

Procedure feared to 'suck brain from skull' safe for malaria patients

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A child suffering from malaria is cared for at Queen Elizabeth Central Hospital in Blantyre, Malawi. Credit: Michigan State University

A Michigan State University researcher is challenging a widely held African belief that a spinal tap, a procedure safely used to treat other

diseases, could suck the brain from the base of the skull and cause death in malaria patients.

Douglas Postels, a pediatric neurologist and a lead author of a new study, has shown that the common medical procedure used to diagnose [brain](#) infections and also treat nervous system illnesses that lead to increased pressure around the brain, is safe in patients with [cerebral malaria](#).

Increased pressure in the brain can lead to death in many children who fall into coma from cerebral malaria, which is the most severe form of the disease.

"The thought has been not to use the procedure, especially if any increased pressure in the brain or swelling seen in the eye is present in comatose malaria patients," Postels said. "But based on our evidence, even children with severe brain swelling had no change in the likelihood of dying, whether or not they had a [spinal tap](#)."

The study is now published in the online issue of *Neurology*, the medical journal of the American Academy of Neurology.

Postels, an associate professor in the College of Osteopathic Medicine who travels to southeastern Africa to treat patients and to further his research, realized that performing a spinal tap in children with the disease was not a universal practice across the continent. Many local doctors were concerned that the procedure could force the brain out of the hole at the base of the skull because of the potential pressure difference it could cause.

Questioning the validity of this way of thinking, Postels, along with co-author Christopher Moxon from the University of Liverpool, United Kingdom, set out to show that a spinal tap was not dangerous.

The researchers analyzed the outcomes of 1,827 cerebral malaria patients admitted to the hospital in Malawi between 1997 and 2013. They found that children who were sicker upon arrival at the hospital were more likely to die from their illness, not from the spinal tap, which did not change their risk of death.

Based on these findings, Postels said educating the African population and other areas that have similar beliefs is crucial in treating the disease since it's estimated that malaria kills a child on the continent every 30 seconds.

"This actually is an important procedure that may help patients survive," he said.

He hopes to further test these findings in a future randomized, controlled clinical trial to see if a spinal tap can actually be used as a therapy to lower brain pressure in children with cerebral malaria.

"The important thing to remember is it's not the spinal tap that causes death, it's the underlying illness. Rather than being harmful, we believe the procedure could be beneficial for these critically ill children. Anything we can do to help decrease death and disability rates for [children](#) with [severe malaria](#) is a positive for everyone."

Provided by Michigan State University

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