

CORRESPONDENCE AND COMMUNICATION

The circumflex scapular artery perforator flap for palm reconstruction in a recurrent severe case of Dupuytren's disease

The circumflex scapular artery perforator (CSAP) flap has recently been suggested as a reliable free flap for use in

upper limb reconstruction.¹ To our knowledge, it has not been previously employed for a palm defect. We report a case where the CSAP flap was used successfully to reconstruct a large palm defect in severe Dupuytren's disease.

A 55-year-old, right-hand-dominant patient with Dupuytren's diathesis presented with recurrent disease and disabling contractures affecting the palm, first web, middle, ring and little fingers of his dominant hand. He had undergone eight procedures for Dupuytren's disease, with

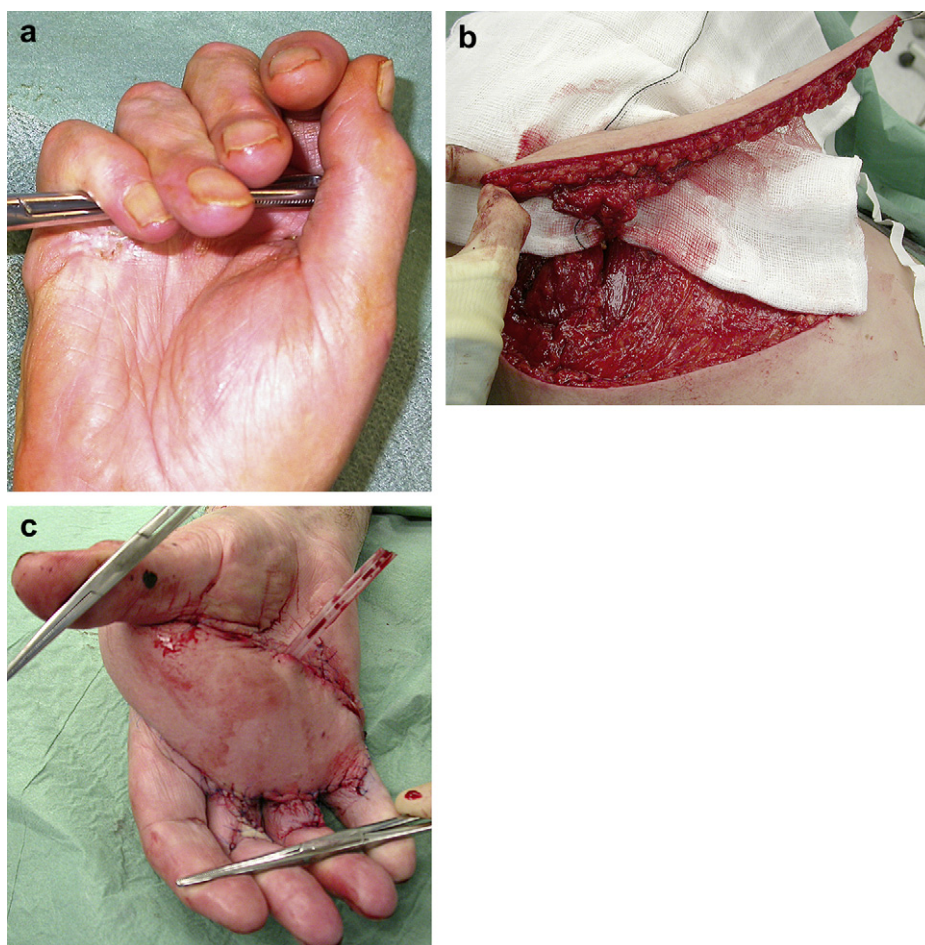


Figure 1 Intra-operative views. (a) Severe fixed flexion deformities. (b) The CSAP flap prior to thinning and division of its vascular pedicle. (c) CSAP flap inset into palm with single drain.

the two most recent procedures to his right hand being fasciectomy 7 years previously and dermofasciectomy 4 years previously. He had fixed flexion deformities of 45–90° at the metacarpophalangeal joints and 90–100° at the proximal interphalangeal joints (Figure 1a). He had no radial vascular supply to his hand following an injury. Radical dermofasciectomy resulted in a 6 × 11-cm palm defect. A CSAP free flap was elevated.¹ A perforator was identified 2 cm lateral to the mid-lateral border of the scapula using a Doppler probe. An oblique skin paddle was marked, incorporating the thinner back skin. A 6 × 18-cm CSAP flap was harvested with a 2 × 3-cm cuff of deep fascia (Figure 1b). The perforator arose 1 cm distal to the bifurcation of the CSA from the transverse branch. The remainder of the flap was raised on the surface of the fascial layer separating the superficial and deep adipose layers. The artery was dissected proximally with its single venae comitans, providing a 7-cm pedicle. The distal part of the flap was thinned primarily. End-to-end anastomoses were made to the radial artery in the anatomical snuffbox and to a superficial vein. The flap was inset, with its thinnest part (less than 0.5 cm thick) located in the palm (Figure 1c). The hand was actively mobilised at 5 days and splinted at night for 6 months. The flap was thinned at 6 months. The fixed flexion deformities at 12 months, largely due to intrinsic joint problems, were 0–15° at the metacarpophalangeal joints and 40–55° at the proximal interphalangeal joints. The patient returned to work and was satisfied with the result (Figure 2).

Dabernig et al. recently presented five cases using the CSAP flap to reconstruct the axilla, arm, hand and two cases of hidradenitis.¹ The largest flap dimensions were

8 cm in width and 16 cm in length, with an 8–10-cm pedicle.¹ The requirements for palm reconstruction are to provide cover that is thin, hair free, durable and relatively immobile. Small defects may be left to heal, or may be reconstructed with a skin graft or local pedicled flap. Local flaps are of limited use due to the poor mobility of palmar skin. Large defects in the palm require pedicled or free flaps. 'Thin' muscle-only flaps have been used and re-surfaced with a skin graft, but are bulky and may undergo fibrosis. Fascial flaps, such as the lateral thigh and radial forearm flaps, re-surfaced with a skin graft, may be too thin. Fasciocutaneous flaps such as the groin, scapular and parascapular flaps are thinner than muscle flaps, but may still be too bulky. Notably, the groin flap has poorly anchored and poorly durable skin. The dorsalis pedis and radial forearm fasciocutaneous flaps, though thinner, result in poor donor-site morbidity. The lateral arm flap is thin and has well-anchored skin but results in an unsightly donor scar.^{2,3} The free instep flap has been proposed as a flap with relatively immobile skin and minimal donor-site morbidity.³ Fascio-subcutaneous flaps avoid some donor-site morbidity and may resemble the adherent skin of the palm.⁴ Musculocutaneous perforator flaps such as the thoracodorsal artery and anterolateral thigh perforator flaps provide large, thin-to-medium thickness cover, avoiding the need for multiple debulking procedures.²

In this case it was not possible to use a reverse-flow radial forearm flap due to the occluded radial artery. A fascial flap covered with a skin graft was not used due to the risk of fibrosis. There are no reports in the literature of free tissue transfer being used to reconstruct a significant palm defect following radical excision of Dupuytren's disease. In the same way that full-thickness skin grafts act as 'firebreaks',⁵ free flaps may prevent recurrent disease by importing disease-free tissue. On the basis of our experience in this case, the CSAP flap appears to be a suitable option for the reconstruction of large palm defects. It has the advantages of being thin, with good-quality, hair-free skin, and an acceptable donor site. The risk of linear contractures in the palm may be further reduced by staggering the inset of the flap.



Figure 2 Final result at 12 months.

Acknowledgements

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Conflict of interest

None.

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