PHALLOPLASTY

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Few deformities cause more psychic trauma in the male than loss of the penis or testicles and it is fortunate that in the past 20 years advances in surgical techniques have allowed attempts at reconstruction of the missing organ.

Interest in phalloplasty was stimulated by the genital losses occurring in the 1914-18 war and reconstruction became possible with the development by Gillies and Filatoff of the tubed pedicle flap.

Ideally, the final result of a phalloplasty should enable the patient to urinate in a standing position, should be cosmetically acceptable and should enable him to have intercourse.

Bogoraz[1] in 1936 and later Blum[2] in 1938 cut the bony attachment of one corpus cavernosum, freed the bulb of the spongiosum and slid both forwards, covering them with local flaps. This produced a very short penis.

Subsequent attempts to form a penis all used an abdominal tubed pedicle as the basis, with the exception of the method of Goodwin *et al.*[3] and Chapell,[4] who used scrotal skin to construct both the urethra and the new penis in direct continuity with the stump. They state that the mid-line scrotal skin is hairless and that hair in the urethra has not been a problem in these two cases.

The various authors differed only in their methods of forming the urethra and the technique of attaching the tube to the penile stump.

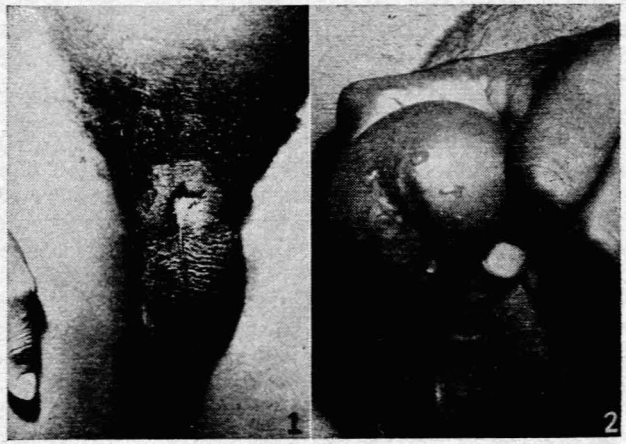
Frumpkin[5] treating cases from the Russian front, used an abdominal tubed pedicle enclosing a strip of costal cartilage. He then embedded the cartilaginous strut in the remains of the corpora cavernosa to allow erection of the reconstructed phallus. In his cases the urethra was formed by the attachment to the ventral surface of the first tube either of a second smaller pedicle from the forearm or of one from the mid-line of the scrotum. The latter has the disadvantage of including coarse hairs in the urethra and in both forms the penis has a bizarre composite appearance. Bergman *et al.*[6] rolled a urethra from the inferior surface of their penile tube and covered the resultant defect with scrotal skin.

Gillies,[7] and later Farina *et al.*,[8] rolled a tube on the abdominal wall to produce a urethra and surrounded this with another tube pedicle (Figs. 3, 4 and 5) thereby producing a composite homogenous penis. If, however, Gillies' original measurements are followed, this penis tends to be too large. Ali[9] reporting on a more recent case, apparently did not construct a urethra.

In the case presented here, I have used the method first described by Gillies, but, as mentioned above, the original measurements are rather generous and the final result will need further trimming.

CASE REPORT

B.M., a Native male—19 years old, was admitted from the Transkei with the story that during a ritual circumcision part of the penis had been chopped off and the remainder had sloughed away with the subsequent infection. Examination showed a healthy young Native male in a very depressed state of mind with complete loss of the penis (Fig. 1). A remnant of the corpora cavernosa could still be felt and due to marked local scarring, there was only a pin-hole meatus.



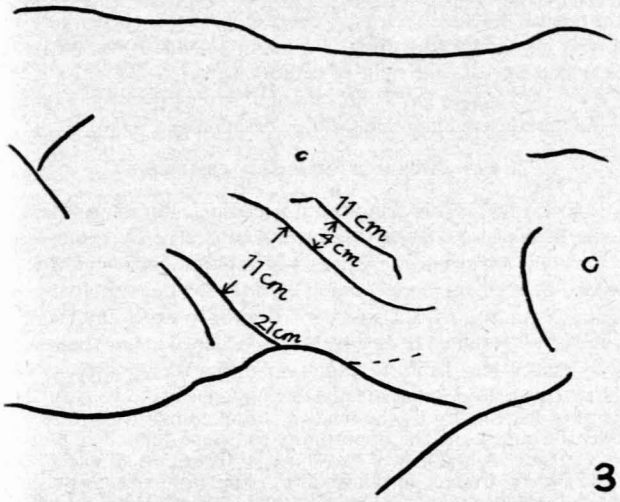
Figs 1 *and* 2. Fig 1, Pre-operative condition. Fig 2, Final result of glans.

