Nonerectile penile reconstruction following total penectomy using scrotal myocutaneous flap in carcinoma penis

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ABSTRACT

Background: Patients who undergo total penectomy for carcinoma of penis and accidental injury to penis and penile urethra require perineal urethrostomy. This forces these patients to micturate in sitting position. Perineal urethrostomy is also associated with ammoniacal smell and perineal excoriation, unless the total penectomy is associated with emasculation. Objective: This study aims to form esthetically acceptable nonerectile phallus with voidable urethra without giving enough bulk to the phallus using a myocutaneous scrotal flap for good act of micturition like male phallus after total penectomy. Materials and Methods: The procedure was carried out on three patients. Patients undergoing total penectomy counseled for the proposed modification of the standard surgical protocol were clinically Stage II (Jackson B). The procedure is single-stage following total penectomy, after an interval of six months. Patients were followed up once a fortnight and evaluated for quality of stream and patient’s acceptance. Results: All patients had aesthetically acceptable phallus without bulk, were able to micturate in standing posture in an upright directable fashion. Conclusion: The procedure is technically easy, esthetically acceptable and provides voidable urethra facilitating the act of micturition in standing posture without bulk to the reconstructed phallus.

Key words: Nonerectile penile reconstruction, upright directable stream, voidable urethra

INTRODUCTION

Total penectomy in patients with carcinoma penis and accidental injury to penis or penile urethra has been associated with perineal urethrostomy. Patient needs to squat to micturate in sitting position. In addition, it is associated with inevitable ammonical perineal excoriation, smell and a small risk of ascending infection. Hence, there is a need to evolve a simple method of providing a ‘Voidable’ urethra, requiring minimal surgical competence and avoiding technically demanding microvascular flaps.

MATERIALS AND METHODS

This procedure was tried in three patients. All of them belonged were of poor socioeconomic status. Written informed consent for the modified procedure and ethical clearance from the departmental ethical committee for carrying out the study was obtained. The patients’ profile was as follows:

Patient 1: 56 years old, coolie by occupation, history of one-year duration, with inguinal node negative, Stage II carcinoma penis, proved on biopsy.
Patient 2: 48 years old, porter by occupation, history of eight months duration with no inguinal nodes, Stage II carcinoma penis, proved on biopsy.
Patient 3: 60 years old, daily wageworker, history of one-year duration, Stage II carcinoma penis proved
Indurated edge was marked before anesthesia and penile growth isolated using a sterile glove. Elliptical incision was placed around the root of the penis. Incision was deepened dividing the fundiform and suspensory ligaments. The superficial dorsal vein was ligated to expose Buck’s fascia. Incision was deepened in Buck’s fascia to expose the tunica albuginea of the crura and corpus spongiosum after ligating the deep dorsal vein and the dorsal arteries of the penis. The corpus spongiosum was transected 2 cm away from the indurated edge. The corpus spongiosum with urethra was dissected free from the crura up to the bulb of the penis. The surgical end of the transected urethra was sent for histopathological evaluation for clear margin. The crura was dissected and detached from the margins of the pubic arch and secured with sutures for hemostasis.

The harvested urethral stump was tunneled in the subdartos plane of the scrotum beneath the median raphe. A 1-cm ellipse of the scrotal skin was excised at the proposed site of urethral implantation, considering the length of the harvested urethral stump. The tip of the urethral stump was spatulated. The spatulated ends were sutured loosely to the skin edge of the ellipse. Foley’s self-retaining catheter (SRC) was inserted to drain the bladder. The incision was sutured transversely with a tube drain. This elevates the scrotum, reduces the tunneled urethral angulations and avoids scar on the future scrotal flaps. Foley’s SRC was removed after one week. Patients were followed up once a fortnight.

After six months, patients were evaluated for urethrostomy narrowing. Hegar’s dilator was passed as bougie in the tunneled urethral stump and lifted dorsally to mark the required scrotal flaps in an inverted V fashion. Flaps were raised deep to the dartos and sutured on the ventral aspect of the urethral stump, and the scrotal wound was sutured resulting in a V-Y type of closure [Figure 1]. Foley’s SRC was maintained for one week. Patients were followed up once a fortnight and evaluated for quality of stream and patient’s acceptance.

**RESULTS**

The nonerectile phallus without bulk facilitated the patients to micturate in standing position in an upright directable fashion appropriate for their age and was esthetically acceptable, but lost to follow up by 3 months.

**DISCUSSION**

Males have the ability to micturate in a standing position producing “Upright directable micturition”.

Since time immemorial, total penectomy for carcinoma of penis or penile injury has been an inevitable psychological traumatic experience due to perineal urethrostomy requiring to squat to micturate like females, hurting the male ego. This is also associated with perineal ammonical excoriations, smell and increased risk of ascending infections.

Hence, there is a need for a voidable urethra. Unfortunately, the truth is “the anatomy and physiology of the erectile tissues are not reproducible by transfer of human tissues”.

An ideal procedure should meet the following criteria:

a) Single-stage procedure.
b) Creation of competent urethra for good act of micturition.
c) Esthetic acceptance.
d) Provide enough bulk to the reconstructed phallus.

Various procedures tried using fasciocutaneous, myocutaneous flaps, microvascular free forearm flaps based on the radial artery. These were originally described by Chang as “A tube within a tube” popularly called Chinese flap with subsequent modification by Faroon, Boyd popularly known as cricket bat design with Biemer’s modifications. However, these techniques had their own disadvantages.

Multi-staged procedure, hirsute skin, technically more demanding. Pucket and Montie used free groin flap although the skin there is insensible. All these procedures aimed at providing a reconstructed phallus with enough bulk and a voidable urethra.

On the other hand, the above procedure adopted has the following advantages:

a) Single-stage procedure following total penectomy.
b) Procedure is simple, technically less demanding.
c) Obviates the need for emasculation.
d) Esthetic acceptance.
CONCLUSION

The procedure is technically easy, esthetically acceptable and provides 'Voidable' urethra to facilitate good act of micturition in standing posture without bulk to the reconstructed phallus.

REFERENCES