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MODIFIED TECHNIQUE OF PENILE RECONSTRUCTION BY GRACILIS MYOCUTANEOUS FLAP

J. L. Srivastava, V. K. Tiwari and Pramod Kumar

SUMMARY

A modified technique of penile reconstruction by unilateral gracilis myocutaneous flap in three cases of amputation of penis with emphasis on improving the cosmesis of penis is being described.

(*Key Words* : Phalloplasty, Flaps, Myocutaneous flaps)

The criteria for satisfactory reconstruction of penis is to create a sexual organ with adequate sensation, having a satisfactory urinary conduit and to achieve acceptable cosmesis.

In the present paper we have described a modification of the method for penile reconstruction by gracilis myocutaneous flap in an attempt to achieve the above mentioned criteria.

Case Reports

Case 1

A 32 years old male with post surgical amputation of penis for early carcinoma penis was admitted in plastic surgery ward, S. J. H. The total length of remaining shaft was 2 cms in full erection. There were well settled scars over the penile stump. No recurrence could be detected at the end of 6 years follow-up.

Case 2

A 26 years old man presented with total amputation of penis. Two years back when he was masterbating with a metallic curtain ring, the ring got stuck at the base of penis due to congestion of distal penile shaft. Later the gangrenous penis was amputated by a general surgeon. Local examination at the time of admission revealed 1 cm size penile stump with settled scars over it.

Case 3

A 18 years old male presented with amputation of penis for penile reconstruction. His penis was cut by a man with whose wife he was alleged to have illegal sexual relations. This man along with two others tied the patient and cut his penis. Local examination revealed approx. 1 cm penile stump with settled scars over the stump and the right thigh.

All the three cases were able to pass urine with normal stream. They were unable to perform coitus and had disturbed psyche.

After baseline haemotological and urine examination, penile reconstruction was done utilizing unilateral gracilis myocutaneous flap (From right side in case 1 & 2 and from left side in case 3). Scrotal flap from hairless area near the base of scrotum was utilized to reconstruct the urethra. Glans was made by the skin island of the myocutaneous flap and shaft by covering the gracilis muscle by intermediate thickness split skin graft.

Operative Steps

The gracilis muscle was identified through a standard vertical incision on the medial side of thigh. A skin island (10 × 10 cm) was marked over the middle third of the muscle. The skin island was incised, tucked with the muscle and then the muscle insertion was divided. The myocutaneous flap was raised, the neurovascular bundle entering in the upper part of muscle was identified and dissected upwards (Fig. 1 & 2). Eighteen mm wide and 10 cms long skin flap from hairless scrotal base was raised with the base of the flap at the existing urinary meatus. To reconstruct urethra, this

flap was inversely tubed over 18 Fr. catheter utilizing 5/0 prolene pull out sutures (Fig. 3). A wide subcutaneous tunnel joining the thigh wound to penile stump was made. The myocutaneous flap was passed through it, wrapped around the reconstructed urethra, in such a way that the skin island was lying at the position of glans. To avoid ill effect due to muscle function i.e. shifting of reconstructed penis to one side, muscle origin was identified, severed and stitched to the remaining stump of the corpora, preserving neurovascular supply of the

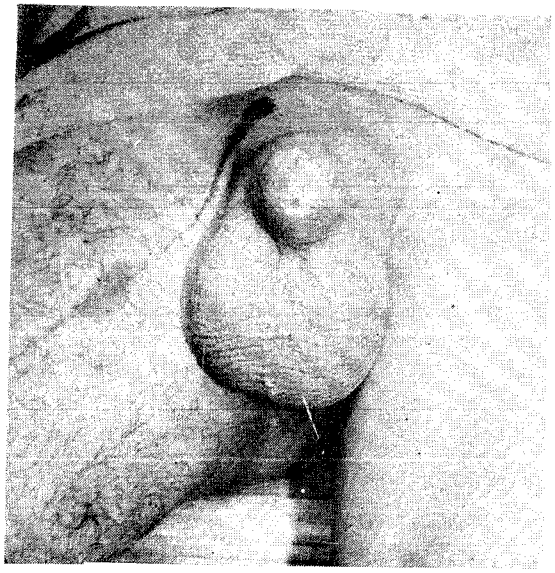

Fig. 1. Pre-operative photograph showing amputated penile stump.

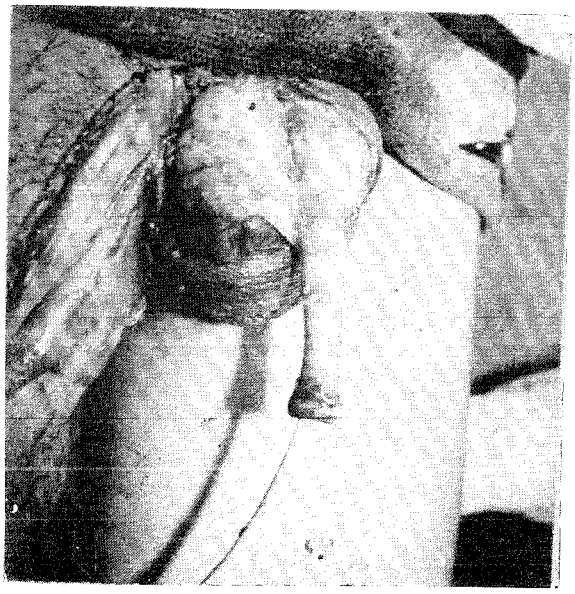

Fig. 2. Photograph showing inversely tubed scrotal flap for reconstruction of urethra.

