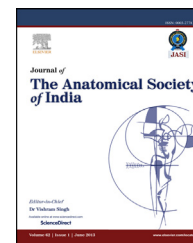


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Case Report

Complete bilateral transposition of femoral vessels: A rare case report

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ABSTRACT

Introduction: Anomalies of the femoral vessels occur in only 0.02% of the population, most of them being asymptomatic. The study highlights the anomalies of femoral vessels in the femoral triangle and the importance of their recognition intra-operatively to prevent injuries.

Materials & methods: Here we present a case of bilateral transposition of femoral vessels in the femoral triangle, which was detected during groin dissection in a case of carcinoma penis with inguinal lymph node metastasis.

Observation: We detected the anomalous transposition intra-operatively during groin dissection on the left side and the right sided anomaly postoperatively by CT angiography.

Conclusion: The importance of this anomaly lies in procedures for which vascular access is needed through the femoral vessels and groin surgeries like Trendelenburg operation for varicose veins where not appreciating these anomaly could lead to inadvertent vascular injury or bleeding.

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1. Introduction

Anomalies of the vessels within the femoral triangle have been widely reported, mainly involving the long saphenous vein and its tributaries,¹ whereas anomalies of the main femoral vessels have been reported to be about 0.02%.^{2,3} Most of these anomalies are clinically silent and are discovered during surgeries for unrelated conditions or autopsy.

We report a case of bilateral complete transposition of the femoral artery and vein in a case of carcinoma penis.

2. Case report

A 51-year-old male patient, a known case of carcinoma penis with partial amputation of penis presented with bilateral inguinal lymph node metastasis with left side sinus formation after one and half years of surgery.

On evaluation the patient also had pelvic lymphadenopathy and bony metastasis at presentation discovered during computerized tomography. We did a left sided complete groin dissection with tensor fascia lata rotational flap coverage with palliative intent.

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A lazy “S” shaped incision centered on the involved skin area was used and about 12 10 cm of skin was resected. The disease was infiltrating into the LSV and its junction with the femoral vein, hence an R2 resection was done. The wound was closed with a tensor fascia lata rotational flap over a continuous suction drain.

We also noted that the femoral vein was lateral to the femoral artery all along its course in the Scarpa’s triangle. The long saphenous vein was crossing the femoral artery from medial to lateral side at level just proximal to the fossa ovalis to drain into the femoral vein (Fig. 1).

Postoperative period was uneventful, drain was removed on day 10 and patient was transferred to radiotherapy department for palliative care.

Postoperative CT angiogram showed that the femoral vein was lateral to the femoral artery on both sides (Fig. 2).

3. Discussion

The sciatic or axial artery arises from the dorsal aspect of the umbilical artery in the 6 mm embryo to supply the lower limb bud. Cephalad from that point, the umbilical artery, which eventually becomes the common iliac artery, gives rise to the external iliac artery. In the 10 mm embryo, the femoral artery begins to form as a branch of the external iliac artery. At 14 mm, the sciatic and femoral arteries are fully developed, communicating with each other at the level of the popliteal artery, resulting in a dual blood supply. From 14 to 24 mm, progressive development of the femoral system occurs as the sciatic artery regresses and becomes discontinuous. At 6 weeks of development (24 mm), the remnants of the sciatic artery have given rise to the inferior gluteal artery, the third and fourth perforating branches of the deep femoral artery, the popliteal artery, peroneal artery, and proximal portion of the anterior tibial artery. The humoral events that stimulate this development are unknown.⁴

The femoral artery begins immediately behind the inguinal ligament, midway between the anterior superior spine of the ilium and the symphysis pubis, and passes down the front and

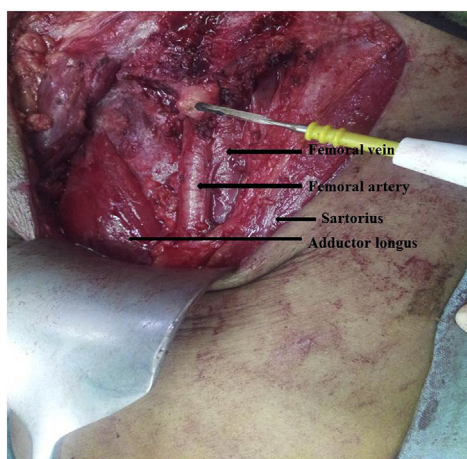


Fig. 1 – Left femoral triangle after palliative lymphadenectomy showing femoral vessels transposition. Cautery tip on the transected saphenous vein.

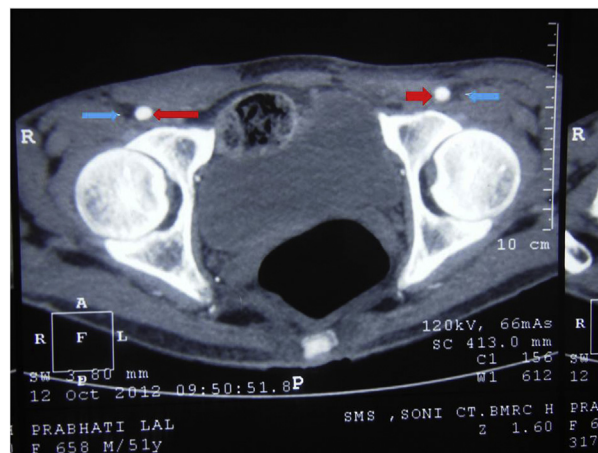


Fig. 2 – CT angiography showing bilateral transposition of femoral vessels. Red arrows showing femoral artery and blue arrow femoral veins.

medial side of the thigh. It ends at the junction of the middle with the lower third of the thigh, where it passes through an opening in the Adductor magnus to become the popliteal artery. The femoral vein lies medial to the femoral artery in the femoral canal and the upper part of the Scarpa’s triangle and gradually comes lie on the lateral side of the artery at the apex of the triangle passing posterior to it.⁵

In our case the femoral vein were found lateral to the femoral artery all along the femoral triangle.

The importance of this anomaly and other anomalies lies in the surgeries of the groin like high ligation of the saphenous vein for sapheno-femoral junction incompetence, inguinal lymphadenectomies, and femoral artery cannulation for cardiac procedures or other interventional radiology procedures. The incidence of iatrogenic vascular complications in varicose vein surgeries is low (0.0017–0.3%) and out of the 81 patients suffering from 87 vascular injuries—44 arterial and 43 deep vein injuries.³

Conflicts of interest

All authors have none to declare.

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