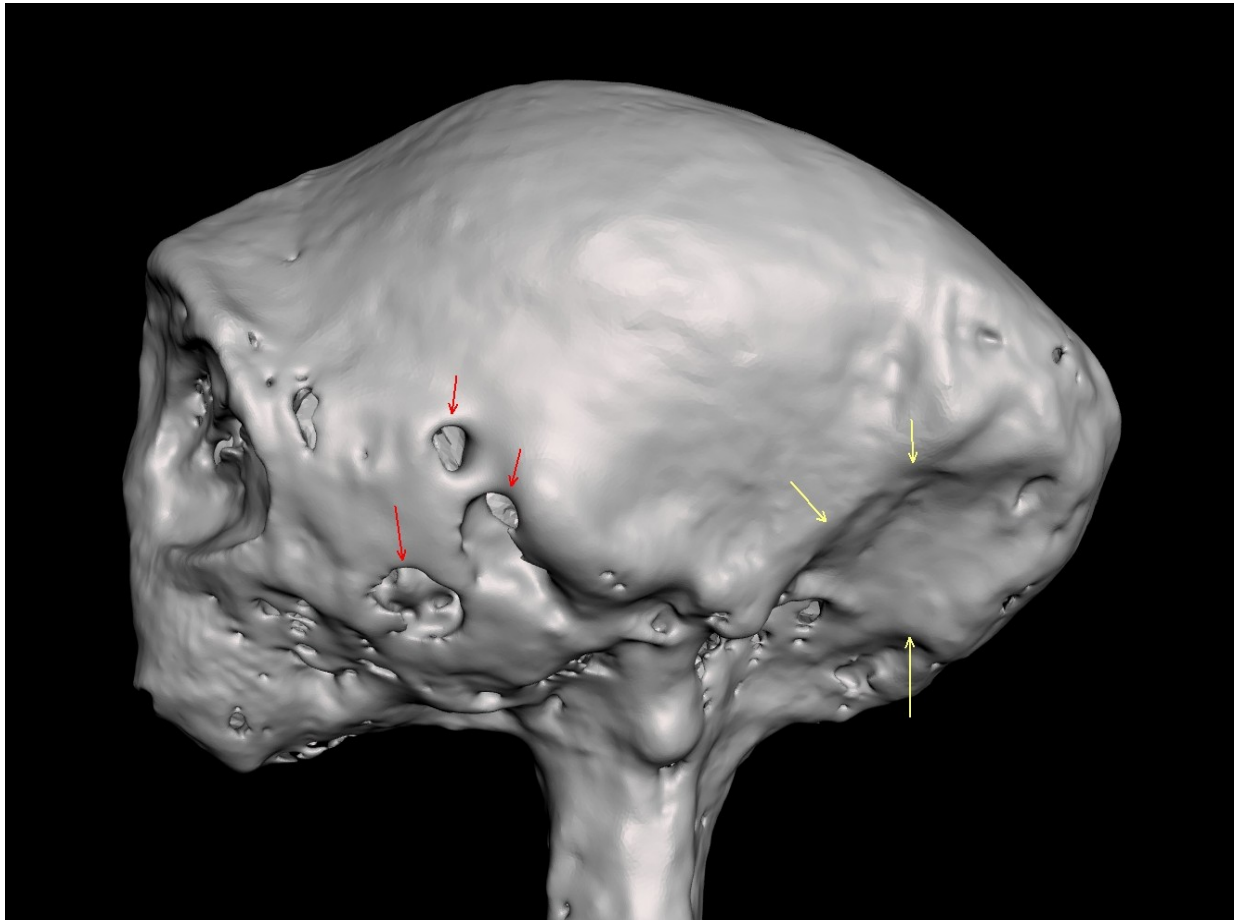


Figure 6: 3D CT showing left lateral view of skull of '*Josefina*'. Note the elongated skull in the antero-posterior direction, smooth convex skull vault lacking externally visible coronal and sagittal sutures. The neck is centred over mid portion of the skull base. Small temporal processes and elongated mastoid processes are noted in the skull on either side of the neck. There are bony depressions (*red arrows*) postulated by Dr. Fung to be heat pits with infrared detection capability on either side antero-inferiorly (*=Dr. Miles: lateral sinuses*). Large deep bony concavity (*yellow arrows*) is noted anterior to the occipital bone.

SECTION 8: ILLUSTRATIONS



Figure 7: 3D CT showing frontal view of face of '*Josefina*'. Note the cordiform-shaped face, very large orbits with slanting eye-slits, nose with absent nostril, small mouth with pointed chin. The supra-orbital ridge is unusually prominent in '*Josefina*'.

SECTION 8: ILLUSTRATIONS

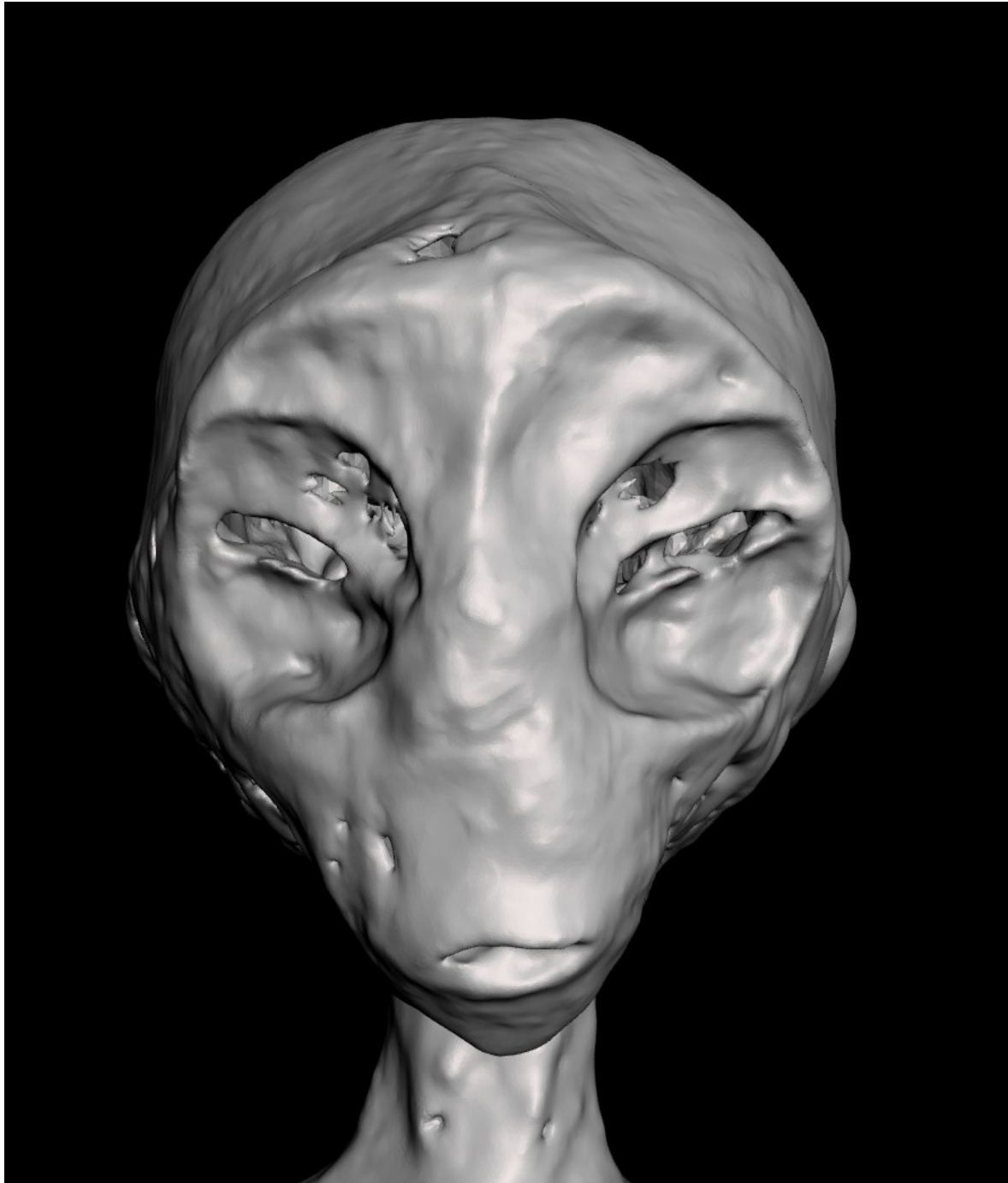


Figure 8: 3D CT showing frontal view of facial bones of '*Josefina*'. Note the nasal ridge between the very large orbits with slanting orbital fissures matching the eye-slits, small nose with absent nostril, small mouth with pointed chin. Bone thinning producing an apparent opening due to volume averaging CT artefact is noted in medial-superior parts of orbits and in supra-orbital ridge. The thick skin in the neck shows relatively high CT density value obscuring the neck bones.

