

DESCEND VARIABILITY IN THE DEEP ILIAL CIRCUMFLEX ARTERIES (A. CIRCUMFLEXA ILIUM PROFUNDA) IN BLUE FOX ALOPEX LAGOPUS (L.)

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Synopsis: The research covered 34 blue fox individuals *Alopex lagopus* (18 females and 16 males). In 38.3 % of individuals deep ilial circumflex arteries (*a. circumflexa ilium profunda*) descended symmetrically from external iliac arteries or from the abdominal aorta (Phot. 1), while in the other individuals, the descend of these vessels was asymmetrical (Phot. 2, 3).

Key words: abdominal aorta, mammalian, blue fox

INTRODUCTION

The applicable literature offers numerous publications discussing the descend of direct branchings of the abdominal aorta (*aorta abdominalis*) in dog [2, 6], cat [1], as well as in fox [4].

The presented descriptions show that deep ilial circumflex arteries (*a. circumflexa ilium profunda*) in dog, cat and fox were direct branches of the abdominal aorta. Such a descend is also presented in educational materials [3, 5, 7].

Preparing descends of the branches of the abdominal aorta in blue fox *Alopex lagopus*, it was observed that branchings of deep ilial circumflex arteries (*circumflexa ilium profunda*) showed a much greater variability than it was observed in dog, cat and fox; hence the presentation of present research results and their comparison with literary reports.

MATERIALS AND METHODS

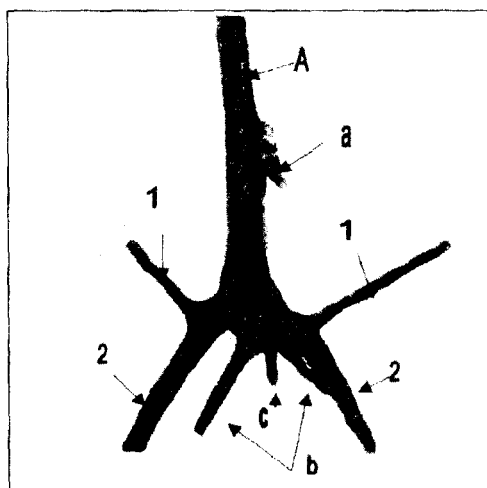
The research covered 34 blue fox individuals (including 18 females and 16 males). The research material of blue fox carcasses was provided by a blue fox farm located in the vicinity of Bydgoszcz.

The animal material obtained was filled with the synthetic latex (NB-30) introduced through the thoracic aorta (*aorta thoracica*) into the abdominal aorta, and then fixed with a 5 % formalin solution over 9 weeks, which was followed by the preparation of the arteries.

RESULTS

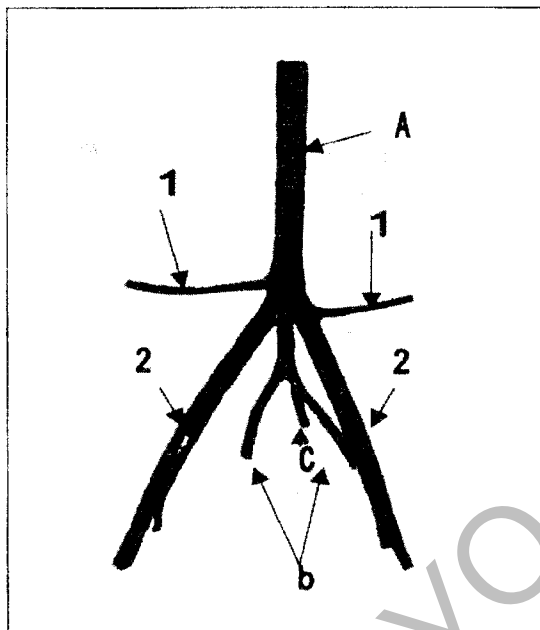
In the individuals researched, the deep ilial circumflex arteries descended both from the abdominal aorta and from the external iliac arteries symmetrically or the descend of one artery was at a different level and in such cases there was observed their asymmetrical descend.

Symmetrical descend of deep ilial circumflex arteries from the external iliac arteries was observed in 23.6 % of the individuals (Phot. 1), and from the abdominal aorta in 11.8 %. Besides in one case (accounting for 2.9 %) symmetrical arteries descended right where the aorta divided up into external iliac arteries. The material researched showed a symmetrical descend of bilateral arteries was found in 38.3 % of all the cases.



