A modified surgical procedure for concealed penis

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Abstract

Introduction: We described a modified surgical procedure for repairing a concealed penis and compared the efficacy and feasibility of modified repair with traditional repair.
Methods: From March 2003 to December 2012, 96 patients with a concealed penis were recruited to undergo penile repair at our centre. Modified repair and traditional repair were performed respectively on 46 and 50 cases. We compared operative time, intraoperative blood loss, cosmetic result of operative scars, postoperative penile retraction, and complications.
Results: All operations were completed successfully without serious complications. The mean operative time, intraoperative blood loss, and cosmetic result of the operative scar between the two surgical methods were similar. However, the postoperative penile retraction rate in patients undergoing modified repair decreased significantly than in the traditional repair.
Conclusions: Our modified surgical procedure is effective and feasible for a concealed penis. Although extra procedures were needed for the modified repair, the operative time, intraoperative blood loss and cosmetic result of operative scar between the two procedures were similar. Compared with traditional repair, modified repair has better clinical outcomes.

Introduction

Concealed penis is a congenital abnormality in which the penis is buried below the surface of prepubic skin.[1,2] The penis can be palpated and visualized through pushing the skin around the penis to the pubis. This disease is more common in obese people. In recent years, concealed penis gets more and more attention, especially in developing countries, such as China. Surgical repair of the congenital abnormality is a difficult challenge for urologists.[3-8] Weight loss or removal of suprapubic fat usually fails to reach satisfactory result. Simple circumcision will make the condition worse. Complete loosening and fixing the penile shaft are key in its surgical repair. However, postoperative penile retraction remains inevitable in some cases. In present study, we showed a modified surgical procedure for concealed penis and compared the effect and feasibility of modified repair with traditional repair.

Methods

Approval for the study was granted by the ethics committee of Nanjing Medical University in China and informed written consent was received from patients.

Patients

From March 2003 to December 2012, 96 patients with concealed penis were recruited at our centre. Patient age ranged from 8 to 25 years old. Patients suffered from the short penis and obvious phimosis (Fig. 1). Upon physical examination, all patients had the stretched penile length appropriate for their age. Traditional repair was performed on 46 patients. The remaining 50 cases underwent modified repair.

Surgical procedures

All operations were performed by the same experienced urologists at our centre. After induction of general anesthesia, the patients were placed in the supine position. First, the adhesion of the prepuce was dissected to expose the glans. Then a circumferential skin incision was made along the coronary sulcus to deglove penile shaft to the base of penis. The dysplastic dartos should be loosened and resected completely to stretch and straighten penile shaft sufficiently. Then the superficial fascia, pubic periosteum and Buck fascia were sutured and fixed together with 5-0 absorbable sutures at the 12 o'clock position of base of the penis (Fig. 2). Similarly, the superficial fascia and Buck fascia were sutured together at the 3, 6 and 9 o'clock positions of base of the penis (Fig. 2). For patients undergoing modified

Fig. 1. Preoperative appearance of the concealed penis.

repair, a small longitudinal median incision was made at the dorsal prepuce after the above procedures (Fig. 3a). Then the superficial fascia and Buck fascia were sutured with 5-0 absorbable sutures (Fig. 3b). During the extra procedures, the dorsal blood vessels and nerves of penis should be avoided. Lastly, all prepuce incisions were sutured interruptedly with 4-0 absorbable sutures to recover the normal appearance of prepuce (Fig. 4). Patients were followed up for 12 months.

Outcomes analysis

We compared mean operative time, intraoperative blood loss, cosmetic result of operative scar, penile retraction one month after operation, and complications. The intraoperative blood loss was determined by weighing the gauze. Specifically, only a piece of gauze was used during one operation. The same type of gauze was used in all procedures. The blood loss was calculated according to weight difference preoperatively and postoperatively. Cosmetic result was assessed with a 5-graded scale ranging from very dissatisfied to very satisfied. Data were expressed as mean ± standard deviation. All data were initially tested to check normality and homogeneity of variance. T-test was performed for comparison. Statistical significance was set at $p < 0.05$.

Table 1. Clinical outcomes of 96 patients

	TR (n = 46)	MR (n = 50)	*p* value
Operation time (min)	37.8 ± 2.1	39.0 ± 1.0	0.051
Blood loss (mL)	9.9 ± 0.6	10.1 ± 0.2	0.054
Cosmetic result of operative scar	4.83 ± 0.38	4.77 ± 0.43	0.441
Penile retraction (n; %)	4; 11.1	0; 0	0.018*
Complication (n)	0	0	

TR: traditional repair; MR: modified repair. Data are shown are mean ± standard deviation; *$p < 0.05$.

Results

All operations were completed successfully. No complications occurred. Slight edema was found in all patients and disappeared completely 1 to 2 months after the operation. No patients suffered from voiding dysfunction. After 12 months of follow-up, all patients undergoing modified repair had a normal penile length appropriate for their age. Four cases in traditional repair underwent a second surgery for obvious penile retraction.