SECTION 8: ILLUSTRATIONS

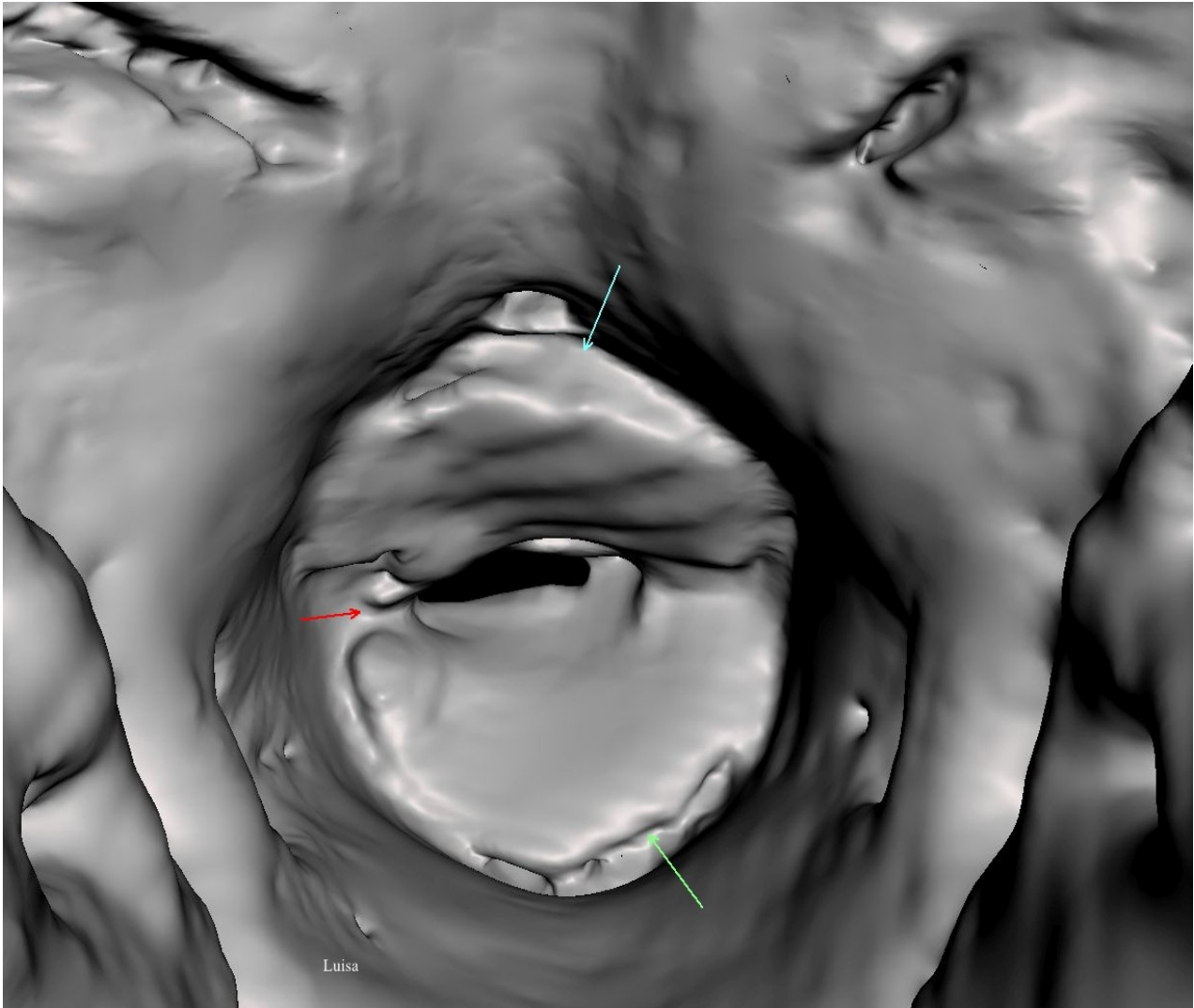


Figure 9: Virtual reality 3D view of inside of mouth of '*Luisa*' showing the upper and lower mouth plates (*green arrows*) with hinge joint at the side (*red arrow*). No teeth nor separate mandible is found.

SECTION 8: ILLUSTRATIONS

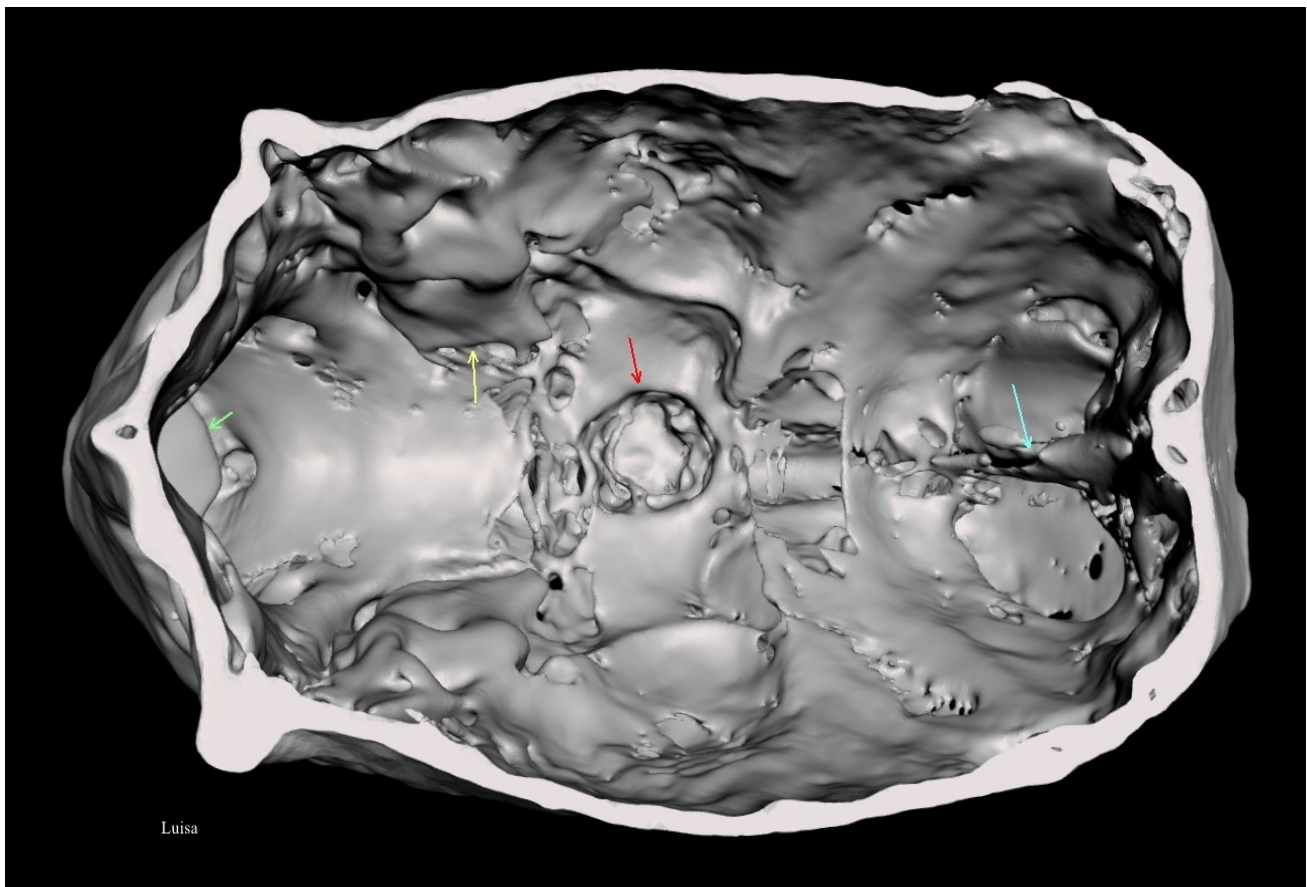


Figure 10: 3D CT showing cut section of base of skull of '*Luisa*'. Note the oval shaped foramen magnum (*red arrow*) in the mid portion of the skull base instead of posteriorly (e.g. in M-type and human). The inferior mouth plate (*green arrow*) is visible anteriorly and the internal occipital crest (*blue arrow*) is noted posteriorly separating 2 bony concavities in the occipital bone.

SECTION 8: ILLUSTRATIONS

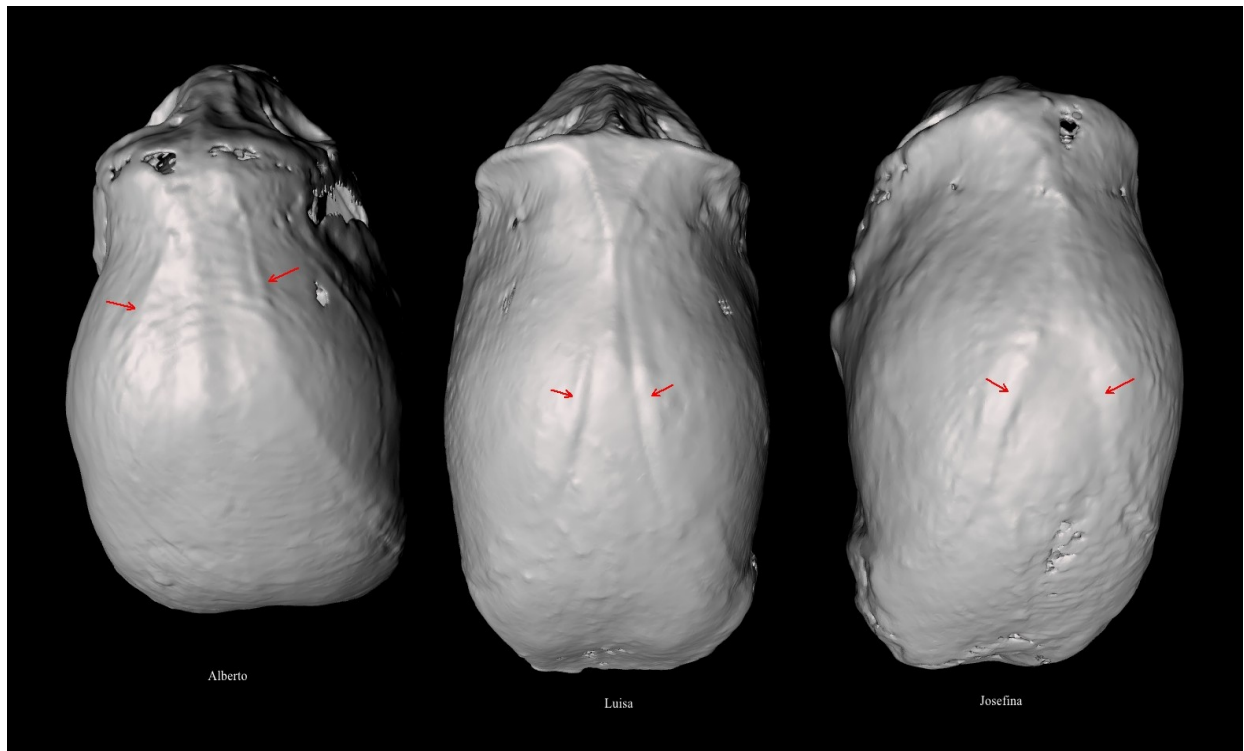


Figure 11: 3D CT showing top of skulls of '*Alberto*', '*Luisa*' and '*Josefina*'. Note the absence of externally visible coronal and sagittal sutures. Bony ridges converging anteriorly representing temporal lines (for muscle insertion) (*red arrows*) are found showing different configurations in the 3 specimens.

