

Original Article

AN ANATOMICAL STUDY ON DORSALIS PEDIS ARTERY

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ABSTRACT

Background: The study of Dorsalis pedis artery and variations in its branching pattern has been reported sporadically. The purpose of this study was to evaluate the arterial supply on the dorsum of the foot.

Materials and Methods: The study was carried out on forty two dissected limbs of unknown sex and age from the department of Anatomy, BMCRI, Bangalore. **Results and Discussion:** The incidence of classical text book description was found to be very less in the present study. In 16.67% of cases the arcuate artery was completely absent, which was compensated by two large lateral tarsal arteries that provided the dorsal metatarsal arteries. In 9.52% of cases the dorsalis pedis artery was absent. **Conclusion:** The findings suggest that the lateral aspect of the dorsum of the foot has a poor nourishment.

KEYWORDS: Dorsalis Pedis Artery; Vascular Anatomy; Flap Reconstruction.

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INTRODUCTION

The main function of the foot is to support the body during locomotion and quiet standing. The evolved human foot is designed in such a way that it is more resilient, can adapt to both even and uneven surfaces. The foot is more prone for injuries in day to day life like diabetic foot, peripheral arterial disease, industrial hazards, etc., where a need may arise for a vascular surgery for amputation. A detailed knowledge about the vessels of the foot and its variations is needed in such situations. The arterial feeders for the foot are derived from dorsalis pedis artery and its branches on the dorsal aspect, and by the medial and lateral plantar artery and their branches on the plantar aspect.

The dorsalis pedis artery is the continuation of anterior tibial artery. It begins on the anterior

surface of the ankle joint, and runs with the deep peroneal nerve, deep to the inferior extensor retinaculum and extensor hallucis brevis, to the proximal end of first intermetatarsal space. Here it divides into arcuate artery and first dorsal metatarsal artery. It gives medial and lateral tarsal branches to the tarsal bones and extensor digitorum brevis. The arcuate artery runs laterally across the bases of the metatarsals deep to the extensor tendons, and gives a dorsal metatarsal artery to each of the other intermetatarsal spaces. Each of these communicates through the proximal end of the intermetatarsal space with the perforating branches of plantar arch. Each dorsal metatarsal artery runs forwards on the corresponding dorsal interosseous muscle and forms the dorsal digital artery in each of adjacent toes [1].