Scientists Diagnose Dinosaur With Malignant Bone Cancer

A horned dino is believed to have had osteosarcoma almost 77 million years ago.

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Well that only took a few thousand millennia! Scientists have diagnosed an aggressive malignant bone cancer (osteosarcoma) in a dinosaur that lived nearly 77 million years ago. It's the first time this cancer has been identified in dinosaurs.

In humans, osteosarcoma occurs most often in people under age 25. It's an overgrowth of disorganized tissue that spreads quickly through the bone in which it originates and can spread to other organs, including the lungs.

According to new findings published in The Lancet Oncology by investigators at McMaster University in Ontario and the Royal Ontario Museum, Centrosaurus apertus had cancer in its fibula (lower leg bone) that eventually spread throughout its body.

Although the dino's bone was discovered in 1989, researchers just recently decided to reevaluate it. They approached the diagnosis similarly to how they would have approached the diagnosis of an unknown tumor in a human. Scientists first examined, documented and cast the bone before performing several computed tomography (CT) scans.

Then, researchers thin-sectioned the fossil bone and examined it under a microscope to assess it at the cellular level and visualized the progression of the cancer through the bone using 3-D CT reconstruction tools. Through this process, they diagnosed the osteosarcoma.

To confirm the diagnosis, the fossil was compared to a normal fibula from a dinosaur of the same species as well as a human fibula with a confirmed case of osteosarcoma.

"The shin bone shows aggressive cancer at an advanced stage," said David Evans. "The cancer would have had crippling effects on the individual and made it very vulnerable to the formidable tyrannosaur predators of the time. The fact that this plant-eating dinosaur lived in a large, protective herd may have allowed it to survive longer than it normally would have with such a devastating disease."

Scientists hope this study will help set a new standard for diagnosing unknown diseases in

dinosaur fossils as well as lead to more precise and certain diagnoses. Furthermore, discovering links between human disease and the diseases of the past should help researchers better understand the evolution and genetics of cancer and other diseases.

To learn more about bone cancer, click here.

For related content, see "Dogs May Unlock the Secrets of Brain Cancer in Humans."

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