SECTION 8: ILLUSTRATIONS

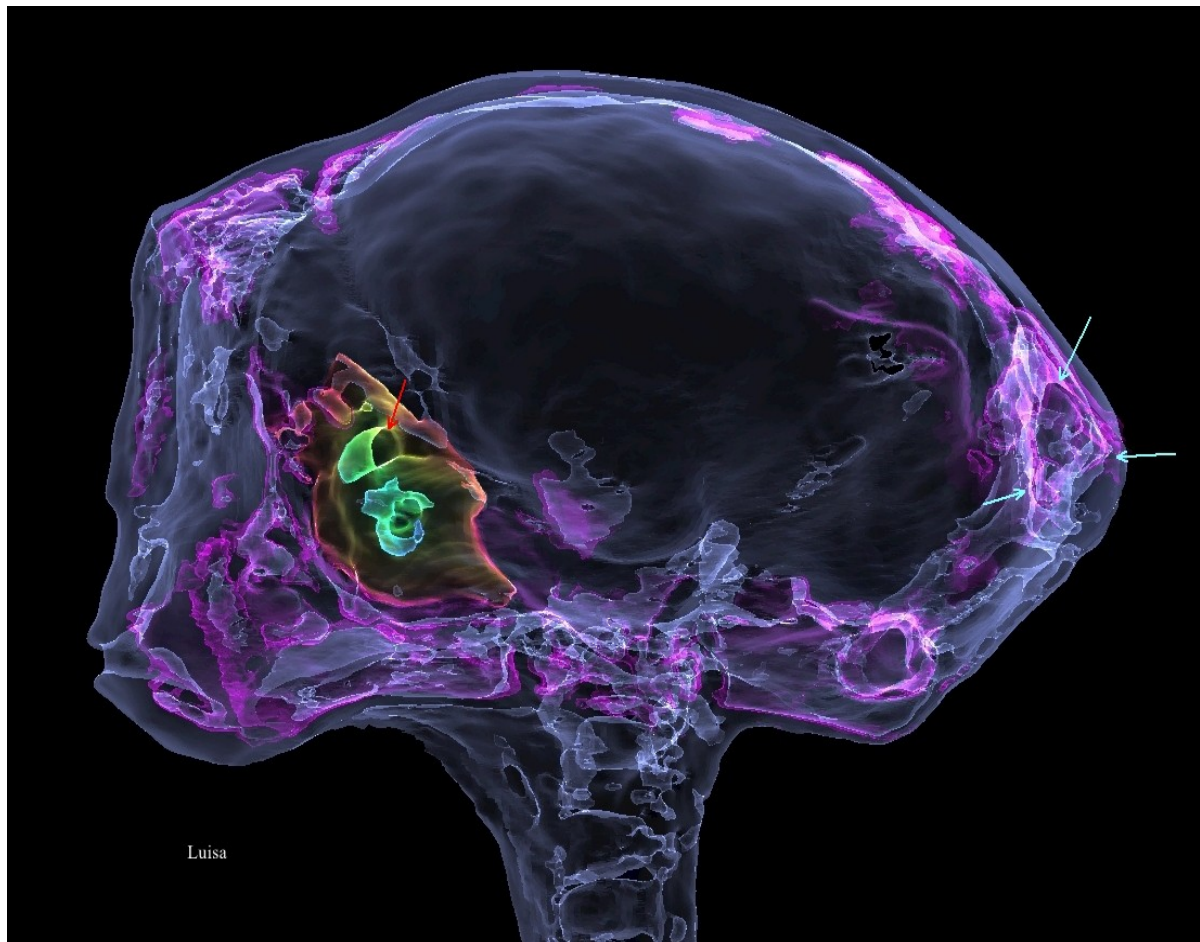


Figure 12: Left lateral view of 3D CT showing skull of 'Josefina' in semi-transparency. Note the presence of numerous sinus spaces within the skull (*in violet*). A prominent sinus space (*blue arrow*) with bone thinning is noted in the occipital region. The otic capsule (*in red*) is located antero-inferiorly showing presence of internal auditory meatus (*red arrow*) above the vestibule bearing semi-circular canals below (*in green*).

SECTION 8: ILLUSTRATIONS

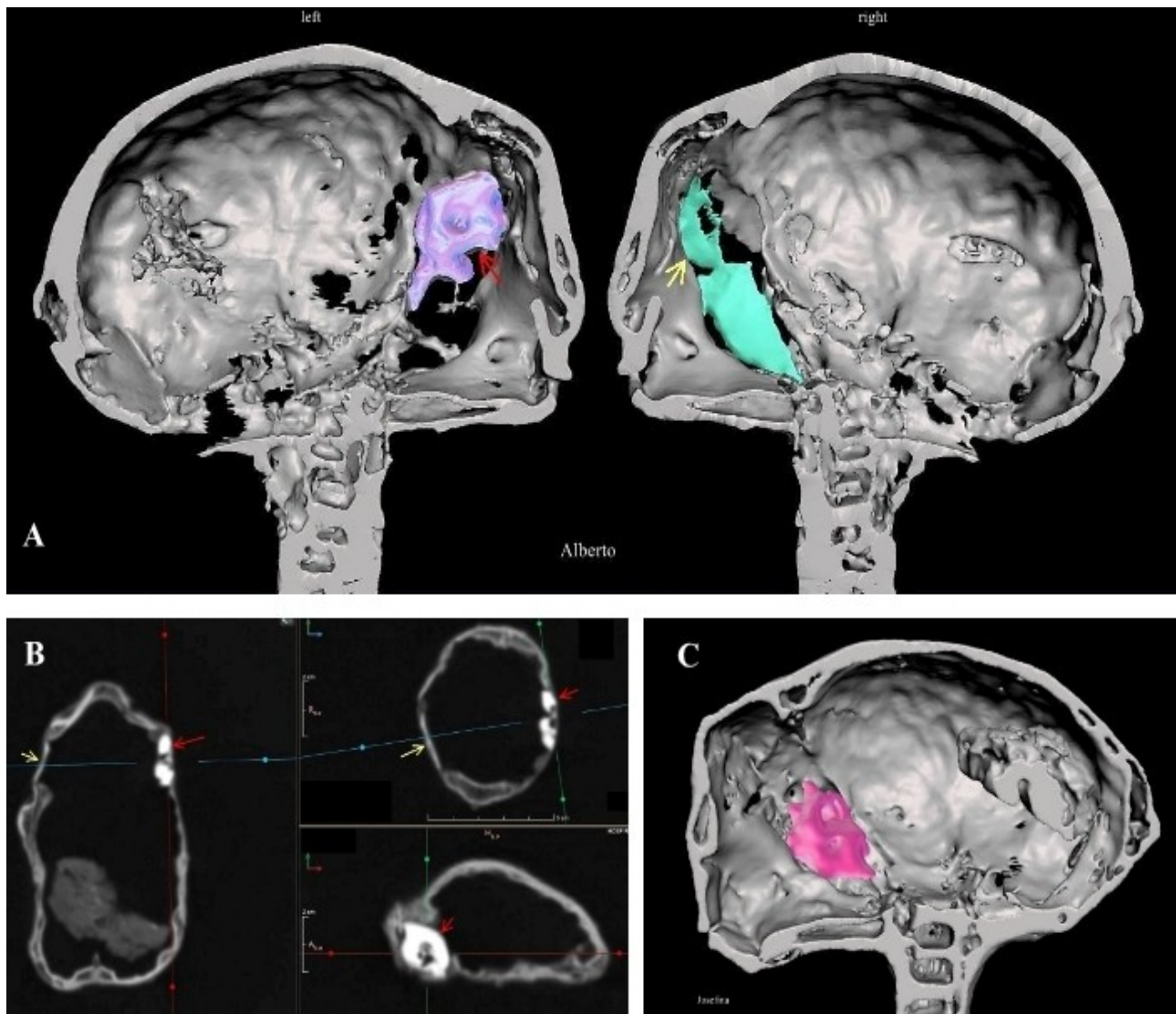


Figure 13A: 3D CT showing inside view of right and left halves of skull of 'Alberto'. Note the displaced and rotated left otic capsule (*red arrow*) and the replacement of the absent right otic capsule by a thin bony plate (*yellow arrow*).

Figure 13B: 3-plane 2D multiplanar CT scans of 'Alberto' showing displaced left otic capsule (*red arrow*) and thin bony plate replacing right otic capsule.

Figure 13C: 3D CT showing location and appearance of right otic capsule (*in pink*) of 'Josefina' for comparison.

SECTION 8: ILLUSTRATIONS

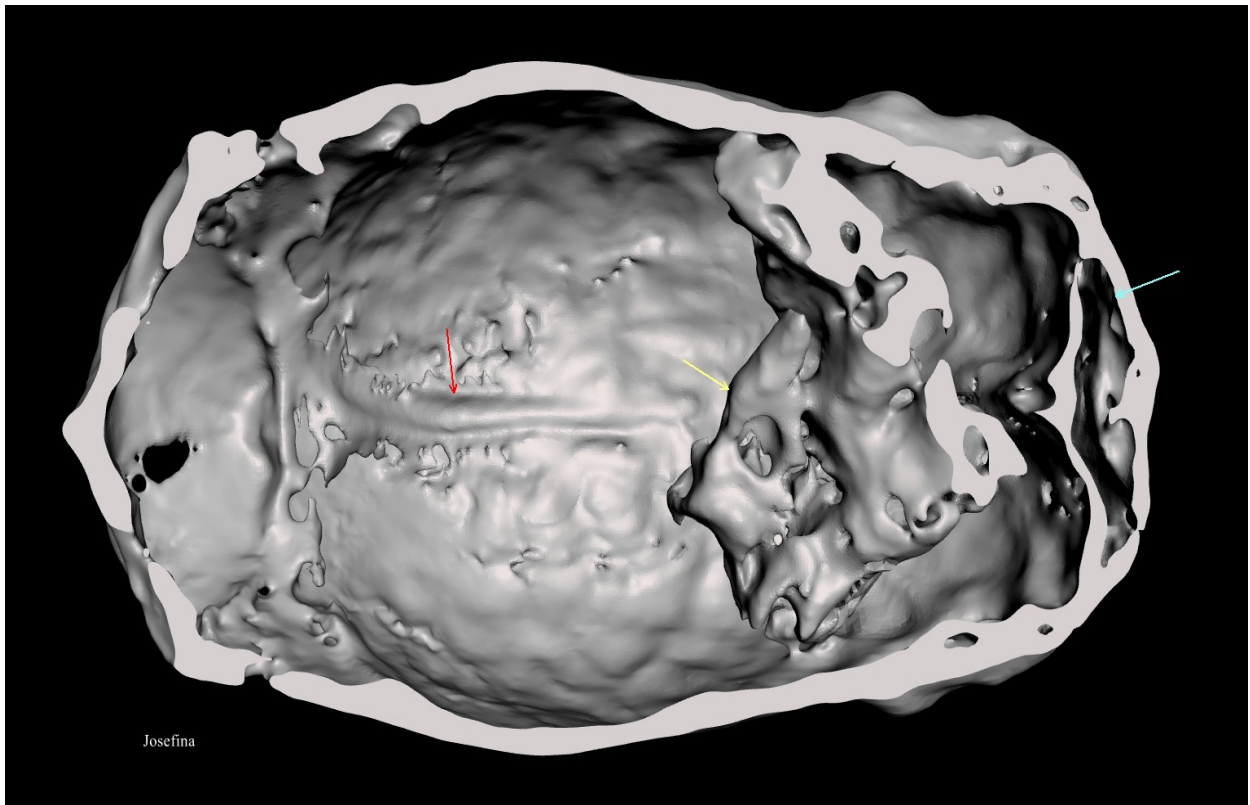


Figure 14: 3D CT showing top section of skull bones of '*Josefina*'. Note the midline groove due to superior sagittal sinus (*red arrow*). Brain remnant is noted (*yellow arrow*). There is a prominent occipital sinus cavity (*blue arrow*).

