Short-term and long-term effects of a minimally invasive transilial vertebral blocking procedure on the lumbosacral morphometry in dogs measured by computed tomography.

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Abstract

OBJECTIVE: To determine the effects of a minimally invasive transilial vertebral (MTV) blocking procedure on the computed tomographic (CT) appearance of the lumbosacral (L7/S1) junction of dogs with degenerative lumbosacral stenosis (DLSS).

STUDY DESIGN: Prospective study.

ANIMALS: 59 client-owned dogs with DLSS.

METHODS: Lumbosacral CT images were acquired with hyperextended pelvic limbs before and after MTV in all dogs. Clinical follow-up was obtained after 1 year, including a neurologic status classified in 4 grades, and if possible, CT. Morphometric measurements (Mean ± SEM) including foraminal area, endplate distance at L7/S1 and LS angle were obtained on sets of reformatted parasagittal and sagittal CT images.

RESULTS: The mean foraminal area (ForL) increased from 32.5±1.7 mm² to 59.7±1.9 mm² on the left and from 31.1±1.4 mm² to 59.1±2.0 mm² on the right (ForR) side after MTV. The mean endplate distance (EDmd) between L7/S1 increased from 3.7±0.1 mm to 6.0±0.1 mm, and mean lumbosacral angle (LSa) from 148.0±1.1° to 170.0±1.1° after MTV. CT measurements were available 1 year postoperatively in 12 cases: ForL: 41.2±3.1 mm²; ForR: 37.9±3.1 mm²; EDmd: 4.3±0.4 mm, and LSa 157.6±2.1° (values are mean and standard error of mean = SEM). All 39 dogs with long-term follow-up improved by at least 1 neurologic grade, 9/39 improving by 3 grades, 15/39 by 2 grades, and 15/39 by 1 grade.

CONCLUSIONS: MTV results in clinical improvement and morphometric enlargement of the foraminal area in dogs with variable degrees of foraminal stenosis.

CLINICAL RELEVANCE: MTV may be a valuable minimally invasive option for treatment of dogs with DLSS.

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