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 arthritis⁴, considering previous report as a complication of ankylosing spondylitis⁵. 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 images¹ 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 rhinoceros⁶ 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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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.