

Common Iliac Artery Lying Posterior to Psoas Major Identified During Kidney Transplantation

A 22-year-old man with congenital renal dysplasia underwent cadaveric renal transplantation.

Operative Findings

The right iliac vessels were exposed in standard manner through a hockey stick incision using an extra peritoneal approach. The right external iliac vein was identified but the common and external iliac arteries were not immediately obvious. The right femoral pulse was present. The patient previously had a computerized tomography scan that was reviewed, which revealed the common iliac artery lying behind the psoas major muscle (Fig. 1A).

On further examination, arterial pulsations were felt over the psoas major muscle (Fig. 1B). The psoas muscle was split along the fibers and the artery was exposed (Fig. 1B). The common iliac artery had a low bifurcation in the pelvic floor. The end of renal vein was anastomosed to the side of external iliac vein.

The renal artery was anastomosed end to side to the common iliac artery (Fig. 1B). The kidney made urine shortly after reperfusion. The ureter was spatulated and anastomosed to the bladder mucosa to create an extra vesicular uretero neo-cystostomy.

Postoperatively the patient received tacrolimus, mycophenolate mofetil, and prednisolone. The serum creatinine at 1, 3, 6, and 8 months was 1.3, 1.3, 1.3, and 1.1 mg/dL, respectively. The blood urea nitrogen at the same time point was 30, 26, 22, and 26 mg/dL.

The common iliac and external iliac arteries are derived from the umbilical arteries at the end of fourth week of gestation. From the umbilical artery develops a branch named axial artery which is the embryonic main artery. The initial segment of the umbilical artery then becomes the common iliac artery by connecting with the fifth lumbar intersegmental branches of the aorta (1).

Anatomy

The common iliac arteries originate at the aortic bifurcation (L4) and pass along the medial edge of psoas major muscle, in close relation to the iliac vein.

The external iliac artery continues on the psoas muscle along the pelvic brim to pass beneath the inguinal ligament to become the femoral artery. External iliac artery is accompanied by external iliac vein and remains superficial and lateral to the vein.

Congenital anomalies involving the external iliac artery were subdivided into three groups by Greebe (2).

1. Anomalies of origin or course—usually discovered incidentally.
2. Hypoplasia or atresia coexisting with persistent sciatic artery.
3. Isolated hypoplasia or atresia which can occasionally cause chronic ischemia of the lower limbs, also described by Tamisier et al. (3) in 1990.

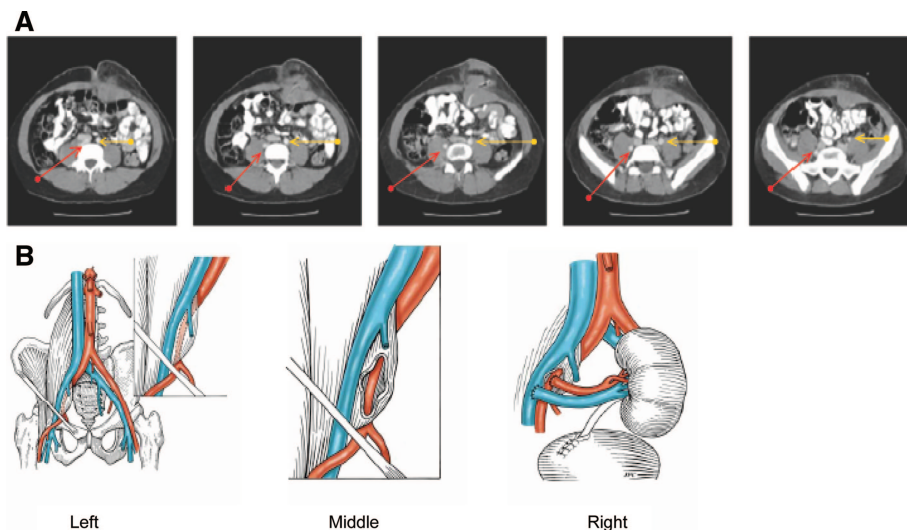


FIGURE 1. (A) Sequential axial images (*right to left*) of the pelvis on computerized tomography. The common iliac artery is seen behind the psoas major muscle on the right, while on the left side, the artery is seen anterior to the psoas major. Arrow key: Red arrow, Rt. iliac artery behind psoas muscle; Yellow arrow, Lt. iliac artery anterior to psoas muscle. (B) (*Left*) Right common iliac artery behind the psoas major (inset—magnified view). (*Middle*) Exposure of the right iliac artery by splitting the psoas muscle. (*Right*) Final anastomosis of the renal vessels and the ureter.