Although extra procedures were performed, operative time and intraoperative blood loss of patients undergoing modified repair were not significantly higher than in the tra-

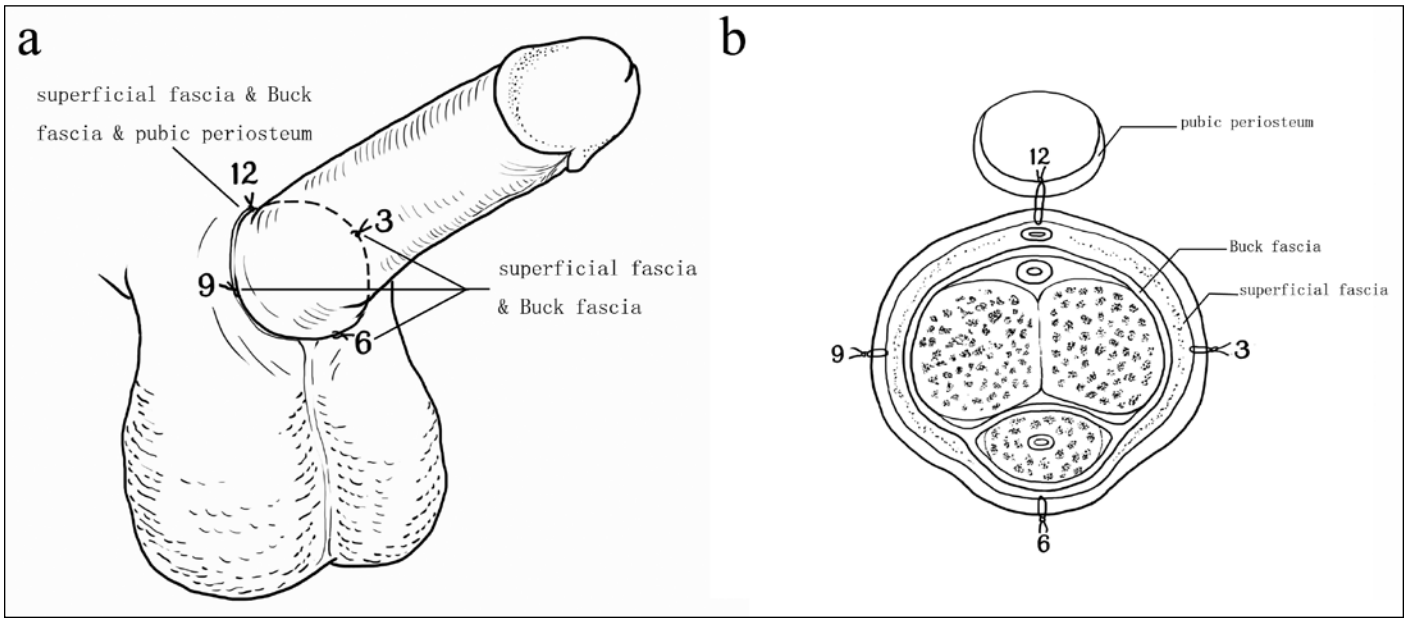

Fig. 2. First, the superficial fascia, pubic periosteum and Buck fascia were sutured and fixed together at the 12 o'clock position of base of the penis. Then, the superficial fascia and Buck fascia were sutured together at 3, 6 and 9 o'clock position of base of the penis. A: lateral; B: cross section.

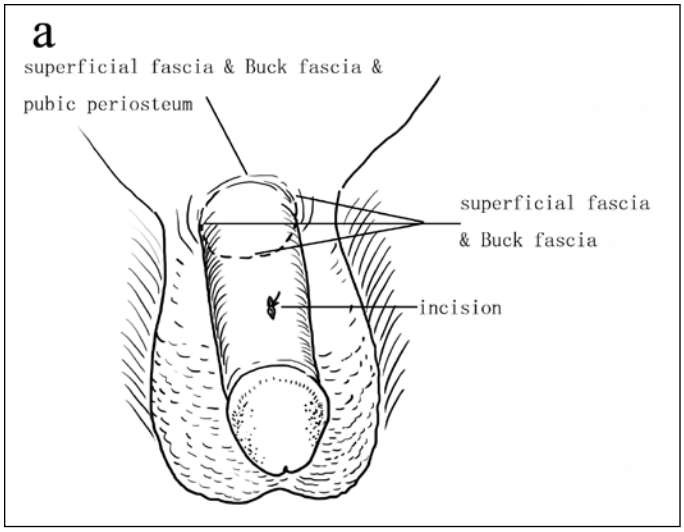

Fig. 3a. Small longitudinal median incision was made at the dorsal prepuce.

