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Bilateral hypoplastic or aplastic posterior tibial artery

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Clinical Image Description

The popliteal and Peroneal Arteries (PR) arise from the sciatic artery (primary limb bud artery) whereas the Anterior Tibial (AT) and Posterior Tibial (PT) arise from the femoral artery. Being a derivative of the sciatic artery, PR is constant. Usually PR terminates above the ankle and divides into anterior or posterior communicating artery which anastomoses with the AT or PT respectively. Arrest in embryonic vascular development determines variations in popliteal artery branching patterns. In case of hypoplastic or aplastic PT {incidence is 0.8-3.8 %,} the PR is hypertrophied and either reinforces the PT below the ankle through perforators or replaces the PT and continues as the lateral plantar with medial plantar being absent. Probability of bilateral manifestation in people bearing this variation is upto 30%. Awareness of this variation is important while performing arterial reconstructions in femorodistal bypass graft procedures, during surgical clubfoot release or free fibular flap surgery.

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Figures

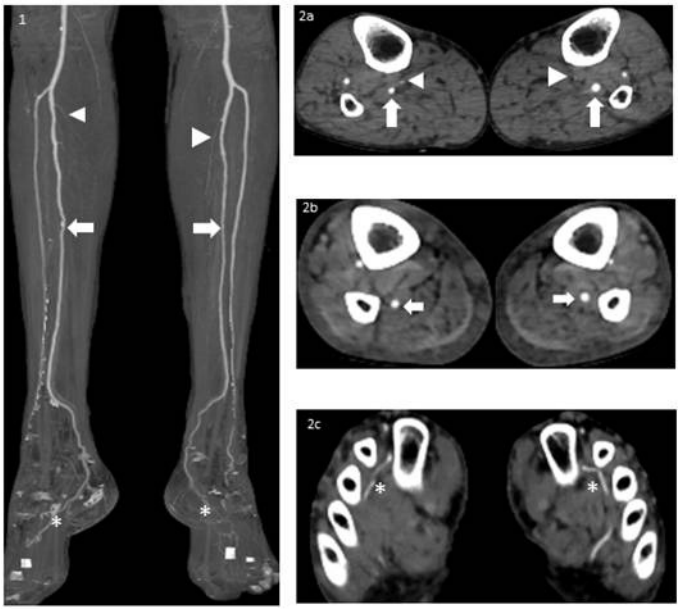

Figure 1: Preplanning free fibular flap surgery MIP coronals (1) & axial CTA images from the knees below at corresponding levels (2a,2b,2c) in a case oral cancer being evaluated for mandibular reconstruction demonstrating hypoplastic posterior tibial artery (arrowheads), enlarged peroneal artery (arrows) continuing as the lateral plantar artery