

Cranial Surgery Dates Back Thousands of Years

Cranial surgery is tricky business, even under 21st-century conditions (think aseptic environment, specialized surgical instruments and copious amounts of pain medication both during and afterward).

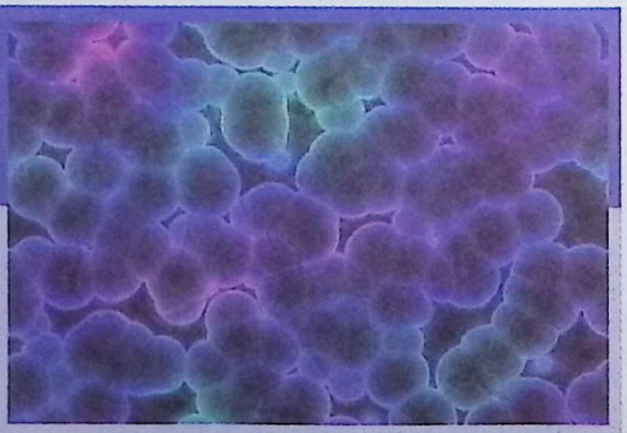
However, evidence shows that healers in Peru practiced trepanation -- a surgical procedure that involves removing a section of the cranial vault using a hand drill or a scraping tool -- more than 1,000 years ago to treat a variety of ailments, from head injuries to heartsickness. And they did so without the benefit of the aforementioned medical advances.

Excavating burial caves in the south-central Andean province of Andahuaylas in Peru, University of California Santa Barbara bioarchaeologist Danielle Kurin and her research team unearthed the remains of 32 individuals that date back to the Late Intermediate Period (ca. AD 1000-1250). Among them, 45 separate trepanation procedures were in evidence. Kurin's findings appear in the current issue of the *American Journal of Physical Anthropology.*

According to Kurin, trepanations first appeared in the south-central Andean highlands during the Early Intermediate Period (ca. AD 200-600), although the technique was not universally practiced. Still, it was considered a viable medical procedure until the Spanish put the kibosh on the practice in the early 16th century.

Kurin's research shows various cutting practices and techniques being employed by practitioners around the same time. Some used scraping, others used cutting and still others made use of a hand drill.

Researcher to Grow Human Cells in Space to Test Treatment for Stroke



Abba Zubair believes that cells grown in the International Space Station (ISS) could help patients recover from a stroke, and that it may even be possible to generate human tissues and organs in space. He just needs a chance to demonstrate the possibility.

He now has it. The Center for the Advancement of Science in Space (CASIS), a nonprofit organization that promotes research aboard the ISS, has awarded Dr Zubair a $300,000 grant to send human stem cells into space to see if they grow more rapidly than stem cells grown on Earth.

Dr Zubair, medical and scientific director of the Cell Therapy Laboratory at Mayo Clinic in Florida, says the experiment will be the first one Mayo Clinic has conducted in space and the first to use these human stem cells, which are found in bone marrow.

He specifically wants to expand the population of stem cells that will induce regeneration of neurons and blood vessels in patients who have suffered a hemorrhagic stroke, the kind of stroke which is caused by blood clot. Dr. Zubair already grows such cells in his Mayo Clinic laboratory using a large tissue culture and several incubators – but only at a snail's pace.

Dr Zubair is working with engineers at the University of Colorado who are building the specialised cell bioreactor that will be taken to the ISS within a year for the experiment.