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T: 11. A Mesozoic "woodpecker"? Functional morphology of the neck in *Zalambdalestes lechei* (Mammalia: Eutheria) informed by micro-CT study

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Zalambdalestidae are a group of Late Cretaceous eutherians endemic to Asia. Most Zalambdalestids are known from teeth and fragmentary mandibular/maxillary remains, but *Zalambdalestes* is represented by some nearly complete skeletons. Specifically, the postcranial remains of *Zalambdalestes*, which we analyzed with microcomputed tomography, include an almost complete set of the neck vertebrae (C2–C7), and the atlas is known for its sister genus *Barunlestes*. The cervicals of *Zalambdalestes* are much longer than those of typically ricochetal mammals, thus contradicting ricochetal locomotion proposed earlier for *Zalambdalestes*. The most striking feature of *Zalambdalestes* neck is, however, the epistropheus with a very elongated but slender spinous process directed strongly caudally. We compared the shape of the epistropheus with that of 85 species of extant mammals (monotremes, marsupials, and placentals) using 3D landmark analysis. All-inclusive analysis places on *Zalambdalestes* in morphospace near small carnivorous mammals. However, the analysis concerning the cranio-caudal aspects of the spinous process places *Zalambdalestes* outside of most of studied taxa. Virtual range of motion analysis indicates a limited dorsal extension in the neck of *Zalambdalestes* caused by the vertebral arches getting quickly into contact rather than by the C2 spinous process blocking the motion. The ventral flexion is substantial, nearly 90° relative to the osteological neutral posture, rendering neck mobility much higher than previously thought. The reconstructed neck musculature indicates large rectus capitis dorsalis superficialis and obliquus capitis caudalis muscles; both are major rotators of the head and atlas. This suggests that the C2 spinous process was involved in fast head shaking/rotation, which may have been connected with feeding behavior, e.g., wrestling larvae from under the bark, killing prey by powerful shaking head movements or, less likely, tearing parts off a larger prey. Overall, functional morphology suggests forces exerted by *Zalambdalestes* neck that are unusually high for a mammal of its size. Its C2 is peculiar among mammals and we may only deduce its function, due to the lack of a living proxy. Thus, it represents a unique window into the early eutherian neck diversity. This research was funded by National Science Centre (Poland) grant number 2015/18/E/NZ8/00637 to ŁFF.

T: 12. A study on the morphological variations of the human liver and its clinical implications in Gujarat region

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INTRODUCTION: Morphological variations of the liver are irregularities in the form, occurrence of one or more accessory lobes or presence of cyst ;Accessory hepatic fissures/sulci Caudate lobe shape variation are less common abnormalities are, atrophy or complete absence of one of the lobes, Accessory lobes can occur in numerous places. The exact reason for the origin of accessory lobe of liver in man is still unknown. In most cases, the accessory lobe is found in the infra-hepatic position. Riedel's lobe is the best known example of a sessile accessory lobe. Accessory lobes may also trigger tumour. METHODS: A total of 100 formalin-fixed adult human livers, irrespective of the sex, were studied over a period of three years. These livers were specifically observed for any variant or anomalous surface morphology. RESULTS: 32specimen of cadaveric liver is normal, 28 liver has accessory fissure, 20 liver present with riedel's lobe, 20 liver present with pons hepatis. CONCLUSION: Morphological variations on the surface of the liver. Now a days, these type of morphological