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# Management of Bladder Exstrophy in a Single Procedure: About a Case in the Urology Department of the CHU Point G

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**Abstract** **Case Report**

Bladder exstrophy is a rare urogenital birth defect. In the sub-Saharan context, most cases are diagnosed at birth or older due to lack of prenatal surveillance. The treatment is exclusively surgical. Several techniques have been described and modified over time. The surgical reconstruction technique can be done in a single or several procedures. This clinical observation was reported a case of complex epispadias bladder exstrophy, managed in a single procedure in a 10-year-old boy. The postoperative follow-up was simple.

**Keywords:** Exstrophy, bladder reconstruction, single procedure, CHU Point G.

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## INTRODUCTION

Bladder exstrophy is a serious congenital malformation characterized by a defect in closing the subumbilical abdominal wall, and the anterior wall of the bladder, often associated with abnormality of the urethra, the pelvic girdle, the external genitalia and the perineum. Its prevalence is estimated at 2.07 per 100,000 births [1, 2]. Other malformations may namely be associated such inguinal hernia and cryptorchidism in boys.

Antenatal diagnosis is possible and is based on non-visualization of the bladder on morphological ultrasound in the second trimester [3].

Treatment is aimed at achieving satisfactory urinary continence with preservation of the upper urinary tract, based on surgery [5]. On the other hand, the aim is also to ensure a sexual and reproductive life as much as possible.

The prognosis without surgery is dominated by urinary incontinence and its social consequences. There is a risk of infection, progressive alteration of the ureters and kidneys and a possible progression to cancerization [7-9].

Bladder exstrophy surgery has undergone a great transition in time, from urinary diversion (continent and incontinent), to bladder reconstruction associated with osteotomy to bring the two hemipubis closer together. It can be done, in a single or several procedures.

In the late 1980s, Complete Primary Repair of bladder Exstrophy (CPRE) is the complete primary closure of bladder exstrophy developed by Dr. Michael Mitchell. Commonly used around the world, several refinements have been offered with the goal of offering a complete repair in a single step, avoiding subsequent surgeries [5].

In this clinical observation, it reported the outcome of performing this technique in a 10-year-old boy, managed in the urology department of Point G.

## OBSERVATION

This was a 10-year-old boy who was referred to urology department for bladder malformation with permanent urine flow. The malformation has been noticed by parents since birth after home birth. Her mother reported that she had not done any antenatal visits. No notion of consanguinity or similar cases in the family has been found. Parents said they had no information on the possibility of repairing the

malformation in Mali, which explained the delay in care. The clinical examination at admission showed a good general condition, the presence at the hypogastrium level, of a reddish plaque, rounded, bulging forward with an inflammatory mucosa, letting urine flow in its lower part through the ureteral meatus.

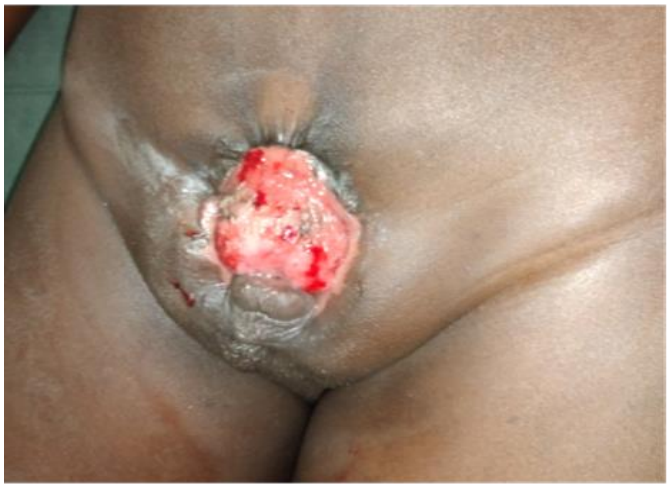

**Figure 1: Preoperative aspect of bladder extrophy prior to surgery**

At the level of the external genitalia, the penis appears short, spread, retracted at the top and back with the presence of a complete epispadias. It also noted the presence of the two testicles slightly ascended at the inguinal level with scrotal skin.

The diagnosis of bladder extrophy-epispadias complex was retained. The biological assessment performed was normal. An unprepared abdominal x-ray (ASP) had objectified a wide diastasis. After a week of local care, it performed a bladder extrophy cure using the surgical reconstruction technique in a single procedure. The procedure was carried out as follows:

Bilateral ureteral intubation, inverted Y-incision along the bladder plate and then total dissection of the plate to the level of the inner edge of the rectus muscles. A ventral dissection of the penis, the lateral neurovascular packages to the corpora cavernosa were carefully avoided while spoiling the skin of the penile axis. The urethral plate was separated from the corpora cavernosa while leaving the tip of its distal end attached to the distal ends of both hemi-glands to allow its ventral transposition. The bladder plate was thus closed on a suprapubic probe with a continuous suture with absorbable suture 4/0. The urethral plate was tubulized on the ureteral drains and sutured with separate stitches to absorbable suture 6/0 Fig 2.

