Simplification of the surgical treatment of a hidden penis


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KEYWORDS
Hidden penis; Buried penis; Webbed penis; Trapped penis; Children; Reconstructive surgery

Abstract
Introduction: The treatment of a hidden penis consists of completely and effectively exteriorizing the penile shaft from a functional and aesthetic point of view.

Patients and methods: Over a period of 15 months (02/2008–05/2009), we treated 7 children (mean age 4.6 years) with hidden penis (five had a buried penis, one had a webbed penis and another a trapped penis) using the Borsellino reconstruction technique modified with an "S" dorsal incision. We performed a pubic lipectomy in one patient through the same incision. Surgical indication was for aesthetic reasons in all the cases, secondary phimosis in four, repeated balanitis in one and pain in another.

Results: Hospital stay was 24 h. With a short-term follow-up (1–12 months), we detected the following complications: partial recurrence, post-surgical lymphedema and hypertrophic scarring, each of them in one case. Patients and parents were satisfied with the result.

Conclusions: The technique that we present achieves good cosmetic results and has few immediate complications. The substitution of the two dorsal incisions with one "S" incision allows simultaneous lipectomy without the need for another incision.

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Introduction

A hidden or concealed penis is a normal-sized phallus that is under-exposed. Many terms have been used to describe a hidden penis, which has led to confusion and made consensus difficult regarding the management of this disorder. In 1996, Maizels et al. proposed a classification in order to clarify and simplify treatment. According to them, there are three subgroups: buried penis, webbed penis and trapped penis. A buried penis is a normal-sized phallus that is concealed in the pubic tissue due to the lack of fixation of the skin at the base of the penis. In a webbed penis, the problem lies in the disappearance of the penoscrotal angle, due to an abnormally distal extension of the scrotal skin on the ventral surface of the penis. Finally, a trapped penis is the result of scarring subsequent to surgery on the penis, usually circumcisions performed on concealed penises. The term micropenis should not be used to refer to a buried penis, as a micropenis is a normal phallus more than two standard deviations below the average, while a buried penis is normal sized.

There are numerous surgical techniques to treat a concealed penis, and it is commonly accepted that the principle of all of them is to restore the attachment of the penile skin to Buck’s fascia, lateral to the urethra and lateral to the neurovascular structures, respectively. This procedure was facilitated in the ventral part by means of an incision in the scrotal raphe without affecting the ventral skin of the penis and exteriorizing the penis through it. This was done in 4 patients with absorbable sutures (polyglycolic acid) and in three patients with non-absorbable sutures (expanded polytetrafluoroethylene, Gore-Tex) (Fig. 1). In one of the patients we performed a limited pubic lipectomy through the dorsal incision.

Patients and methods

From February 2008 to May 2009, we treated 7 children aged between 1 and 11 years with a mean age of 4.6 years for hidden penis. In five cases the penis was buried, the sixth had his penis trapped in the scar of a circumcision performed for cultural reasons 6 months earlier and the seventh had a webbed penis. In all the cases surgical indication was for cosmetic reasons, secondary phimosis in four, recurrence of balanitis in one and scar-related pain in another. In all cases, the surgical correction technique of choice was that described by Borsellino et al. However, in patients with more pubic fat, in those we foresaw the need for a lipectomy, we made an "S" or "Z" incision, instead of the two small dorsal incisions described in the original technique.

We performed all the operations under general anesthesia combined with regional anesthesia by means of epidural catheter, which prevented the use of local anesthetics in the surgical site and allowed good intraoperative and postoperative pain control. In all the cases, we completely denuded the penis by means of a coronal incision, unhanging the abnormal fixations of the dartos. We reconstructed the penoscrotal and penopubic angles by attaching the skin dermis to Buck’s fascia, lateral to the urethra and lateral to the neurovascular structures, respectively. This procedure was facilitated in the ventral part by means of an incision in the scrotal raphe without affecting the ventral skin of the penis and exteriorizing the penis through it. This was done in 4 patients with absorbable sutures (polyglycolic acid) and in three patients with non-absorbable sutures (expanded polytetrafluoroethylene, Gore-Tex) (Fig. 1). In one of the patients we performed a limited pubic lipectomy through the dorsal incision.

