

### Posterior Tibial Artery Perforator Flap Series of Cases

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**Purpose:** The coverage defects in the leg are a difficult problem to face due to the specific characteristics of the anatomic area. In the past different reconstruction alternatives were developed, with the fasciocutaneous perforators flaps being the most frequently used nowadays. The aim of this case series is to present a therapeutic alternative and to describe the results and complications of the posterior tibial artery perforator flap (PTAPF) for the treatment of coverage defects.

**Methods:** We performed a retrospective review of patients treated with a fasciocutaneous flap, including 12 patients with soft-tissue defects on the anterior face of the leg in whom the surgical reconstruction had been specifically performed with a PTAPF. The most important preoperative variables analyzed were type of defect and the indication for this flap and not another alternative. The intraoperative variables studied were the size of the skin paddle and the rotation degrees of the flap. Lastly the postoperative variables analyzed were the complications defined as venous congestion, partial or total necrosis, and the flap survival.

**Results:** 12s patient treated with PTAPF were included. The average age at the surgery time was 52 years (range, 29-77). The type of soft-tissue defects suffered by the patients were: 7 patients underwent wound necrosis, 3 patients underwent an active fistula, and 2 patients with soft-tissue defects. In the proximal and in the third half defects we choose to preserve the muscles, performing the PTAPF. Furthermore the aesthetic result was mostly satisfactory. In the distal area, the choice of this flap was due to therapeutic limitations regarding the vascular aspect. Two patients already had a previous sural flap, while the other patient had an injury in the peroneal artery. The remaining 3 patients did not show good perforators at the pulsed Doppler sonography. Summarizing, the flap influence area was of 2 flaps for the proximal third of the leg, 4 flaps for the middle third, and 6 for the distal third. The rotation degree was different according to each case being from 45° to 180°. The average size of the skin paddle was 12 x 5 cm (range, 16 cm x 4 cm). In the postoperative evaluation there were 2 flaps with distress due to congestion, but it resolved in a brief period, a partial failure, and a total failure. The maximum follow-up was 55 months and a minimum of 5 months (average, 18 months).

**Conclusion:** The posterior tibial artery perforator flap will be considered a relevant option to treat small to medium size defects from the proximal third to the distal third of the leg. It provides tissue similar to the recipient area in thickness, texture, and pigmentation, with little morbidity in the donor site resulting in good clinical and aesthetic outcomes. At the same time, it is used when it is not possible to use a reverse flow sural flap or as a rescue in case such a flap fails.