Comparative Macroanatomic Investigations on the Formation of the External Iliac Vein in Akkaraman Sheep and Angora Goat

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The external iliac vein is formed by the deep femoral and femoral veins in both species [1, 3, 4, 6, 7], or by the femoral, medial circumflex femoral and pudendoepigastric veins because the deep femoral vein is sometimes absent in goats [2].

The deep femoral vein joins the external iliac vein proximal to the femoral canal after formation of the pudendoepigastric and medial circumflex femoral veins in sheep [3] or in both species [5]. It is reported to continue to the medial circumflex femoral vein in goats [1]. It collects blood from the pectineus and adductor muscles on the way.

The femoral vein is constituted by the lateral circumflex femoral, medial saphenous, descending genicular and caudal femoral veins, and joins the external iliac vein as soon as it passes through the femoral canal [1, 3]. Besides, it collects venous blood from the pectineus and adductor muscles in both species [1, 3] and receives the pudendoepigastric vein in goats [1] or in both species [6].

MATERIALS AND METHODS

A total of 8 adult healthy Akkaraman sheep and 8 Angora goats of both sexes were used as materials. They were native breeds in Turkey, 3 to 4 years of age, and weighed between 45–50 kg. They were anaesthetised with 0.006 mg/kg xylazin HCl (Rompun®-BAYER) and 4.4 mg/kg ketamin HCl (Ketanez®-ALKE), exsanguinated via the common carotid artery without consciousness. After opening of the abdominal cavity, plastic tubes were inserted and tied to the vena cava immediately caudal to the renal vein in a caudal direction. The vessels were rinsed with 0.9 % physiological saline. Blue (Setacolor™, cobalt blue, num. 20, PEBEO, France)-coloured latex (Rubber latex™, MERCAN, Istanbul) were injected into the vena cava. The formation of the external iliac vein was revealed and photographed.

RESULTS

The external iliac vein was a main vein collecting venous blood from the pelvic limb in sheep and goats. Previous anatomical descriptions concerning this vein in sheep and goats are rather superficial and/or conflicting. In our study, therefore, we aimed to describe the formation of the external iliac vein in Akkaraman sheep and Angora goats.

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the external iliac vein in 2 Akkaraman sheep (Figs. 1, 2) and 1 Angora goat (Fig. 3). Leaving the femoral canal between 2 pieces of the sartorial muscle, it ran approximately 1.5 cm in a craniodorsal direction and joined the external iliac vein (Figs. 1–3). The femoral vein had a valve immediately proximal to the leaving point from the femoral canal in both species.

DISCUSSION

The formation of the external iliac vein in 6 Akkaraman sheep and 7 Angora goats is in agreement with the references [1, 3, 4, 6, 7]. Although the external iliac vein was also reported to receive the pudendoepigastric vein in sheep [6] and the deep circumflex iliac vein in goats [1, 7], similar findings were not detected in our study.

The observations related to the constitution of the deep femoral vein were similar to those of the references [3, 4] in 6 Akkaraman sheep and 7 Angora goats, but the deep femoral vein was absent in the remaining materials.

In both species, the slender branches originating from the medial vastus muscle were detected to contribute to the formation of the femoral vein in addition to the references [1, 3, 5].

In conclusion, it was found that the formation of the external iliac vein is variable in sheep and goats. The results obtained in this study seem to shed light on the future studies on the venous system, surgical treatments in pelvic limb...
and proper diagnosis of pathologic disorders related to the venous vessels, and to contribute considerably to the present anatomical knowledge in point of the concerned vein in sheep and goats.

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REFERENCES