

Plantar resurfacing is still a challenge. This is a specialized kind of skin, resistant but sensate, with a specialized tissue for absorbing trauma, fat packed in bags of fibrotic tissue, absence of melanocytes, glabrous skin, with a big layer of keratocytes but still sensitive. The ideal flap is obviously the medial plantar flap. However, one flap is suitable only for target areas under the heel or the metatarsal heads. It's small for a complete coverage of the plantar surface (Fig.1). And when tumoral disease affects one plantar surface, double flaps are unsuitable.

Classically in our Institution, we employ muscular free flaps as latissimus dorsi(Fig.2,3), anterior serratus and reto abdominus muscles associated with partial skin graft. The results were considered satisfactory, otherwise transibital amputation would be the alternative. As time goes by, however, we've observed the raise of ulcer's rate on the flap. And we've noticed clear degeneration of results with long term follow-up (above 5 years). Muscular atrophy, adipose degeneration of muscle fibers, bone spurs, plantar corns are more often with the years from the reconstructive surgery. In some instances, it seems that at 5 years after surgery only a thin lamina of skin graft could be observed under the foot. The advent of perforator flaps brings the sensitive ALT flap.



Figure 1. A, B, C, D.



Figure 2.



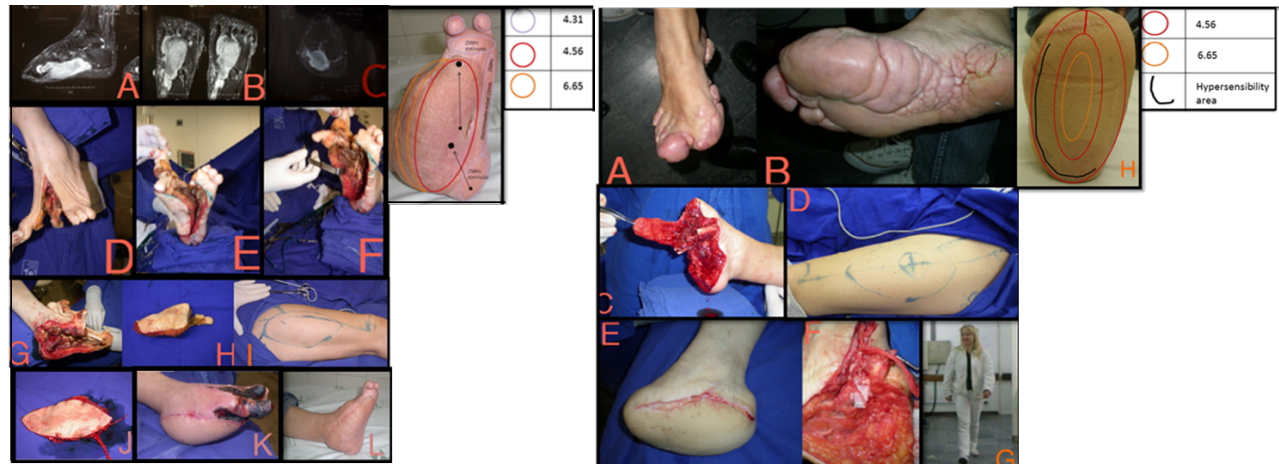
Figure 3.

Sensory ALT Flap for Extensive Plantar Resurfacing in Non--traumatic Patients. Functional Outcomes.

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In this two case series we have achieved reliable protective sensibility. This was accessed by Semmes Weinstein monofilament static and Weber two point discrimination texts. The protective skin sensibility seems to be the key to avoid ulceration. Functional outcomes are also promising. And we've observed in these 2/3 years of follow-up an adaptation or metaplasia of skin without degeneration of its thickness. No bone spurs were seen after 2/3 years in foot lateral X-ray of the patients. The sensitive ALT flap was a reliable surgical treatment in two patients presented. Bigger series and long term follow-ups of patients anyway are necessary to completely retire the muscular flaps in plantar resurface.



Case Report 1 –Synovial Sarcoma.A,B,C MRI. D,E,F,G- Tumor resection .H- specimen.I,J-ALT flap with cutaneous nerve dissected.K- Early necrosis of the hallux. L- Late results

Case Report 2 – Proteus Syndrome. A,B- Typical lesion on the foot.Expanding and deforming. C- Amputation of the affected fingers and plantar skin resection.D- Surgical planning. E,F- Second surgery-Thinning of the flap associated with neurotization of the calcaneal branch of the tibial nerve to the lateral femoral cutaneous nerve. G- Patient walking properly.