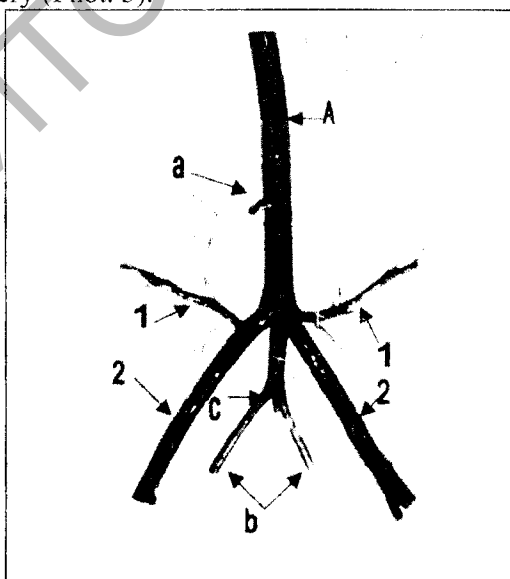
Phot. 1. Separation of deep ilial circumflex arteries *a. circumflexa ilium profunda* (1) from the initial segment of external iliac arteries *a. iliaca externa* (2) in blue fox *Alopex lagopus*. A – abdominal aorta (*aorta abdominalis*), a – caudal mesenteric artery (*a. mesenterica caudalis*), b – internal iliac artery (*a. iliaca interna*), c – median caudal artery (*a. caudalis mediana*).

Asymmetrical descend of bilateraol deep ilial circumflex arteries from the abdominal aorta, at its different levels, was observed in one individual (2.9 %). In all the other preparations, deep ilial circumflex arteries branched out from three above-mentioned places of their descend, yet one shall bear in mind that each artery descended from a different place. Here, most frequently (48.3 %) one branching descended from different places of the abdominal aorta, while the next symmetrical branch descended in different places of the external iliac artery (Phot. 2)



Phot. 2. Case of descend of arteries *a. circumflexa ilium profunda* (1), where one of the arteries descends from the abdominal aorta *aorta abdominalis* (A), while the other – from the initial section of the external iliac artery *a. iliaca externa* (2) in blue fox *Alopex lagopus*. For the other references, see Phot. 1.

More frequently, in 28.5 % cases, the abdominal aorta gave rise to the dextral deep ilial circumflex artery. In the remaining 10.5 % of all the cases, the asymmetrical deep ilial circumflex artery descended where the abdominal aorta divided into the external iliac arteries and its counterpart descended from the internal iliac artery (Phot. 3).



Phot. 3. Case of descend of deep ilial circumflex arteries *a. circumflexa ilium profunda* (1), where one of the arteries descends where the aorta bifurcates into external iliac arteries (2), and its counterpart descends directly from the external iliac artery, in blue fox *Alopex lagopus*. For the other references, see Phot. 1.

DISCUSSION

Cases of descend of these arteries exclusively from the marginal section of the abdominal aorta remain their main descend in predators [1, 7], while, as reported by Pilarski [8], in other species, a fixed descend of these vessels can be external iliac arteries.

In the blue fox individuals investigated, there were found three places of descend of deep iliac circumflex arteries. Besides the above-mentioned, there were also cases of descend of these arteries between the margin of the abdominal aorta and external iliac arteries. There have been found in the literature available no coverage on their such descend.

Besides the three main types of descend, there were observed also intermediate forms. Some of them are reported by Ventura et al. [10] in the rodent researched-garden dormouse. One shall notice that two extreme places of descend, namely, the abdominal aorta for one artery and the external iliac artery - for the other vessel, were observed in 48.3 % of the cases researched. Other dominating types were also represented by a descend from symmetrical external iliac arteries (23.6 %).

The observations presented here seem to confirm the assumption made by Wiland [9] that the range of variability of different vascular regions has its limits. The variability limits observed are determined by the gene pool. The material researched, as one can assume, it can be seen in the cases described, as the main descend, while the intermediate forms observed may suggest that their occurrence depends also on other factors. Yet the morphological investigations cannot provide any content-related answer.

Literature

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УДК 636:611

CASES OF DESCEND OF THE TRUNK OF THE CAUDAL PHRENIC ARTERY (PHRENICA CAUDALIS) AND CRANIAL ABDOMINAL ARTERY (A. ABDOMINALIS CRANIALIS) FROM THE RENAL ARTERY (A. RENALIS) IN BLUE FOX *ALOPEX LAGOPUS* (L.)

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Synopsis: The research covered 34 blue fox *Alopex lagopus* (L.) individuals (18 females and 16 males). Out of all the individuals investigated, in 4 females and in 1 male (accounting for 14.7 %) there were observed descends of the trunk of the caudal phrenic artery a. phrenica caudalis and the cranial abdominal artery a. abdominalis cranialis from the dextral renal artery a. renalis dextra. In the remaining cases, those arteries descended directly from the descending aorta.

Key words: abdominal aorta, renal arteries, mammalian, blue fox.

INTRODUCTION

Cases of descend of the trunk of the caudal phrenic artery a. phrenica caudalis and the cranial abdominal artery a. abdominalis cranialis from the renal artery a. renalis were found in different predator species. Such a descend of those arteries is reported in cat and dog by Berg [1, 2] and in silver fox by