SECTION 8: ILLUSTRATIONS



Figure 15: 3D CT showing frontal, side and back views (*from left to right*) of skeleton of 'Josefina'. Note the relatively long proximal long bones, single forearm and leg bones, tridactyl hands and feet. Sophisticated dumbbell-shaped metallic implant over the front of the chest below the furcula is shown (*in gold*).

SECTION 8: ILLUSTRATIONS



Figure 16: 2D coronal (upper) and sagittal (lower) CT scans of the right ankle in 'Josefina' (left) and 'Luisa' (right). Note a lateral tibial tubercle (blue arrow) is present at distal end of the tibial of 'Josefina'. The tibial is articulating indirectly with a single tarsal bone (red arrow) more anteriorly via intervening soft tissue. 'Luisa' however shows a different configuration where the flat distal end of tibial bone articulates directly with a flat slab-like tarsal bone (red arrow).

SECTION 8: ILLUSTRATIONS



Figure 17: 2D CT scans of right hand (*left*) and right foot (*right*) of ‘*Josefina*’ showing evenly spaced tridactyl digits. Single carpal and tarsal bones are noted (*red arrows*). Distal tibia (*yellow arrow*) articulating indirectly with tarsal bone via intervening soft tissue is unique to ‘*Josefina*’.

SECTION 8: ILLUSTRATIONS

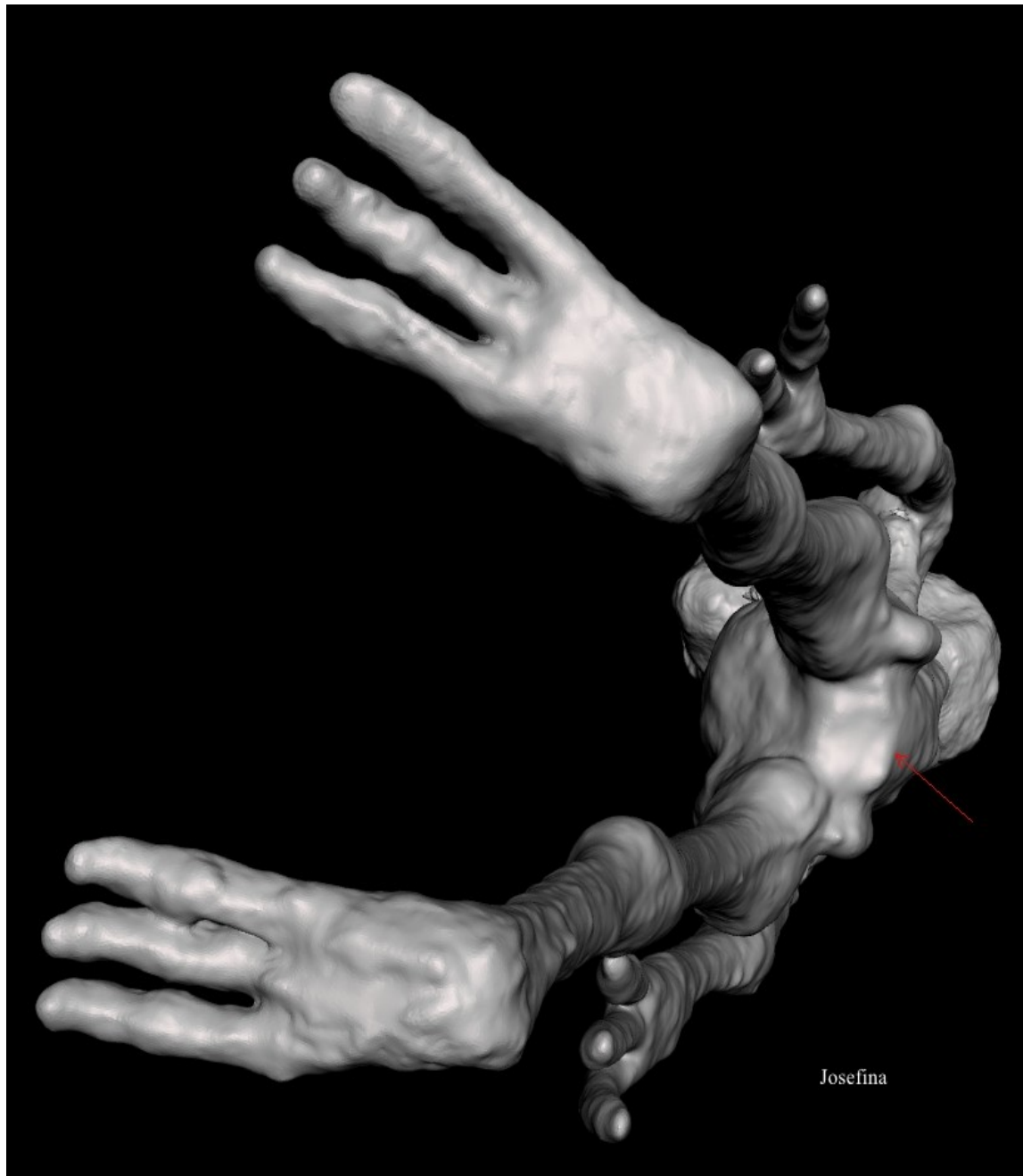


Figure 18: 3D CT showing under-surface of tridactyl feet of '*Josefina*' indicating an upright bipedal posture. Note the thin skin covering the end of the spinal canal (*red arrow*) between the legs and lack of any cloaca opening externally.

SECTION 8: ILLUSTRATIONS

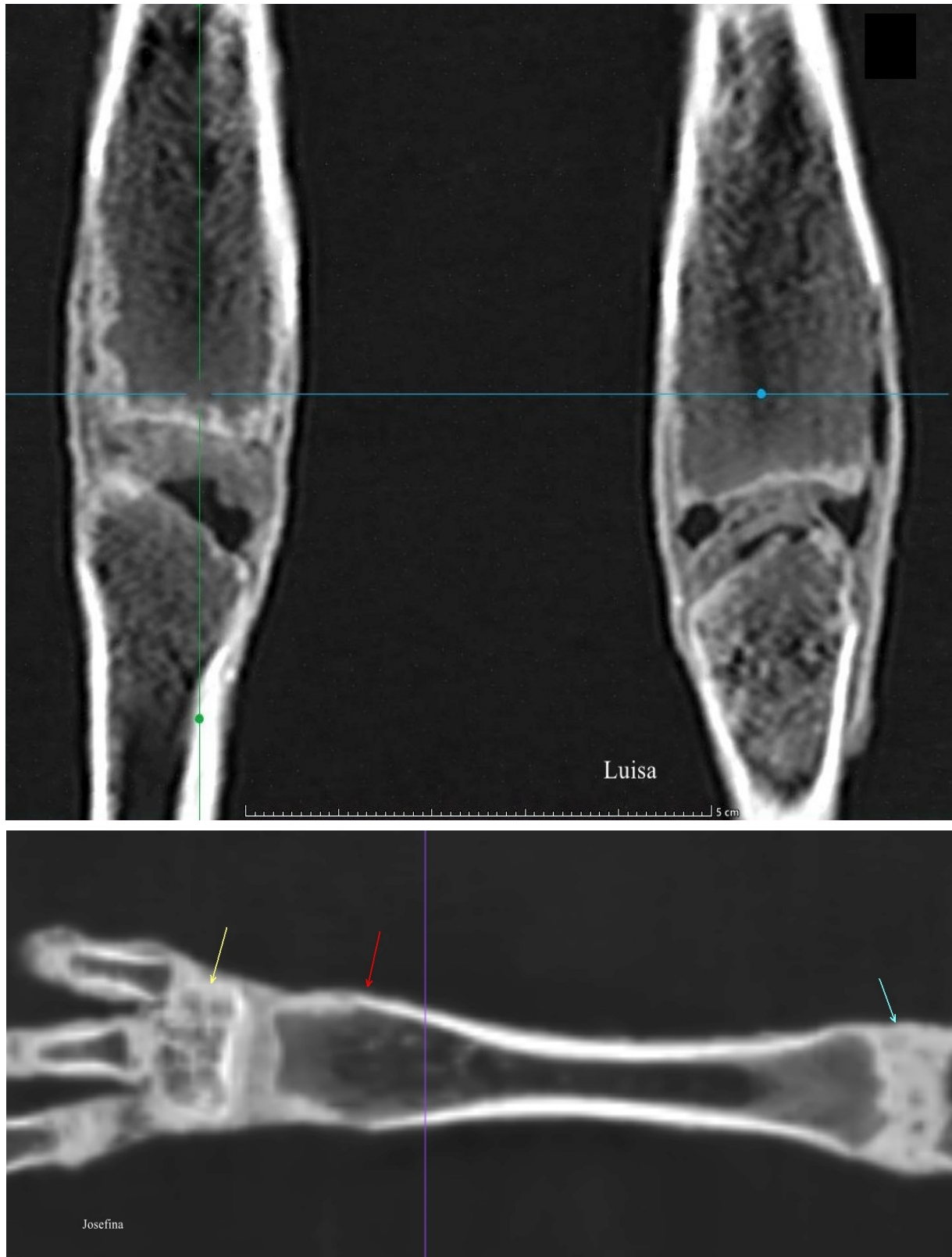


Figure 19: 2D CT coronal CT scan of both knees (*upper image*) in 'Luisa' and forearm of 'Josefina' (*lower image*). There are intervening soft tissues between the bones forming the joints (*green arrow*). Note the expanded distal end (*red arrow*) of the forearm bone creating an 'Erlenmeyer flask' configuration. The single carpal bones (*yellow arrow*) shows thick trabeculations.

SECTION 8: ILLUSTRATIONS



Figure 20: 2D coronal CT scan showing both hips of '*Alberto*'. Note the narrow antero-posteriorly orientated hip joint (*yellow arrows*) with the iliac bone articulating with a large sized dome-shaped upper femoral epiphysis. In the right hip, there is evidence of previous epiphyseal injury with detached epiphyseal fragment showing bony regrowth associated with a metallic implant (*red arrow*).

