

A Rare Variety of Origin of Obturator Artery- A Case Report

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ABSTRACT

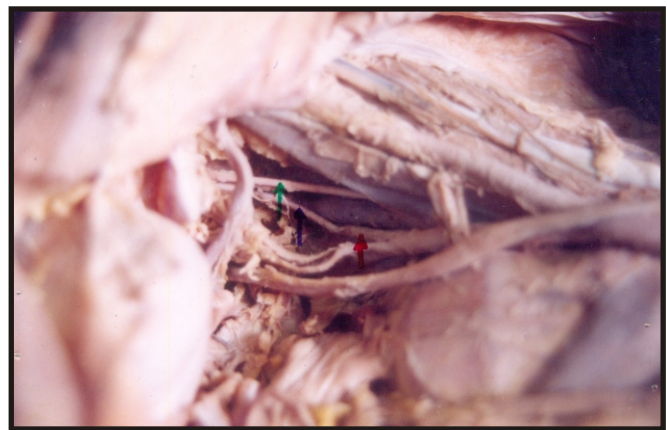
A rare variety of origin of obturator artery was found while doing dissection on a 54-year-old Indian male. The artery originated from the posterior division of the internal iliac artery. The rest of its course, as well as other branches of the internal iliac artery were normal. Knowledge of such a variation in the origin of obturator artery is important while doing various gynecological, surgical and orthopedic operations. Obturator artery develops due to uneven growth of the anastomosis between developing internal and external iliac arteries. Obturator artery is last to develop amongst the branches of internal iliac artery. This is likely to be the cause of such a variation.

KEYWORDS: Obturator artery, Internal iliac artery, External iliac artery

Internal iliac artery divides into two divisions from which various branches arise within the pelvis. One of them is obturator artery, which usually arises from the anterior division. It traverses along the lateral pelvic wall, being crossed by ureter medially. In male and female vas deferens and ovary lie in its medial relation respectively. Within the pelvis it gives iliac, vesical and pubic branches. It divides into an anterior and posterior branch at obturator foramen and enters inferior extremity (Pick et al 1942). Posterior branch of it gives an acetabular branch, which enters the hip joint. The artery is important in various gynecological and orthopedic operations. Variation of origin of the obturator artery had been reported by Adachi (1928); Braithwaite (1952); Pick et al (1942) but very rarely it was found to arise from the posterior division of internal iliac artery.

CASE REPORT

During routine dissection for undergraduate teaching, of an intact formaldehyde preserved cadaver of a 54-year-old Indian male, a rare variation of origin of obturator artery had been revealed. The artery started from the posterior trunk of internal iliac artery. The rest of its course was normal. It was crossed by ureter as well as the vas deferens. This anomaly was present on the left side only, right side being normal. Other branches of the internal iliac artery were normal. We found this type of origin of obturator artery after dissecting 60 cadavers over a period of 6 years, the incidence rate being 1.66%.



DISCUSSION

Figure 1- Showing the view of the left side of the pelvis. Pick et al (1942) had dissected 60 cadavers to study the variation of origin of obturator artery. He found the variation of the internal iliac artery (red arrow) is accompanied by the obturator nerve (green arrow). inferior epigastric artery and in only 03% from posterior division of internal iliac artery. Braithwaite (1952), after dissecting 169 cadavers did not find a single obturator artery originating from posterior division, though in 41% (highest) it was originating from the anterior division of internal iliac. Various workers had reported other variations of origin of the obturator artery, but we did not come across any reported case similar to ours. Knowledge of variation in the origin of the obturator artery is important while doing pelvic and groin surgeries requiring appropriate ligation and such aberrant origins may be a significant source for persistent bleeding in the setting of acute trauma. Itokazu had emphasized importance of obturator artery (1997) for successful rotational acetabular osteotomy (ROA) because of its supply of the acetabulum.

Developmental explanation

The right and left dorsal aortae fuse caudal to the tenth dorsal intersegmental artery during fourth week of foetal life to form the descending aorta. The

stem of the umbilical artery, the specialized ventral segmental branch, on each side degenerates and a new stem forms by way of an anastomosis with the fifth lumbar dorsal intersegmental artery. This new stem persists as the common iliac artery and gives off branches that become the external and internal iliac arteries (Strandring 2005). Definitive obturator artery forms as a result of uneven growth of anastomosis of external and internal iliac arteries that is connected with peculiarities of regional organogenesis (Petrenko 2000). The obturator artery arises comparatively late to supply the medial side of the thigh. Thus it may be the cause of such wide variation in its origin.

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