RADIAL ARTERY PHALLOPLASTY FOR PENILE RECONSTRUCTION

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Introduction A number of techniques have been used for phallic reconstruction. We present our results with the use of radial artery phalloplasty (RAP) in reconstruction of the penis in both transexuals and men following amputation for penile carcinoma.

Materials and Methods Between 1998 and 2002, 18 transexual patients and 4 male patients underwent penile reconstruction using a radial artery forearm free flap. Twelve patients including all the male patients had a single staged procedure, with a primary urethral anastomosis, whilst 10 transexuals underwent staged procedures. The radial artery was anastomised microsurgically to either the inferior epigastric artery or to the femoral artery using the saphenous vein as interposition, whilst cephalic vein continuity was established with saphenous grafts in the transexual patients and with the dorsal vein of the penis and/or long saphenous vein in male patients. Penile sensory innervation to the cutaneous nerves of the forearm was provided by anastomosis of the ilio-inguinal nerve for transsexual patients and by anastomosis of the dorsal nerve of the penis/ilio-inguinal nerve for male patients.

Results Mean hospital stay was 21 days. Mean follow up after amputation of the penis was15 months (range 12-19 months). Immediate post-operative complications included: thrombosis of the arterial graft in 1 patient, which was successfully re-anastomised; superficial wound infections in 10 patients and deep wound infection in one patient which were successfully treated with intravenous antibiotics. Longer-term complications using a 1-stage procedure consisted of urethro-cutaneous fistula in 3 patients (1 male and 2 transexuals) and the development of strictures of the neo-urethra in 5 transexuals requiring surgery (stricture excision with replacement using buccal mucosa or simple dilatation). There were no significant complications with the forearm donor site. All patients were satisfied with the cosmetic appearance of their neophallus.

Conclusion RAP offers an effective and cosmetically acceptable means of penile reconstruction in both patients who have undergone amputation of the penis secondary to penile carcinoma and patients undergoing gender re-assignment surgery. However, patients should be advised of the significant risk of stricture/fistula formation of the neo-urethra especially in a one stage procedure.