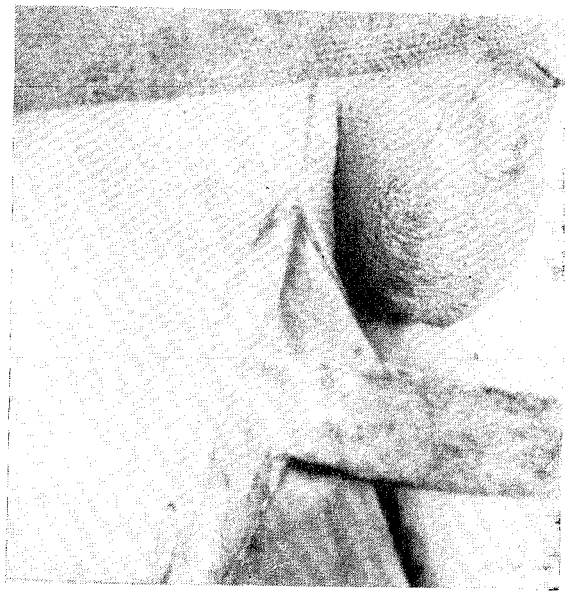

Fig. 3. Photograph showing dissection to raise gracilis myocutaneous flap.

Fig. 4. The reconstructed penis on 10th post-operative day.

muscle. Now the muscle in the reconstructed shaft was covered by intermediate thickness split skin graft from the thigh (Fig. 4 & 5). There was no complication except wound infection in one case.

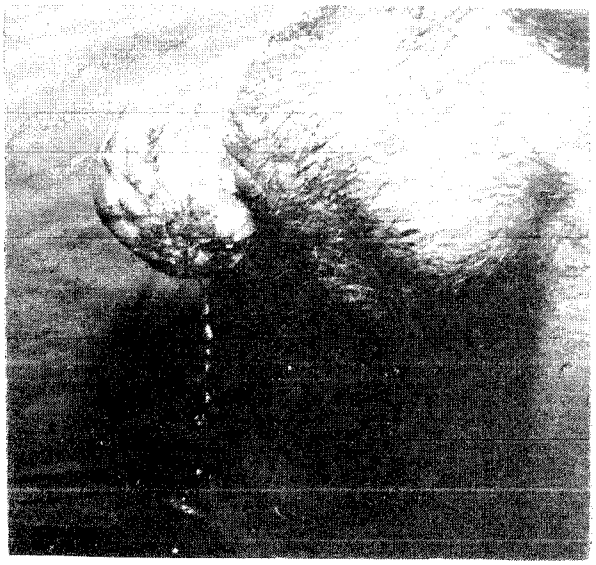

Fig. 5. Photograph of reconstructed penis at the time of micturition (After two months follow-up).

Discussion

Penile reconstruction can be done by utilizing tubed skin flaps, muscle and myocutaneous flaps and free flaps. Bogaras (1936) was first to reconstruct penis using abdominal skin. Gillies and Harrison (1948) have reconstructed penis by tubed abdominal flap in several stages. Kaplan and Wesser (1971) described a method for penile reconstruction by using tubed in flap from the median raphe of the scrotum (12-15 cms) for the urethra and thigh flap based on femoral branches of genitofemoral nerve for the penile shaft for adequate sensation.

Orticochea (1972) utilized gracilis muscle as contractile element, and skin with intact sensation (cutaneous branch of obturator nerve) for reconstruction of penis in five stages requiring approximately two years to complete the procedure. Hester (1978) reconstructed penis in one stage utilizing gracilis muscle. He made urethra from full thickness skin graft from abdomen, used scrotal flap to cover proximal third of constructed penis and split thickness skin graft for the remaining two third.

Free flap phalloplasty has been done utilizing groin flap (Pukett et al., 1982), rectus abdominis flap covered with dorsalis pedis flap (Horton et al., 1983), radial forearm flap (Chang and Hwang, 1984, Meyer et al., 1986, Matti et al., 1988) and ulnar forearm flap (Glasson et al., 1986).

Davis and Matti (1988) have described the method of one stage phallus reconstruction using extended deep inferior epigastric flap based on large umblical perforators which are the terminal branches of deep inferior epigastric artery.

In the present 3 cases penis was reconstructed utilizing single gracilis myocutaneous flap. The skin island of myocutaneous flap was used to reconstruct glans and split thickness skin graft to resurface the remaining shaft of reconstructed penis. The junction between skin graft and skin island of myocutaneous flap simulated the corona (Fig. 4 & 5). After 8 months follow up patient is passing urine with normal stream (Fig. 5). By the end of 8 months some sensation to pinprick over the glans appeared. In all the cases penis were semierectile and they were capable of doing intercourse with little difficulty in penetration. All of them are satisfied with function and shape of the reconstructed penis.

Conclusions

Inspite of the efforts made by various workers to achieve the goals of penile reconstruction, the problems of penile reconstruction has not yet been solved. We have reconstructed semierectile penis in 3 cases with some sensation and tried to improve the appearance of penis by reconstructing the glans and the corona.

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