Results

The mean operative time including anesthesia and nursing procedures was 76 min (range: 65–90 min). In all cases the patients were discharged 24 h after surgery following removal of the epidural catheter. Postoperative follow-up varied from 1 to 15 months. One patient had immediate postoperative lymphedema after surgery, which disappeared completely after two months. Another patient had partial recurrence of the process 4 months after surgery, and underwent surgery with the same technique. One patient suffered hypertrophy of the pubic scar and is currently being treated with silicone gel. In all the cases, including those with postoperative complications, the parents were satisfied with the aesthetic and functional results and considered the procedure to be minimally invasive for their sons.
Figure 1  Buried penis. (A) Preoperative appearance. (B) Denuding of the penis. (C) Exteriorization by means of an incision in the scrotal raphe. (D) Postoperative result.

Figure 2  Webbed penis. (A) Preoperative appearance. (B) Design of incisions. (C) Postoperative appearance, frontal view with dorsal incisions. (D) Side view with ventral incision.
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Figure 3  Trapped penis. (A) Preoperative appearance and dorsal incision line. (B) Postoperative result.

Discussion

It is indisputable that a small penis in a child causes concern and anxiety in parents. Even if it is appropriately sized, a concealed penis is perceived as small, whether because it is buried in the pubic tissue, because it is webbed or because it is trapped in a scar. We believe that proper classification of these disorders is essential for proper treatment.

There is controversy as to when these disorders should be corrected; however, the development of more refined surgical techniques and advances in postoperative pain management makes us tend to choose early treatment with the aim of avoiding the negative effects that a hidden penis has on the psychological and social development of the child. For this reason, in the same manner as authors such as Casale et al. we maintain that a buried penis can and should be treated at an early age, once the patient begins to walk.

As regards the surgical approach, there are many works that highlight the need to address all those factors that may cause these disorders. We believe it is essential to complete denudation of the penis to remove the abnormal dartos attachments that further its shortening. The appropriate reconstruction of the penoscrotal and penopubic angles by carefully attaching the penile skin to Buck’s fascia (Fig. 2) is also fundamental for the success of treatment.

At this point we believe that the fundamental advantage of the technique described by Borsellino et al. is that it allows these attachments without affecting the ventral skin of the penis and the incision is made in the scrotal raphe and the penis is exteriorized through it. Avoiding the ventral incision on the penis minimizes scarring sequelae, and in our experience does not hinder the technique. An "S" incision in patients with more pubic fat facilitates attachment and allows simultaneous lipectomy (Fig. 3). We lack experience in the use of liposuction, although some authors present good results. Originally, we used absorbable sutures to reconstruct the angles, however, early partial recurrence in one of our patients made us prefer to use non-absorbable sutures in the last three cases we operated.

We believe that this technique is useful in the treatment of trapped penis with flawless penile skin. In such case, we recommend performing the treatment in two stages.

Although the series we present is small, and we have no long-term follow-up, we are pleased with the technique because it is easy to perform, has few complications, is perceived by parents as non-aggressive and is highly valued from an aesthetic point of view. Early discharge after surgery allows minimizing the impact of hospital stay on patients and their relatives.

In short, properly classifying concealed penises facilitates planning their treatment and increases the prospects of success. The technique described by Borsellino et al. appears to be effective and in many cases prevents the use of flaps, grafts and ventral incisions. It has few early complications and the final cosmetic result is good. The substitution of two small dorsal incisions with an "S" or "Z" incision allows simultaneous lipectomy. Patients and/or their parents are satisfied with the aesthetic and functional results in the short and medium-term.

Conflict of interest

The authors declare that they have no conflict of interest.

References