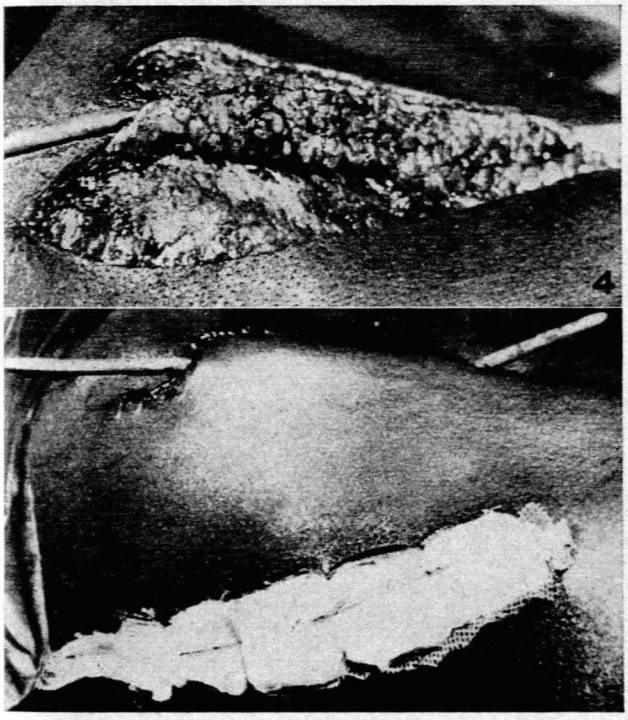
29 *August* 1955 (Figs. 3, 4 and 5). 1*st stage phalloplasty*. Small tube rolled on the abdomen and covered by the larger adjacent flap. Multiple Z-plasty done on the stenosed urethral aperture.

29 *September*. Infected haematoma under the flap drained.

13 *October*. 2*nd stage*. The large flap was detached from the abdominal wall and rolled into a tube containing the smaller tube formed at the first operation.

12 *January*, 1956. 3*rd stage*. Upper end of the tube pedicle divided and new urethra advanced to the end of the tube.



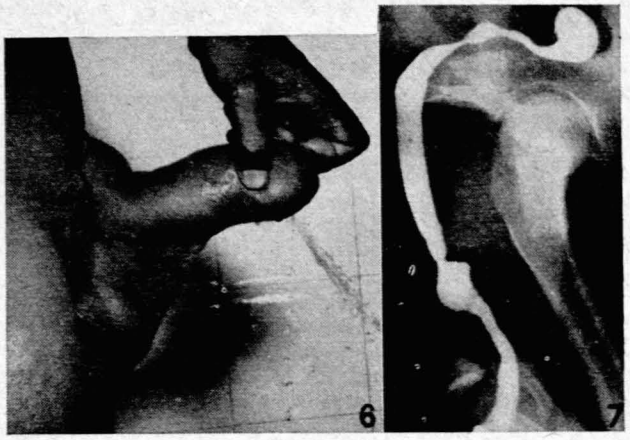


Figs 3, 4 *and* 5. Fig 3, Diagram illustrating size and position of flaps (modified after Gillies[7]). Fig 4, Abdominal tube rolled around catheter to form urethra. Fig. 5, Urethra healed, shaft of penis being formed.

26 *March*. 4*th stage*. The base of the pedicle was partially divided and the tube twisted to the pubic region. The urethral aperture was anastomosed to the lower opening of the inner tube, using a series of interlocking Vs. Perineal urethrostomy done.

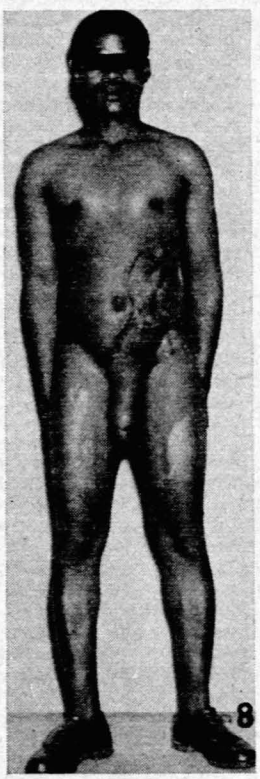
13 *September*. Base of flap adjusted and excess discarded.

14 *February* 1957. The end of tube was modelled to resemble the glans of a normal penis and the distal half of the penis thinned. (Fig. 2).



Figs 6 *and* 7, Fig. 6 shows that the patient has a normal flow of urine and the urethrogram (Fig. 7) shows a urethra without any stenosis.

No original technique is presented in this article. The case is recorded to emphasize what can be done for these unfortunate patients and very briefly to review the literature. How far have we succeeded in satisfying the criteria put forward in the opening paragraph? Figs, 2, 6, 7 and 8 illustrate the present status of the patient. He can urinate in a standing position; the result is cosmetically acceptable, if a bit large; intercourse is probably precluded by the size and the lack of a supporting rod of cartilage. This could be remedied later.



←Fig. 8, Final result.

SUMMARY

A case of total reconstruction of the penis and a brief review of the literature are presented and discussed.

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REFERENCES

1. Bogoraz, N. A. (1936): Zbl. Chir., **63**, 1271.
2. Blom, V. (1938): J. Mt. Sinai Hosp., **4**, 506.
3. Goodwin, W. E. and Scott, W. W. (1952): J. Urol., **68**, 903.
4. Chapell, B. S. (1953): *Ibid.*, **69**, 703.
5. Frumkin, A. O. (1943-44): Amer. Rev. Soviet Med., **2**, 14.
6. Bergman, R. T., Howard, A. H. and Barnes, R. W. (1948): J. Urol., **59**, 1174.
7. Gillies, H. and Harrison, R. J. (1948): Brit. J. Plast. Surg., **1**, 8.
8. Farina, R. and Freire, G. de C. (1954): *Ibid.*, **14**, 351.
9. Ali, M. (1957): J. Int. Coll. Surg., **27**, 352.