SECTION 8: ILLUSTRATIONS

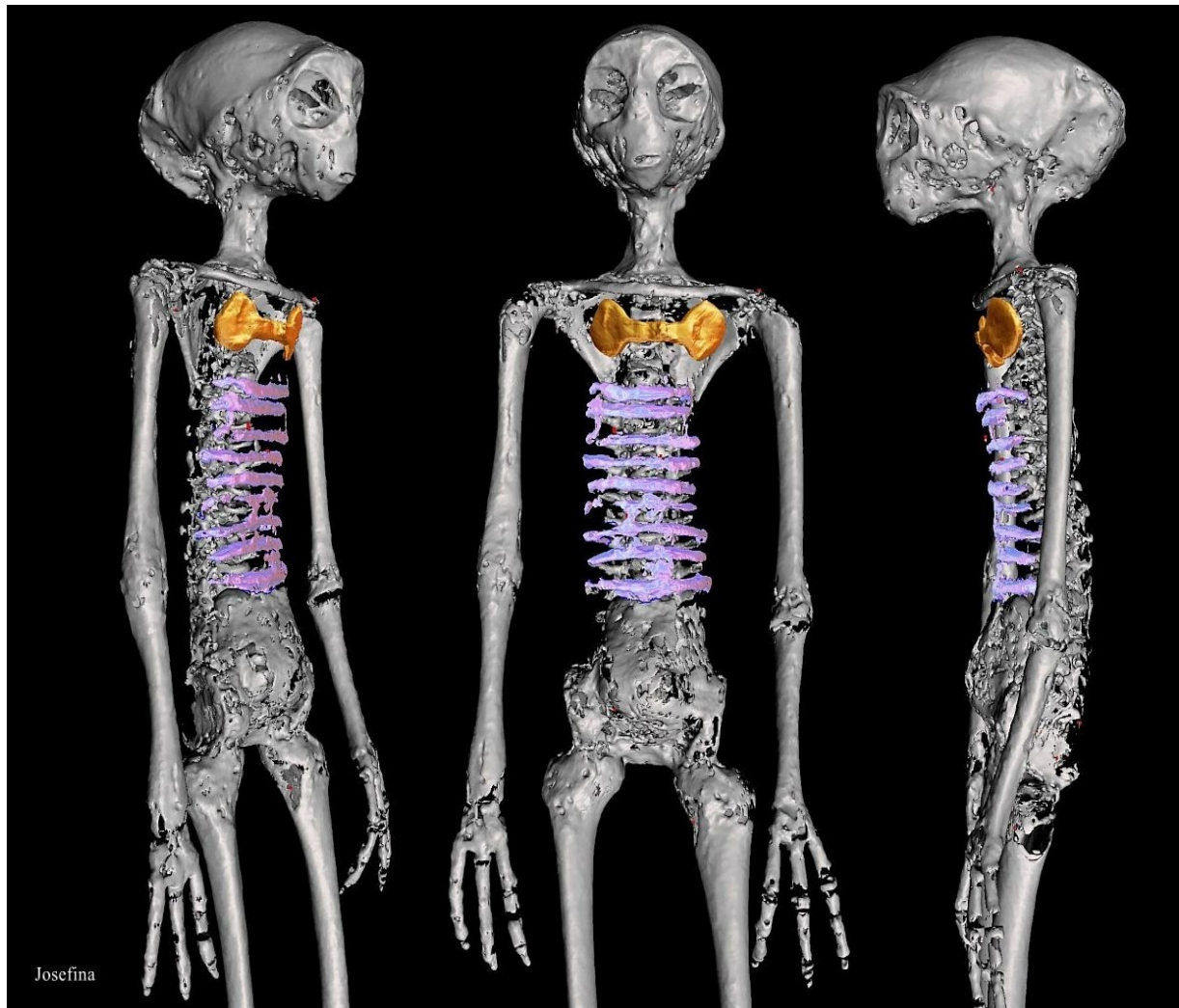


Figure 21: 3D CT showing oblique, frontal and lateral views (*from left to right*) of the skeleton of 'Josefina'. Note the parallel horizontal rib-like structures forming the gastralia (*violet colour*). The gastralia is connected to the spine via horizontal short ribs on both sides.

SECTION 8: ILLUSTRATIONS

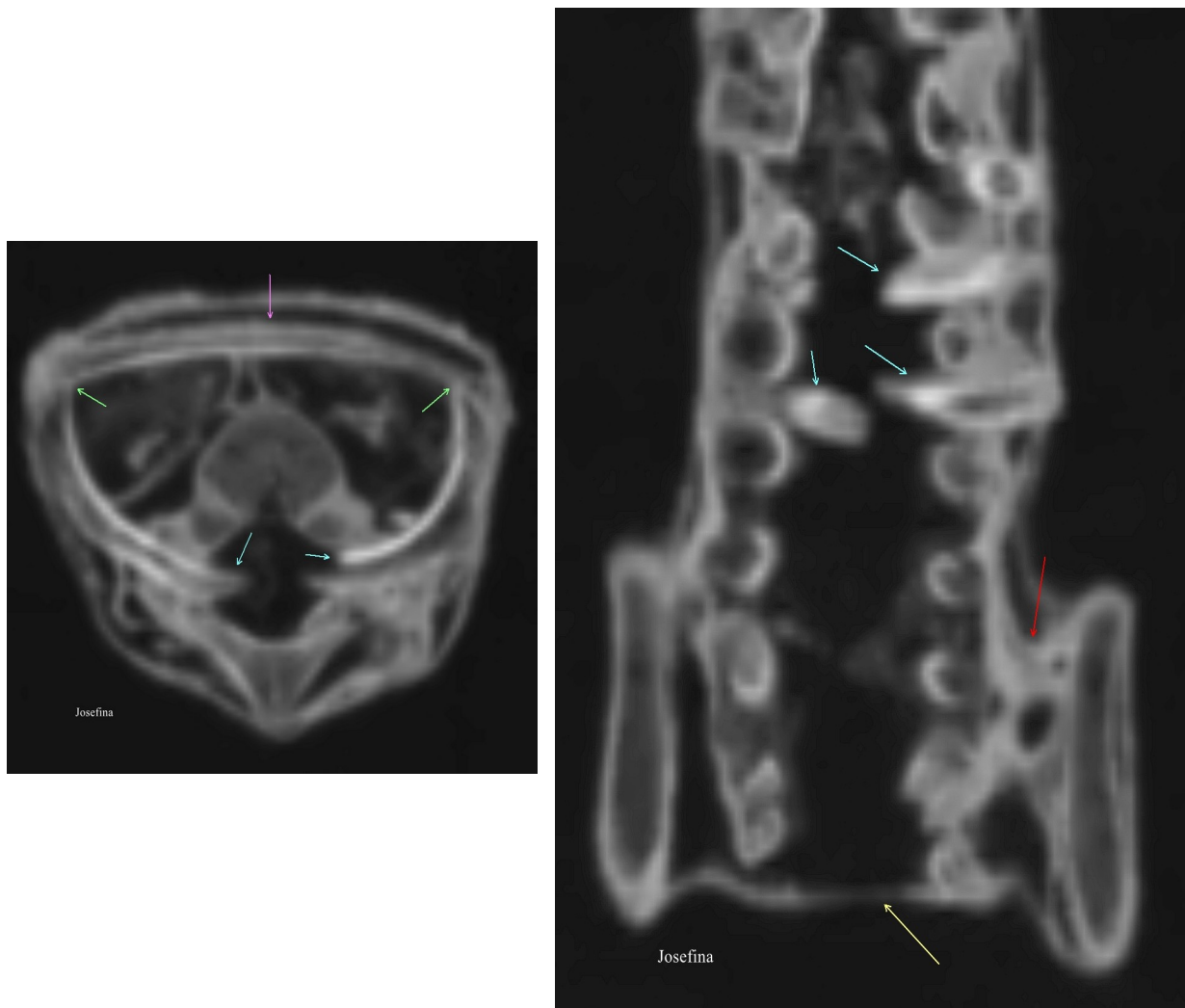


Figure 22: Cross-sectional 2D CT scan (left) and coronal 2D CT scan (right) of the spine of 'Josefina'. The gastralia formed by rows of horizontal bars (pink arrow) articulating with bilateral short ribs (green arrows). Fractured medial ends of multiple ribs (blue arrows) can be seen randomly projecting into the wide spinal canal through intervertebral foramina. This could have resulted from crushing compression force being applied to the gastralia. Note the wide spinal canal ending abruptly below covered by thin skin (yellow arrow). The spine articulates with the vertical iliac bones via sacro-iliac joints (red arrow).

SECTION 8: ILLUSTRATIONS

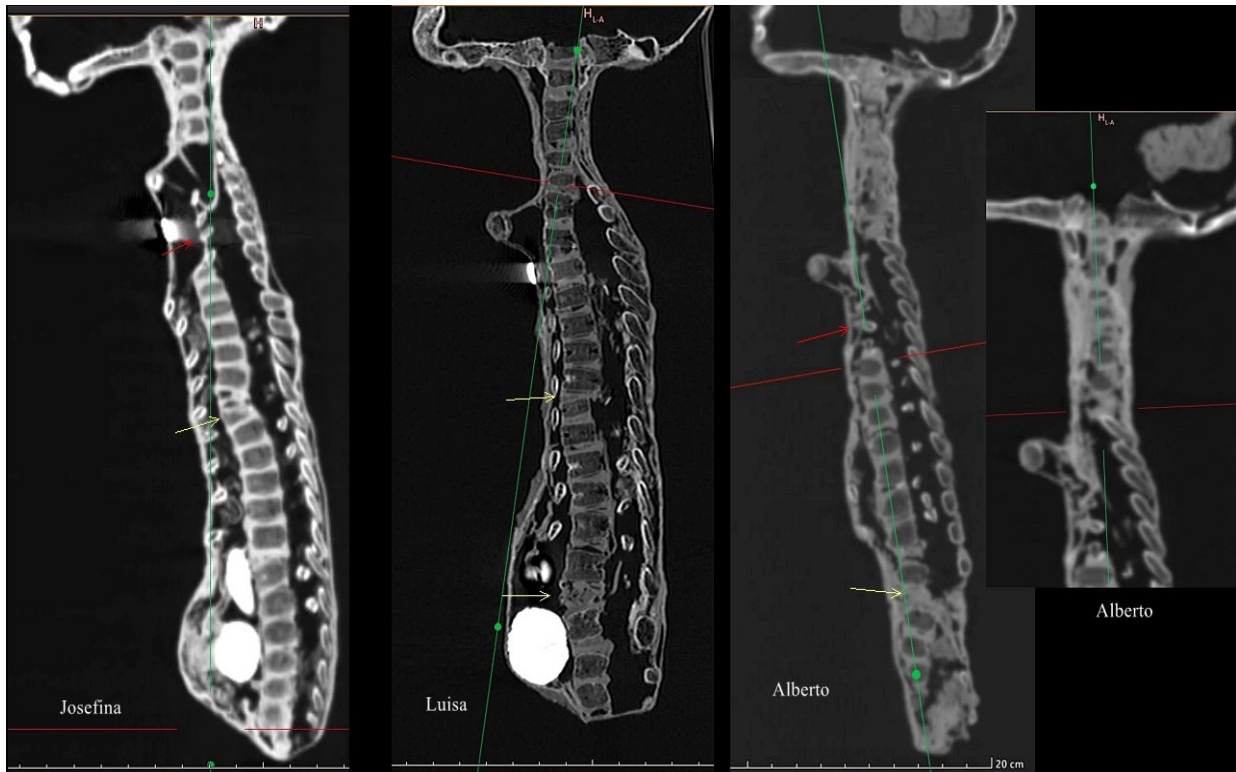


Figure 23: 2D sagittal CT scans of whole spine of 'Josefina', 'Luisa' and 'Alberto' with inset showing cervical spine of 'Alberto' (from left to right). Note difference in neck length and variable number of cervical vertebrae lacking posterior elements. The upper thoracic spine of 'Josefina' and 'Alberto' show unusual bar-like anterior elements (red arrows) replacing the conventional vertebral bodies. However 'Luisa' is different and shows more conventional vertebrae in the upper thoracic region. Note evidence of trauma in vertebral bodies and intervertebral disks (yellow arrows). The very wide spinal canal does not extend into cervical region and its lower end terminate in a wide opening covered only by thin skin. Intervertebral disks appear relatively dense.