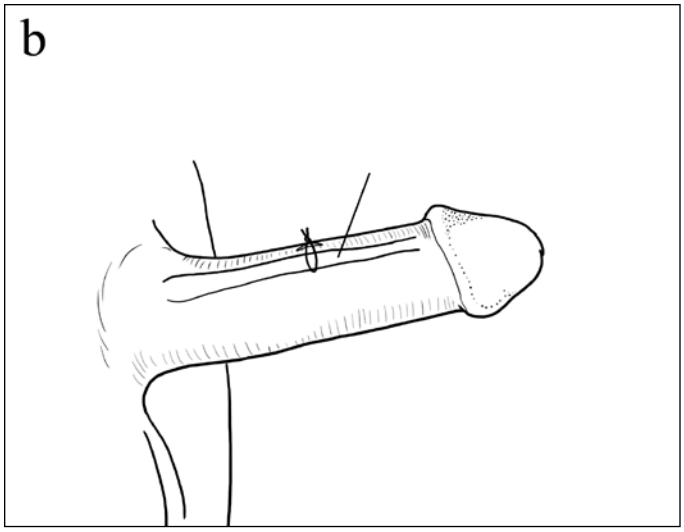

Fig. 3b. The superficial fascia and Buck fascia were sutured to strengthen the fixation of the stretched and straightened penile shaft.

ditional repair group (Table 1). The cosmetic result of operative scar was similar between groups. The penile retraction rate in patients with modified repair decreased than in the traditional repair.

Discussion

Concealed penis is a common congenital abnormality, especially in obese people. Patients suffer from a short penis and obvious phimosis.[3-5,9,10] Dysplastic dartos may be the main cause, which can hinder the normal stretch of penis. Redundant suprapubic fat can aggravate this abnormality. Severe phimosis will lead to the inflammation of external urethral orifice and glans or urinary retention.[1,11] Untreated concealed penis will affect the normal development of the penis and erectile function in adults. Concealed penis should be distinguished from short penis and simple phimosis. In general, the concealed penis has well-developed corpora cavernosa and non-redundant prepuce. A wrong circumcision for concealed penis will cause the shortness or absence of the prepuce, and affect penile development.

Surgical repair is the first-line treatment for concealed penis. During the past decades, different surgical methods were taken to improve the therapeutic effect of concealed penis.[12-14] Complete loosening and fixing penile shaft are the key procedures of surgical repair. However, postoperative penis retraction remains inevitable in some cases.[12] In our modified repair, the superficial fascia and Buck fascia under the dorsal prepuce were sutured again to strengthen the fixation of the stretched and straightened penile shaft. Our results showed that the postoperative penile retraction rate decreased significantly in the modified repair than in the traditional repair. Although extra procedures were needed, simple incision and suture did not increase operative time and intraoperative blood loss. The small incision and thin and absorbable sutures reduced the operative scar maximally, which achieved similar cosmetic result compared with traditional repair.

In our experience in modified repair, the dysplastic dartos and distal fibrous band of penis should be resected completely to loosen and straighten the penile shaft sufficiently. The superficial fascia and Buck fascia are fixed respectively at the 3, 6, 9 and 12 o'clock positions at the base of the penis. Thyroid retractors should be used to pull the base of the penis and bilateral sides of the penis to clearly expose

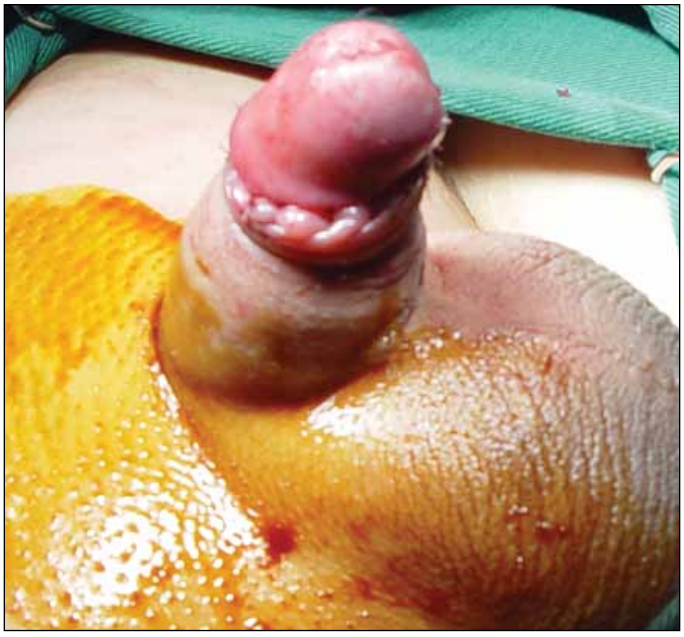

Fig. 4. Postoperative appearance of the concealed penis.

the operative field for the suture because most of the patients were obese. The longitudinal median incision at the dorsal prepuce and the suture outside the albuginea can avoid damage to the dorsal blood vessels and nerves. At last, the dorsal longitudinal incision should be sutured transversely to avoid postoperative stenosis of the prepuce.

Conclusions

The modified repair surgery for concealed penis had similar operative time, intraoperative blood loss, and cosmetic result of operative scar with the traditional repair. However, the postoperative penile retraction rate of patients undergoing modified repair decreased significantly than with the traditional repair. Our modified repair is effective and feasible for concealed penis. Compared with traditional repair, modified repair has better clinical outcomes.

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