Anatomic variations

**Rare arterial variation: a common trunk from the external iliac artery for the obturator, inferior epigastric and profunda femoris arteries**

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**Abstract**

In this anomaly, observed in the right pelvic region of a female newborn cadaver among 100 studied (1%), a common arterial trunk arose from the medial side of the external iliac a. 1 cm proximal to the inguinal ligament. The trunk first divided into an ascending branch, which finally divided into the obturator and inferior epigastric arteries, and a descending branch, the profunda femoris a. from which arose the medial circumflex femoral a. The origin of the profunda femoris, obturator and inferior epigastric aa. is explained on the basis of the embryologic development and their course and variations are compared with reports in the literature.

**Case report**

In this anomaly, observed in the right pelvic region of a female newborn cadaver among 100 studied (1%), a common arterial trunk arose from the medial side of the external iliac a. 1 cm proximal to the inguinal ligament. The external iliac a. was crossed by the genital branch of the genitofemoral n. and the round ligament, and at this level the exteran iliac v. was medial to it. The common arterial trunk first divided into an ascending branch, which finally divided into the obturator and inferior epigastric aa., and a descending branch, the profunda femoris a., from which arose the medial circumflex femoral a. (Fig. 1). The inferior epigastric a. had its normal course and relationships in this case. The obturator a. initially followed a medial course, passing over the external iliac v. The obturator a. supplied the muscles of the inner wall of the pelvis and had two pubic branches to the symphysis. It then continued inferomedially on the lateral pelvic wall to the upper part of the obturator foramen, leaving the pelvic cavity through the obturator canal with the obturator nerve (Fig. 2). After traversing the obturator canal, the obturator a. divided into an anterior branch to the adductor mm. and a posterior branch to the hip-joint.
The profunda femoris a. arose from the common trunk originating from the medial side of the external iliac a. together with an ascending branch which divided into the inferior epigastric and obturator aa. It ran downward and medially on the medial side of the external iliac a. (Fig. 1). It gave off the medial circumflex femoral a. just after passing under the inguinal ligament. The course and distribution of the profunda femoris a. were normal and the number of its perforating aa. were three, which did not include the end of the profunda femoris a. The medial circumflex femoral a. arose from the medial side of the profunda femoris a., with a normal course and distribution.

Discussion

Interesting anomalies in the origin and course of the principal aa. of the lower limbs have long received the attention of anatomists and surgeons. They usually result from embryologic abnormalities of the arterial network of the lower limb. When the embryo is 10 mm long, the sciatic a. traverses the sciatic plexus and forms the main a. of the lower limb [7]. It persists in most vertebrates, but in mammals the femoral a., as the continuation of the external iliac a., becomes the main a. for the lower limb. Very early, anastomoses are formed between the dorsal sciatic and ventral femoral aa. When the main supply to the popliteal a. comes from