SECTION 8: ILLUSTRATIONS



Figure 24: Cut away view of 3D CT showing thoracic spine of '*Josefina*'. Note the bar shaped anterior elements in upper thoracic spine (*red arrows*) and the fused vertebral bodies forming block vertebrae in lower thoracic spine (*yellow arrows*).

SECTION 8: ILLUSTRATIONS

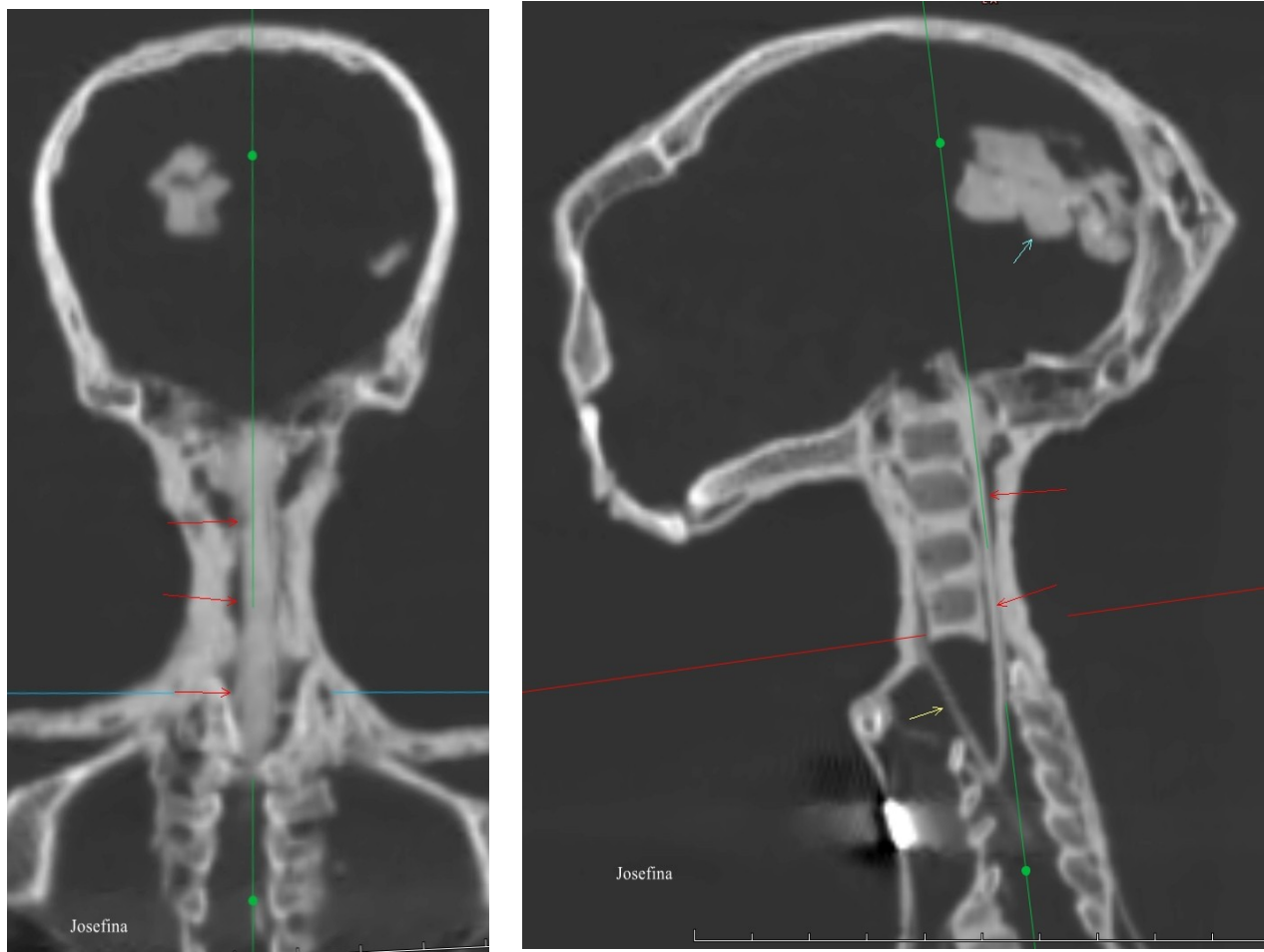


Figure 25: 2D coronal (*left*) and sagittal (*right*) CT scans showing the spinal cord remnant (*red arrow*) in 'Josefina' lying directly behind the cervical spine that lacks any posterior elements. The spinal cord attach to the back of the first thoracic vertebra then divides into 2 parallel cord-like structures (*yellow arrow*) forming a sling looping back and extending anteriorly to be attached to the skin in lower edge of the neck near midline. This arrangement is extremely unusual and surprising.

SECTION 8: ILLUSTRATIONS

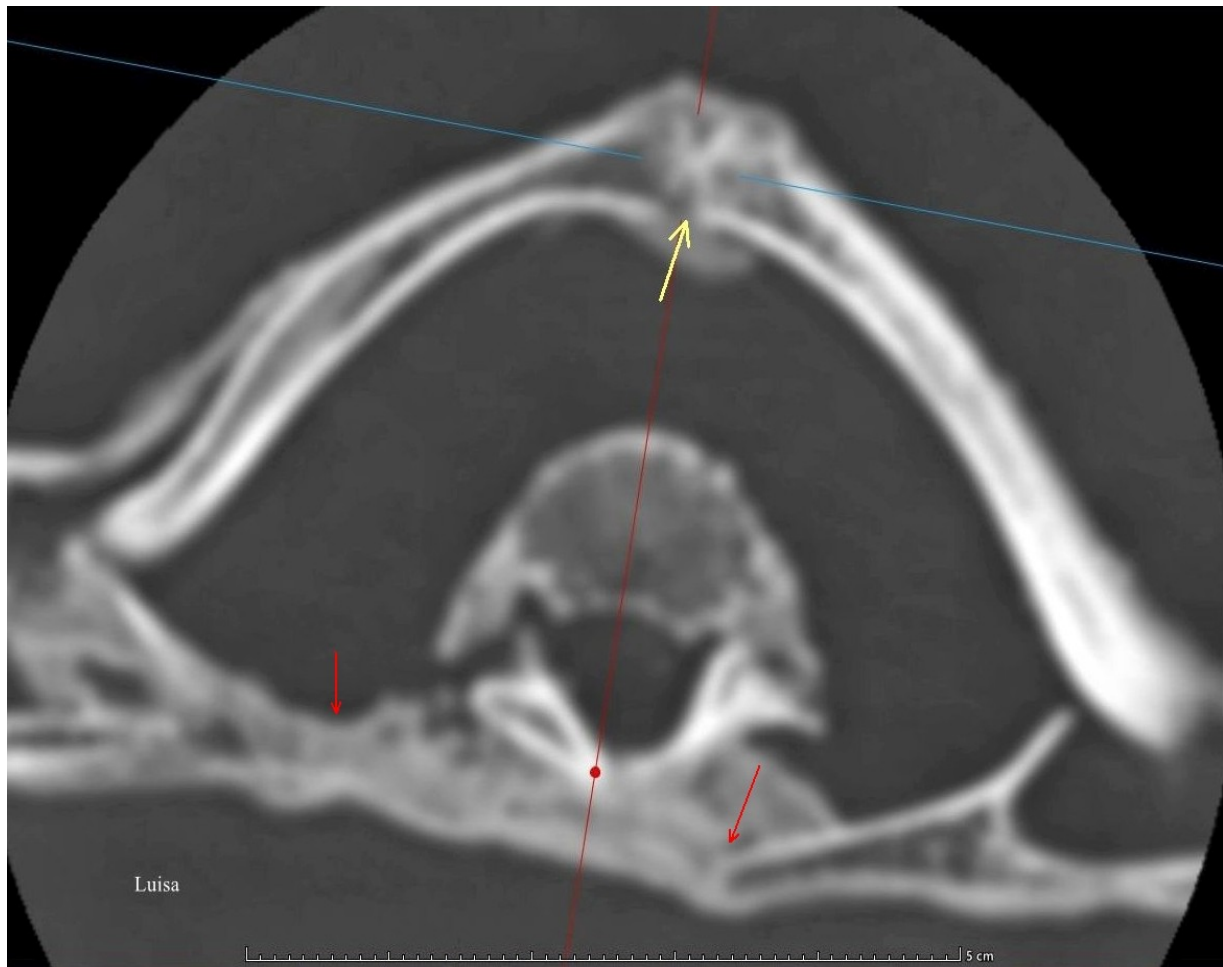


Figure 26: 2D CT scan of '*Luisa*' showing bilateral furcula meeting in midline (*yellow arrow*) bounded by thinner anterior ligament and thicker posterior ligament. The furcula articulates with the acromial process of scapula. Manubrium and sternum are absent. Note both scapulae almost conforming to a coronal plane and there is bony fusion between the medial edges of the scapulae with the posterior elements of the thoracic spine (*red arrow*). This triangular-shape configuration forms a very robust and stable base for the upper girdle.

