ANATOMICAL AND RADIOLOGICAL STUDY OF SOME CHARACTERISTICS OF THE PONY AND THE HORSE AUTOPODIUM

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Abstract

The investigations were performed on 10 specimens of each species horse and pony. Taken together, the anatomical region of the poney autopodium resembles that of the horse but there are some obvious features. Differences were found especially at the carpal and tarsal bones but also at the synovials of the antebrahio – carpal – metacarpal joint and less than the phalanges.

Key words: *horse, pony, carpal bones, phalanges.*

INTRODUCTION

In terms of the equine autopodial morphology, in the literature are very numerous data, but the data refer on the anatomy of this region in the pony (1,3) are more concise. Also, autopodial bones in this two species are photographed or schematized, but lake of the comparative radiological images (2,4). For this reason we conducted studies to complement existing data from two equine species.

MATERIALS AND METHODS

The studies were performed on 10 specimens of each species - horse and pony. The animals were designed for dissection and research activities in the Anatomy Laboratory of the Faculty of Veterinary Medicine, Bucharest. The autopodies were cleaned of organic debris and subjected of maceration process, after achieving of radiological images. The identification, description and homologation of formation were performed according to Nomina Anatomica Veterinaria -2005.

RESULTS AND DISSCUTION

Generally, the research has shown the significant morphological similarities between the bones of the bazipodial regions of the two species. There are still some specific elements.

So, the joint cavities of the first level of carpal bones for the radius are deeper at the horse than the pony. The joint surface of the pisiform for the radius tends to be flat, also. The ventral edge of the pisiform is placed about 0,5 cm from the level of medio – carpal joint, at pony in 7 of 10 cases. The ditch for the metacarpal bracket of the carpo – ulnar extensor appear to be shallow at pony in 50% of cases, while in horses is always well marked.

The scafo - ulnar interosseus channel has a rectilinear trajectory (Fig. 1) in horse. Because of the little guidance in medial sense of the caudal tubercle of the lunate bone, this channel is slightly medial deviated at the palmar end, in pony. (Fig. 2)

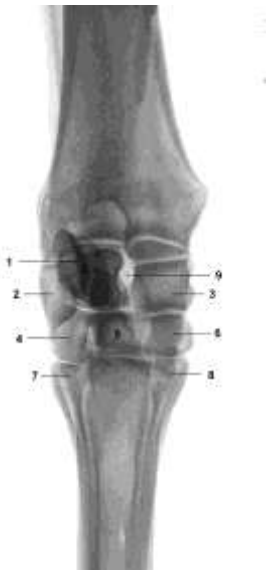

Fig. 1 The X – ray of carpal region, right member, dorsal aspect, horse
1 – the pisiform bone overlapped to lunate bone in X – ray image; 2 – pyramidal bone; 3 – lunate bone; 4 – unciform bone; 5 – capitat bone; 6 – trapezoid bone; 7 – proximal end of the rudimentary metacarpal IV; 8 – proximal end of the rudimentary metacarpal II.

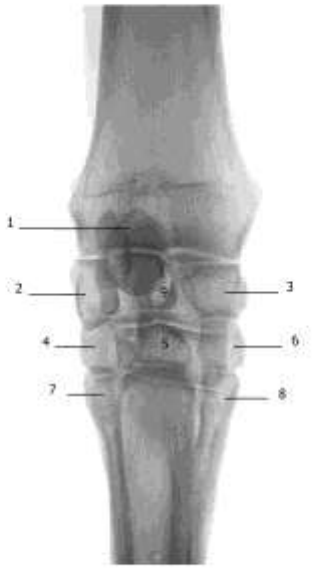

Fig. 2 The X – ray of carpal region, right member, dorsal aspect, pony
1 – the pisiform bone overlapped to lunate bone in X – ray image; 2 – pyramidal bone; 3 – lunate bone; 4 – unciform bone; 5 – capitat bone; 6 – trapezoid bone; 7 – proximal end of the rudimentary metacarpal IV; 8 – proximal end of the rudimentary metacarpal II.

Because of the flattening of the joint surfaces involved in the structure of medio - carpal and carpal – metacarpal joints, the joint capsules corresponding to these joints are less spacious in pony than the horse. This aspect is morphological reflected in the absence of the bottom side bag of the medio – carpal joint in the most cases in pony.

CONCLUSIONS

The bazipodium bones in pony are characterized by a greater degree of flattening than the horse.

The synovial bags of the medio – carpal joints and carpal – metacarpal joints are more spacious in horse than the pony.

The ratio between the extremity width of the main metacarp proximal end and the shaft width at half its is bigger at the horse than the pony.

The non – joint relief accident on palmar side of the carpal bones are out better in horse than the pony.

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