

COMPUTED TOMOGRAPHIC ASSESSMENT OF RADIO-ULNAR INCONGRUITY (RUI) IN A POPULATION OF GROWING GERMAN SHEPHERD DOGS



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INTRODUCTION

This study aims to investigate the role of radio-ulnar incongruity (RUI) in a group of growing German shepherd dogs (GSDs) in the development of elbow dysplasia (ED).

MATERIAL AND METHODS

Thirty-four GSDs underwent computer tomography of the elbows at 6 and 12 months of age. RUI was measured in a standardized multiplanar reconstruction and considered widened when $>1.5\text{mm}$. ROC curves at 6 months were created in relation to their ED final scores. A Mann-Whitney U Test was performed comparing RUI in dogs with and without ED. P value $<0,05$ was considered significant.

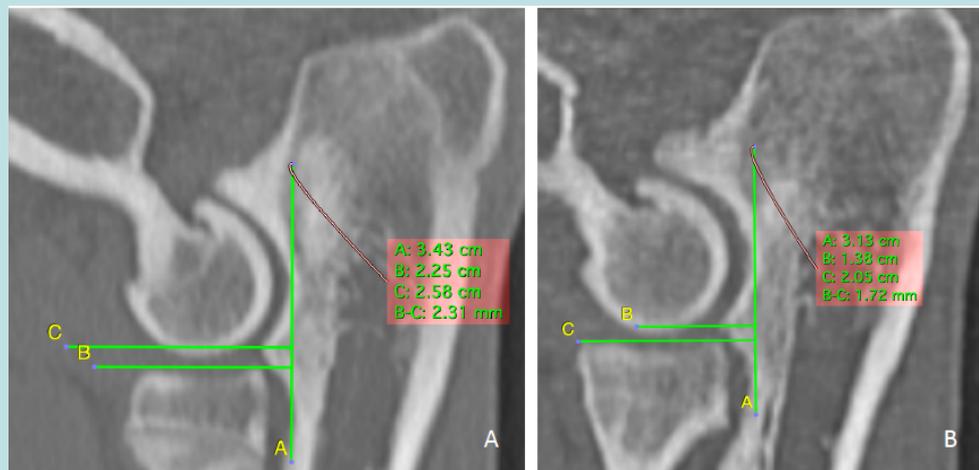


Figure 1: moderate radio-ulnar step in a 6 months old German shepherd dog (A), and the same elbow at 12 month of age (B) with mild improved RUI.

RESULTS

At 6 months of age, RUI indicating a shorter radio was detected in 24 elbows (35.3%). Eight of these RUI improved over time. (Figure 1)

At 12 months of age, 17 elbows (25%) were accounted for the presence of a quantifiable RUI. At 12 months, out of the 15 elbows with a positive RUI, 12 had a fragmented coronoid process. A dog with bilateral ununited anconeal process had RUI with a shorter ulna. (Figure 2)

ROC curves revealed a discreet accuracy. At 6 months of age, radio-ulnar steps were significantly higher in subjects with later development of ED (P value of 0,004).



Figure 2: negative radio-ulnar step in a 6 months old German shepherd dog elbow with UAP.

CONCLUSIONS

Our results suggest that in this group of GSDs, the presence of a step at six months of age could be an early indicator of underlying coronoid pathology; nonetheless, further studies are needed.