SECTION 8: ILLUSTRATIONS

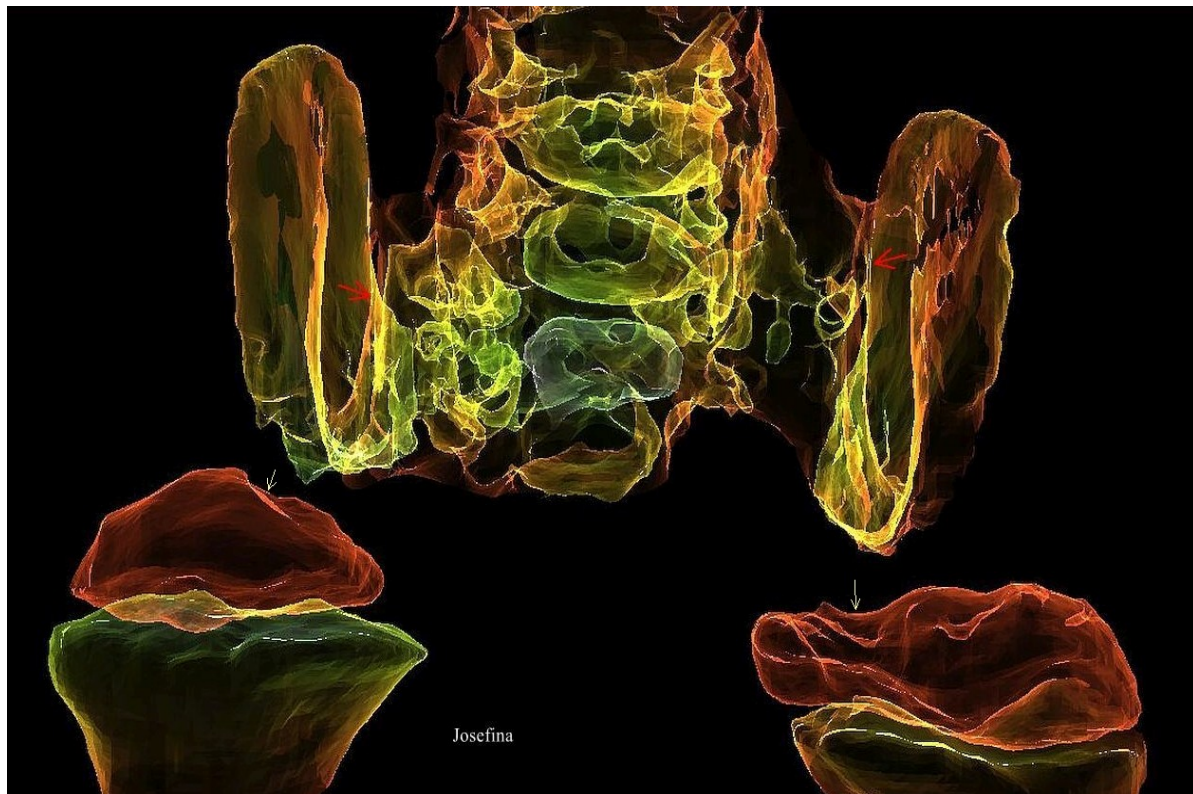


Figure 27: 3D CT showing pelvic girdle of '*Josefina*'. Note the 2 vertical oval shaped iliac bones articulating with the sacral segments at the sacro-iliac joints (*red arrows*) in H-shape configuration. There is lack of complete pelvic ring. There is lack of ball and socket joint in the hip. The hip joint is orientated in an anteroposterior orientation with the iliac bone sitting on a small articulating surface on top of the oversized upper femoral epiphysis (*yellow arrows*).

SECTION 8: ILLUSTRATIONS

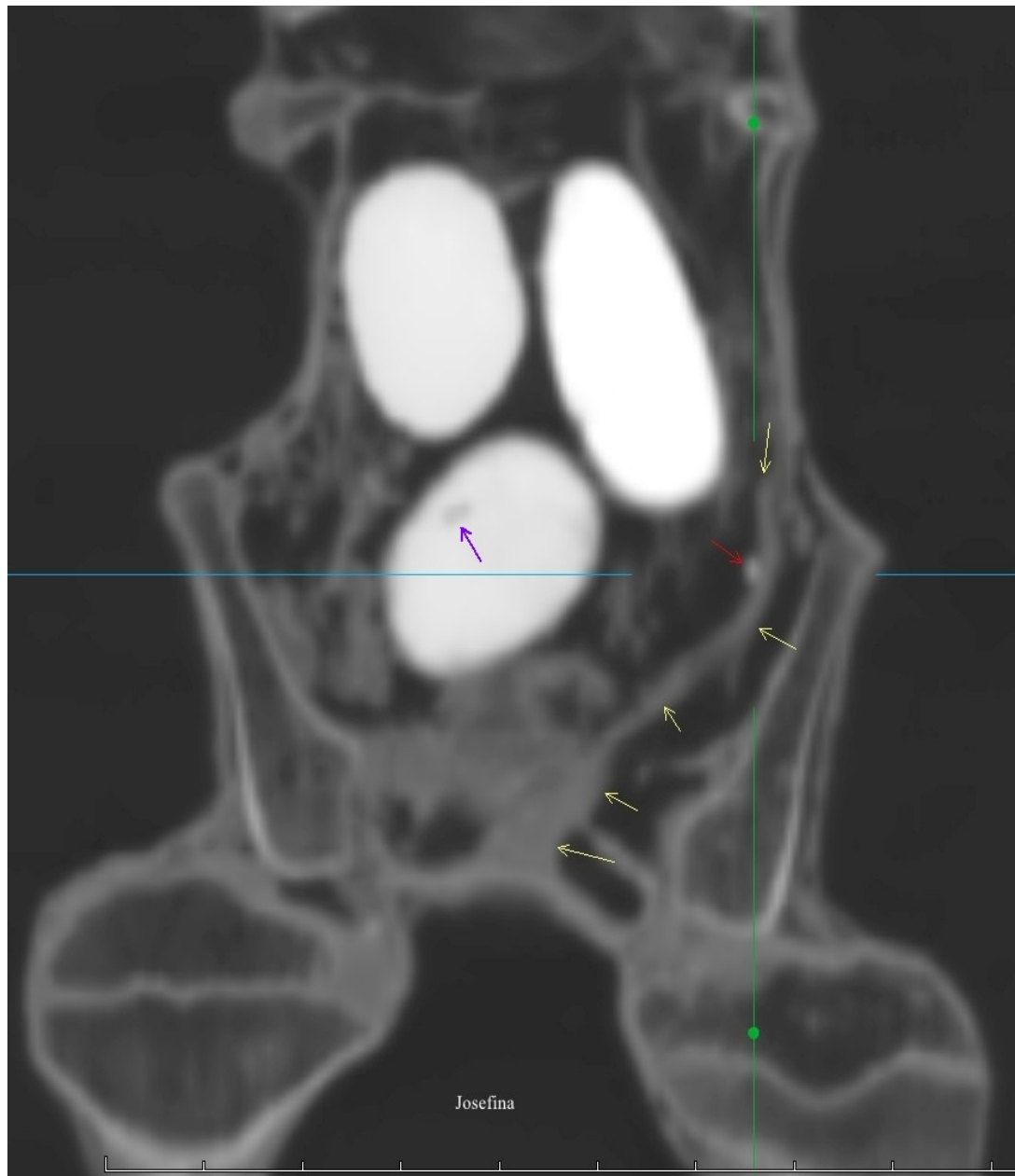


Figure 28: 2D coronal CT scan of abdomen of '*Josefina*' showing presence of content (*purple arrow*) in one of the large oval eggs. A tiny egg (*red arrow*) is seen in left side of abdomen adjacent to an elongated structure extending to the perineum suggestive of oviduct (*yellow arrows*). However no external opening could be identified.

SECTION 8: ILLUSTRATIONS

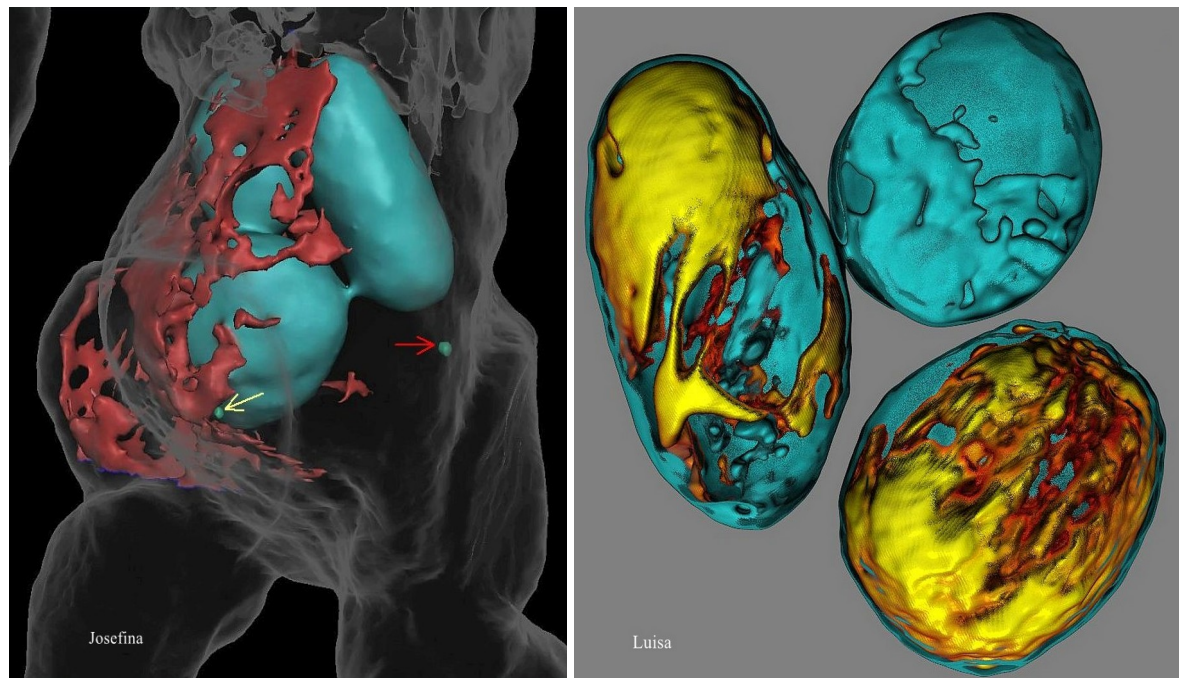


Figure 29: 3D CT in oblique projection (*left*) showing presence of 3 large and 2 small eggs (*red & yellow arrows*) (total=5 eggs) in the bulging abdomen of '*Josefina*'. The eggs are surrounded by a network of soft tissue anteriorly. The inhomogeneous contents within the 3 large eggs of '*Luisa*' are rendered in different false colours using direct volume rendering 3D CT and suspicious of developing embryos. (*right*).

