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Mosasaurus are a group of extinct large-bodied obligatory aquatic reptiles known from Late Cretaceous marine localities around the world, including the inland sea of North America. The behavior of these well-known reptiles has been discussed and suggest that many of the species were prone to intraspecific combat and highly popularized with explosive predation-focused narratives.

Using computed tomography (CT) we examined a splenial (a lower jaw element) belonging to a young mosasaur. The splenial was collected from the Smoky Hill Chalk Member of the Niobrara Formation (Late Coniacian, Late Cretaceous), on the border of Ness and Trego counties. It is referable as *Tylosaurus* based on general morphology and specifically referable to *Tylosaurus kansasensis* based on locality data. This individual was originally hypothesized to have been killed by a larger mosasaur based on the presence of a tooth embedded in the splenial.

However, examination of the CT scans suggest an alternative scenario for the tooth’s placement, suggesting the tooth may have been placed there through either diagenetic processes or post-mortem scavenging. We stress the importance of being cautious in interpreting behavior in the fossil record. Additionally, we note the need for better descriptions and illustrations of individual bones of the mosasaur skull in future scientific studies, which are sorely lacking at present.