Alar and Transverse Ligament Calcification and Crown Dens

To the Editor:

Takizawa, et al described alar ligament and transverse ligament calcification in patients reported as having rheumatoid arthritis\(^1,2,3\). Lack of full clinical information precludes assessment as to whether their application of the term “rheumatoid” identifies the specific disease or nonspecifically identifies generalized inflammatory arthritis\(^4\), considering previous report as a complication of ankylosing spondylitis\(^5\). In that case, it appeared actually to be a component of ossification of the posterior longitudinal ligament. They attributed the patient’s neck pain to this phenomenon, noting similar attribution of previous cases to an inflammatory process.

Takizawa, et al’s magnetic resonance imaging and computed tomography images\(^1\) present a perspective, but perhaps the character of the alar ligament and transverse ligament calcifications/ossifications are even more clearly illustrated by the fossil image in Figure 1. The atlas of *Teleoceras* USNM (US Smithsonian National Museum of Natural History) 93989, a Late Miocene (dated at more than 5 million yrs) type of rhinoceros\(^6\) from Frontier County, Nebraska, USA, illustrates alar and transverse ligament calcification. The alar calcification produces a crowned dens appearance.

Because spondyloarthropathy has been documented in 23% of *Teleoceras*\(^7,8\), its pathology may be related to inflammation. Extrapolating from the bellicose character of extant rhinoceros, a traumatic etiology, as suggested by Takizawa, et al\(^1\), for the alar ligament calcification also cannot be ruled out.

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REFERENCES


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**Figure 1.** Inferior view of *Teleoceras* atlas (US Smithsonian National Museum of Natural History, no. 93989). Ossification of transverse ligament. Dens was capped by alar ligament calcification and crowned dens.