SECTION 8: ILLUSTRATIONS

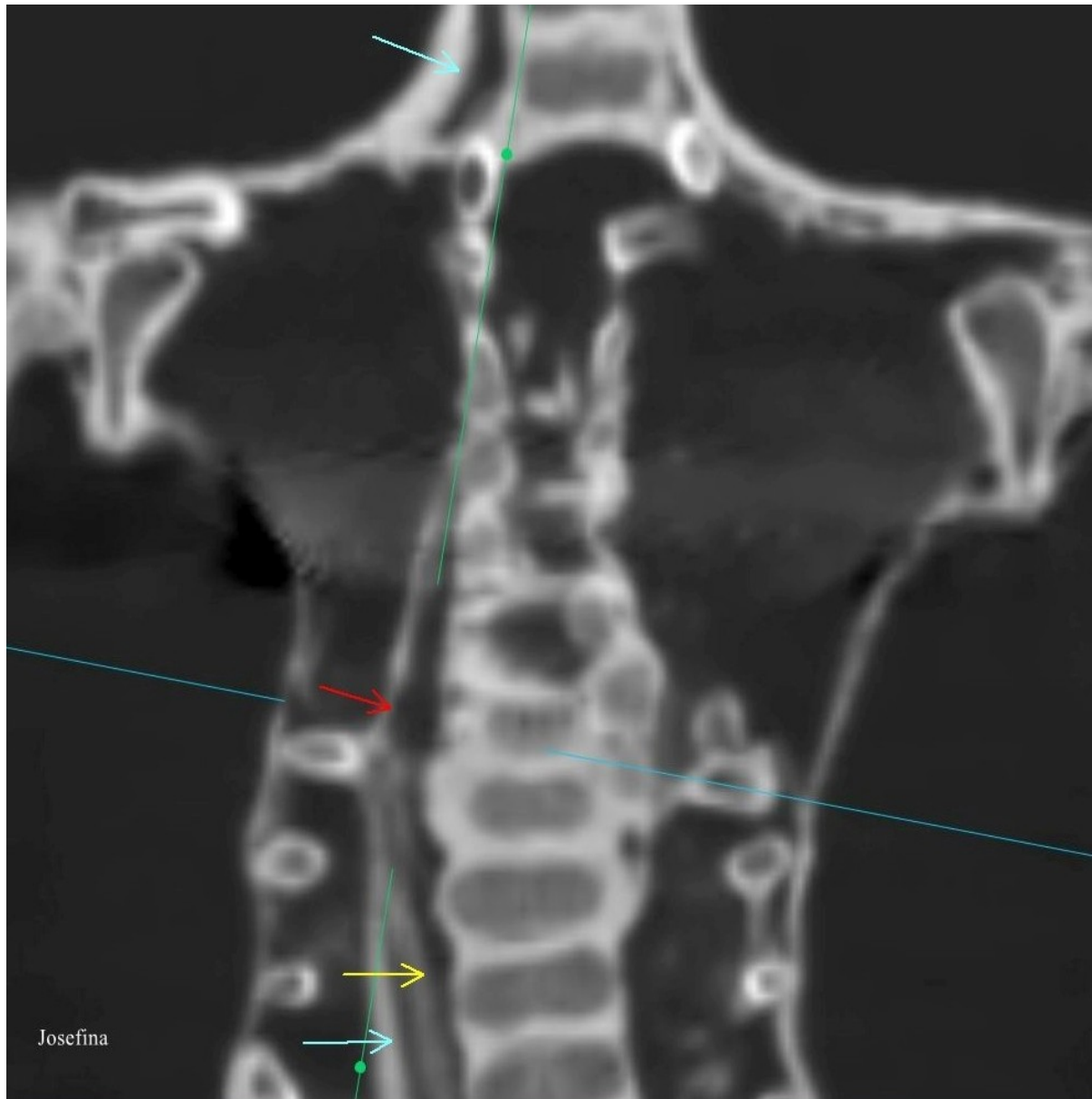


Figure 30: 2D coronal CT scan of 'Josefina' showing presence tubular heart (*red arrow*), aorta (*yellow arrow*) and veins (*blue arrow*) in thorax and lower neck.

SECTION 8: ILLUSTRATIONS

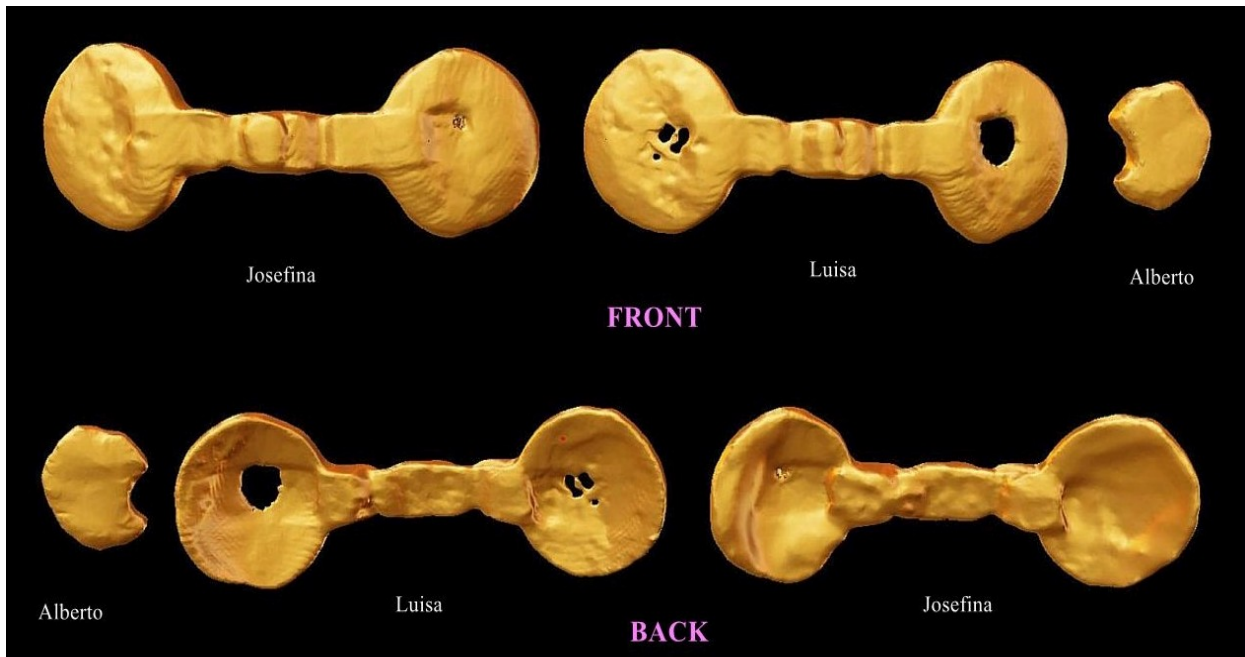


Figure 31: 3D CT showing detailed front and back views of the complex dumbbell-shaped metallic implants below the furcula in '*Josefina*' and '*Luisa*' and the smaller moon shape implant over right hip of '*Alberto*'. Machine marks can be found. The implants in '*Josefina*' and '*Luisa*' are attached to skin. The implant in '*Alberto*' is associated with fracture in the upper femoral epiphysis showing evidence of bone healing.

SECTION 8: ILLUSTRATIONS

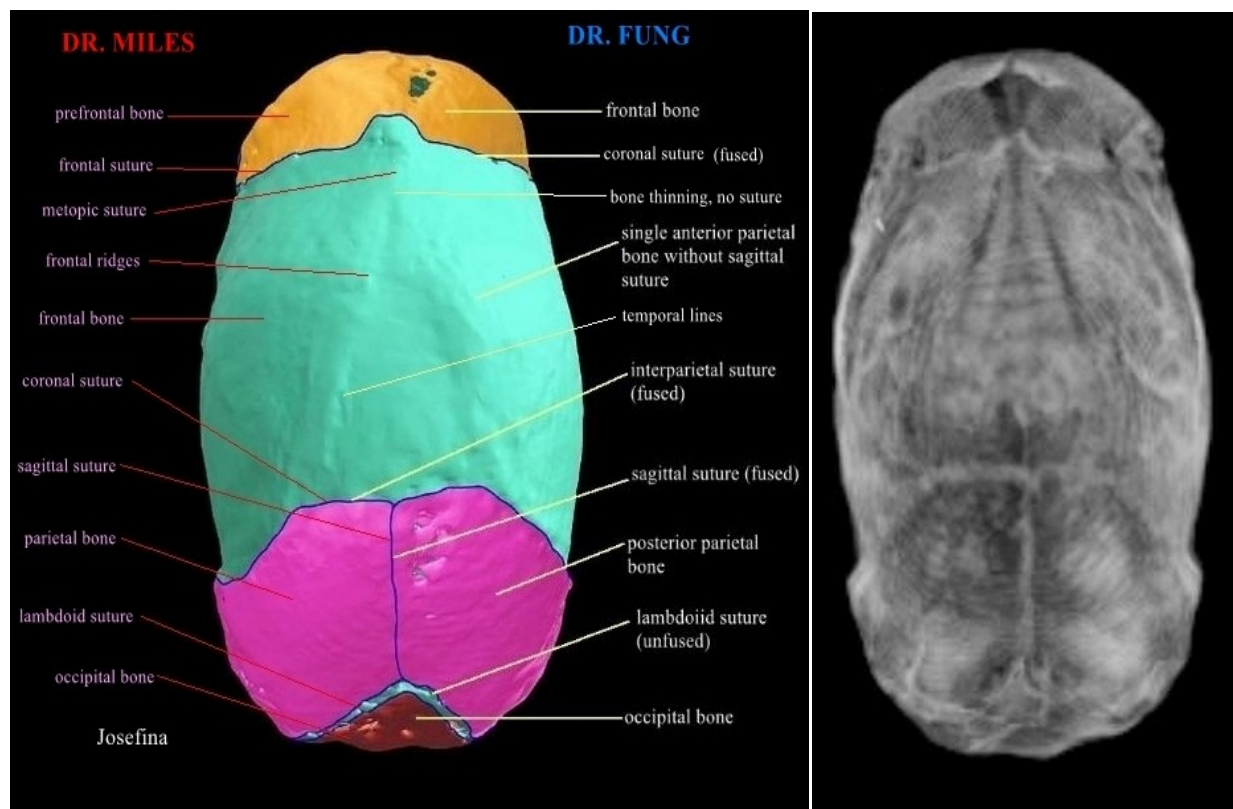


Figure 32: 3D CT (*left*) showing skull bones of 'Josefina' viewed from above. Difference in interpretation of findings between Dr. Fung and Dr. Miles are shown. Corresponding maximum-intensity-projection (MIP) image is shown for comparison. (*right*). The occipital suture remains open but other sutures are fused and not visible on the outer surface.

ABOUT DR. FUNG

Dr. K H Fung is a retired radiologist with over 40 years of experience in diagnostic radiology. His special interests include 3D medical visualisation, interventional radiology and neuro-intervention.

Dr. Fung is also an artist in the domain of intersection of art and science utilising his expertise in 3D medical visualisation. Dr. Fung was the first place co-winner in the '2007 International Science & Engineering Visualisation Challenge' organised by Science magazine and National Science Foundation (USA).

His artworks had been exhibited in museums in various countries including USA, Europe, China, Australia and Hong Kong.

He had current exhibits in 2025 in the Hong Kong Museum of Medical Sciences (featuring stereoscopic 3D and 4D medical imaging and art) and in Nina Park (featuring the Nina wood fossils collection) in Hong Kong.

Through his collaboration with Science Photo Library, his interdisciplinary artworks bridging art and science had been made available to various international renowned digital media, magazines, books, and journals.

/end