MORPHOMETRY OF NORMAL CANINE BICEPS BRACHII MUSCLE

PLECA DIVGALVAINĀ MUSKUĻA MORFOMETRIJA KLĪNISKI VESELIEM SUŅIEM

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ANOTĀCIJA. Darba mērķis bija noteikt pleca divgalvainā muskuļa (BBM) tilpumu un šī muskuļa piestiprināšanās punktu klīniski veseliem suņiem. Pētījuma dati iegūti no LLU Veterinārās klīnikas datubāzes. Mērījumi veikti liela auguma suņiem, vecumā no sešiem līdz 36 mēnešiem, kuriem elkoņa un plecu locītavās, kā arī muskuļos netika konstatētas patoloģiskas pārmaiņas. Mērījumi veikti ar *Horos 1.1.7.* medicīnas datorprogrammu. Rezultāti rāda, ka BBM piestiprināšanās punkta vidējā vērtība bija 1.277 ± 0.21 cm un šī muskuļa tilpums 40.154 ± 6.60 cm^3. Datu statistiskā analīze tika veikta ar ticamību 95%.

KEY WORDS: elbow dysplasia, coronoid process, biceps muscle

INTRODUCTION. Biceps brachii muscle (BBM) is a two-headed muscle that lies on the foreleg proximal part between elbow and shoulder joints. BBM starts from the supraglenoid tubercle and ends with two tendons attachment to the medial coronoid process (MCP) and radial tuberosity. The main BBM function is to bend elbow joint. In previous studies has been claimed that improperly developed BBM can cause compressing the medial coronoid against the radius and cause elbow dysplasia - medial coronoid disease (MCD). This study was vitally necessary for getting BBM normal values for healthy dogs and the aim of our study was to determine the volume of BBM and site of insertion to the MCP in healthy young, large or giant breed dogs.

MATERIALS AND METHODS. Data were collected between September 2014 and September 2017 from the patient database at the Veterinary clinic of the Faculty of Veterinary Medicine at the Latvia University of Agriculture. The study included twenty-four large or giant breed dogs aged 6 to 36 months old (average 20.4 months). Canine patients included Golden retrievers (37.5 %), German shepherd dogs (20.8 %), Cane Corso (12.5 %), Barnes mountain dogs (8.3%), others (20.9%) with average weight of 35.5 kg. Computed tomography examination was performed using 16 – row multi-slice CT scanner (Philips MX 16 CT scanner) using 120 kVp, 140 mA, 1 second scanning time and pitch of 0.75, with slide thickness of 2.0 mm and 0.75 mm. In most of the cases, CT examinations were performed to exclude elbow and/or shoulder joint pathologies before mating. During CT scanning, dogs were positioned in dorsal recumbence with front limbs extended cranially. CT scans were done pre and post contrast media administration. BBM volume and tendon insertion point from radial bone articular surface measurements were performed with an *Horos 1.1.7* medical image viewer.

RESULTS. Most of the dogs were males (62.5 %). Biceps brachii muscle insertion place to MCP mean value was 1.277 ± 0.21 cm and volume 40.154 ± 6.60 cm^3. No significant correlation was found between BBM morphometric measurements and sex, age. A significant ($P < 0.05$) positive, a moderate correlation was observed between BBM volume and weight.

CONCLUSIONS. It was important to obtain morphometric measurements of BBM in healthy dogs for future examinations to do a comparison between normal and MCD affected dog's values. After these measurements, we can conclude that BBM volume depends on the dog's weight and the comparison of these values is possible only in certain weight groups.