

Resurfacing penile skin defect with bilateral dartos musculocutaneous flaps

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Summary

A case of marked penile skin loss following an adult circumcision is presented. The surgical requirement is to provide a soft and flexible cover for the penis to facilitate return of sensation and function. The two stage bilateral dartos musculocutaneous flaps offer an acceptable surgical alternative.

Key words: Penile skin deficiency, dartos musculocutaneous flap.

Case Report

A 33 year old man presented with marked penile skin defect after a circumcision performed more than 10 years ago. This had caused considerable contracture of the penis with pain on erection and dysparunia.

The contracture was released through the original circumcision incision. After the release most of the penile shaft was devoid of skin. Bilateral dartos musculocutaneous flaps were raised to lengthen the penile skin.

The course of the deep external pudendal artery was marked by drawing a horizontal line running towards the scrotal neck from 5 cm below the origin of the femoral artery. The vascular axis of the flap was represented by a line from the mid-point of the anterior surface of the scrotal neck. A skin island (4x5 cm) was marked over the anterior surface of the scrotum, taking care not to cross the midline. The distal skin incision extended through the skin, fascia and dartos muscle. Only the skin was cut in the proximal incision. From the proximal incision the skin was dissected proximally from over the pedicle (dartos muscle and fascia) up to the base of the flap. The width of the dartos muscle pedicle was the same as the skin island. The posterior aspect of the flap was dissected off the delicate, relatively avascular areolar tissue. It was not possible to deliver the skin island onto the distal penile skin defect through a subcutaneous tunnel. The island skin flap was laid onto the skin defect. Each donor scrotal area was closed around the pedicle with minimal pressure.

Three weeks later both the pedicles of the scrotal flaps were transected.

A year later a z-plasty had to be performed to correct the penoscrotal webbing.

The marked contracture of the penis is well corrected. The scrotal flaps cover most of the shaft of the penis (Figure 1). Sexual intercourse is more satisfying now as the penis on erection is longer, painless and is as sensuous as before the circumcision. It is very surprising indeed that the grafted scrotal skin flap has the same sensation as the normal penile skin as the ilioinguinal nerve has been cut during the transection of the pedicle.



Fig. 1: Dartos musculocutaneous flap covering ipsilateral half of penis

Discussion

Circumcision is usually delegated to the most junior surgeon. This can create a high degree of morbidity. The more serious complications are haemorrhage, infection, amputation of the glans, urethral fistula and disastrous cosmetic results.

The resurfacing of the penile skin defect is problematical. Using split thickness skin graft requires immobilization in the immediate post-operative period, which is difficult to achieve. Also contracture of the grafted skin is inevitable.

Various types of abdominal flaps can be used. However, as these skin flaps are bulky, they will produce an organ that is excessively large, bizarre in shape and hairy. Multiple operations are also necessary.

The dartos musculocutaneous flap¹ is very suitable for coverage of the penile skin defect as the scrotal tissue is very elastic, not bulky and capable of great distension. For proximal penile skin cover, a one stage procedure is possible as the pedicle can be passed through a subcutaneous tunnel during its transposition. For distal coverage this subcutaneous tunneling is not possible for a tensionless flap transposition. A two stage procedure is then necessary. The maximum skin island that can be used is 4 x 5 cm.

Reference

1. Tiwari VK, Kumar P, Sharma RK. (1991). The dartos musculocutaneous flap. *British Journal of Plastic Surgery*, 44 : 33-5.