Anomalies in the Course and Origin

An anomalous common iliac artery was reported in two postmortem cases. In one, the artery was retro-caval, posterior to the psoas and quadratus lumborum and bifurcated in the femoral and internal iliac deep into the internal iliac fossa. Similar anomaly was reported by Sonneveld et al. (4) during a surgery for abdominal aortic aneurysm.

Vohra and Leiberman (5) reported a retro psoas iliac artery presenting as an iliac stenosis with intermittent claudication in a young woman. A bypass graft successfully corrected the anomaly.

In another report, the external iliac artery arose directly from the infra renal aorta. According to Dubreuil-Chambardel (6), this anomaly is associated with the absence of ipsilateral umbilical artery.

In the present case the course of the artery was posterior to the psoas major muscle, found intraoperatively and confirmed by retrospective examination of the computerized tomography scan.

It is postulated that the anomalous course of the external iliac artery depends on the presence of the umbilical artery and its fusion with the intersegmental branches of the aorta.

Vascular malformations involving the common, internal, and external iliac arteries are rare. The anomalies in the course and origin are usually asymptomatic and discovered incidentally during surgery or radiological investigations. These anomalies do not pose any diagnostic or therapeutic problems and can be corrected intraoperatively. In this case, access to the common iliac artery was gained through splitting of the psoas major muscle.

Ashok Jain
Vrshali P. Patil
Peter Horton

Division of Solid Organ Transplant
Department of Surgery
University of Rochester Medical Centre
Rochester, NY

Nikhil Patel

Department of Radiology
University of Rochester Medical Centre
Rochester, NY

Randeep Kashyap
Georgios Tsoulfas
Mark Orloff
Adel Bozorgzadeh

Division of Solid Organ Transplant
Department of Surgery
University of Rochester Medical Centre
Rochester, NY

None of the authors received any funding support. Address correspondence to: Ashok Jain, M.D., F.A.C.S., Division of Solid Organ Transplant, Department of Surgery, 601 Elmwood Avenue, Box Surg. Rochester, NY 14642-8410.

E-mail: ashok_jain@urmc.rochester.edu

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De Novo or Persistent Pseudomonas Airway Colonization After Lung Transplantation: Importance for Bronchiolitis Obliterans Syndrome?

Recently, Botha et al. (1) showed that de novo colonization of the lung allograft by *Pseudomonas* is strongly associated with the subsequent development of bronchiolitis obliterans syndrome (BOS) after lung transplantation (LTx). This is an interesting and an important finding; however, we can hardly agree with the authors' statement that persistent colonization "does not seem to predispose to the development of BOS." In fact, we recently also demonstrated that pseudomonas airway colonization after LTx indeed is a risk factor for BOS (2), which is corroborated by the authors' results. Yet, re-analyzing the data from our study demonstrated results that are exactly opposite to those of the authors', namely freedom from BOS was significantly shorter mainly in those patients with persistent (i.e., with an existing pseudomonas reservoir present pre-transplant, as defined by the authors)

airway colonization, whereas the patients with de novo colonization after LTx seemed to have a somewhat better BOS-free survival (Fig. 1). In both stud-

ies, LTx recipients with persistent colonization were mainly cystic fibrosis (CF) patients and those with de novo colonization were mainly patients with chronic

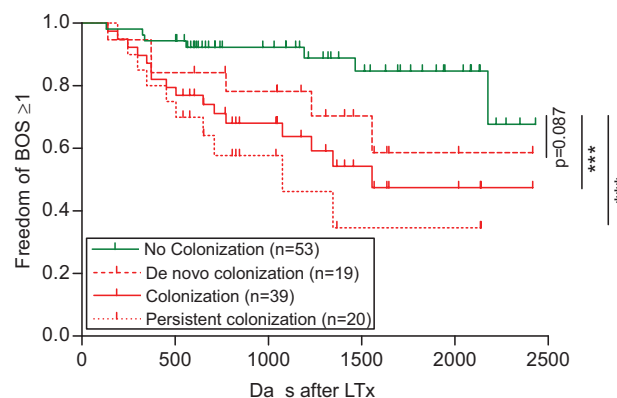


FIGURE 1. Freedom from BOS ≥ 1 of all recipients ($n=92$), dichotomized to presence ($n=39$) (de novo, $n=19$ vs. persistent, $n=20$) or absence ($n=53$) of pseudomonas airway colonization after LTx. Survival curve was censored to survival at 3 months, *** $P<0.001$.