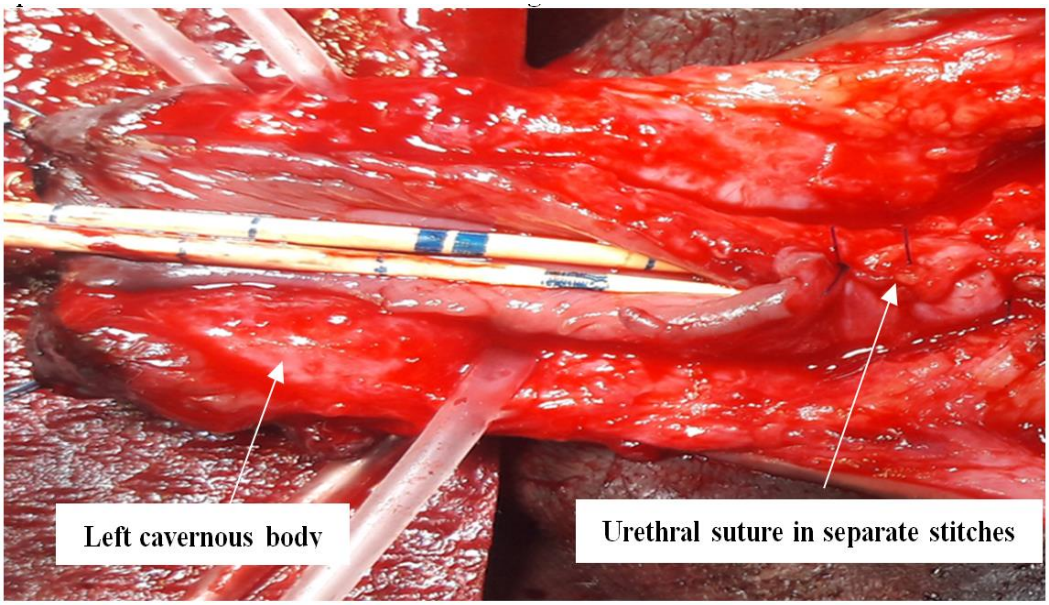


**Figure 2: Urethral suture with absorbable suture in separate points**

**Iconography**

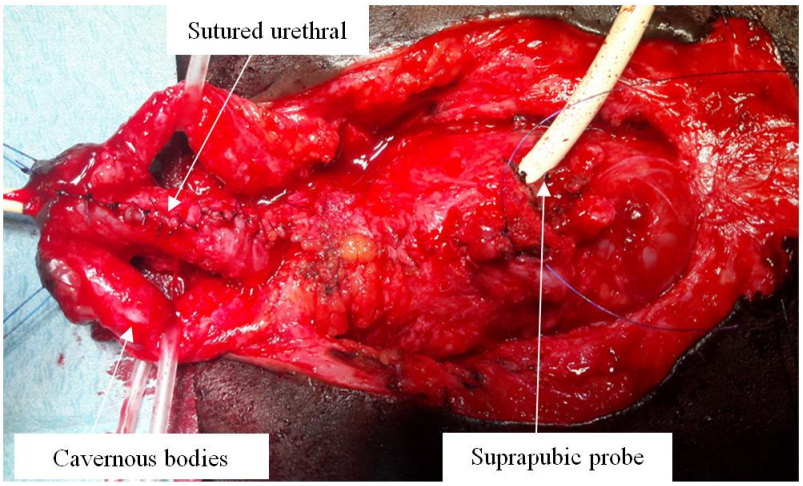


**Figure 3: Complete undressing of the corpora cavernosa and the distal end of the urethral plate attached to the glans**

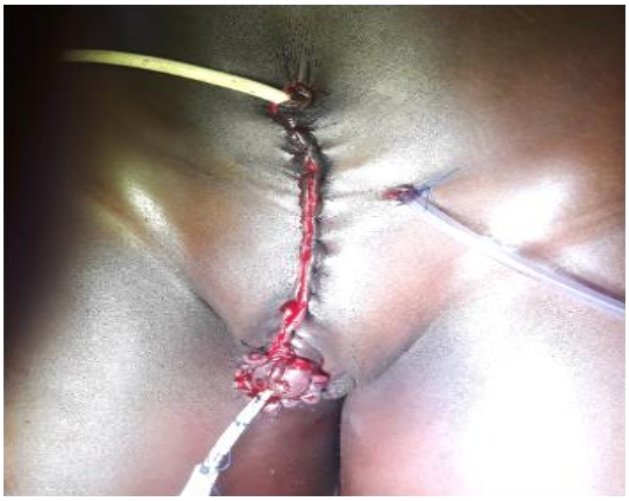

**Figure 5: Immediate post-operative aspect**

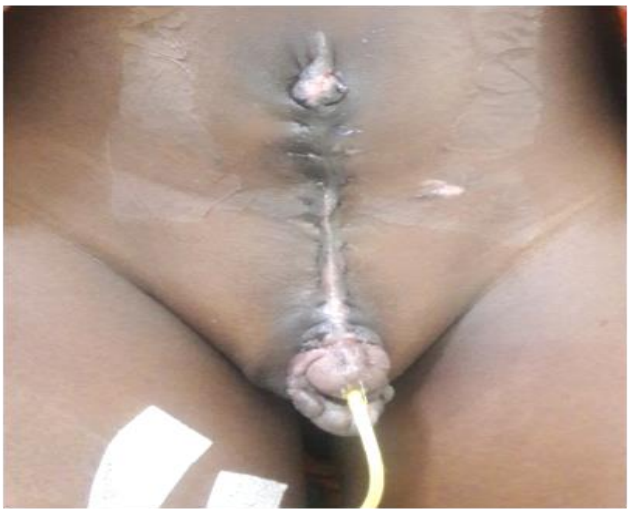

**Figure 6: Wound appearance on Day 10**

The urethral neomeatus then ends up being at the tip of the glans. The corpora cavernosa was dorsally close to the midline with separated stitches with 5/0 absorbable suture. This internal rotation of the corpora cavernosa made possible to correct the dorsal deviation. The two hemi-tassels were thus sutured with separate stitches. The pubic symphysis was brought closer to the midline using 1/0 non-absorbable sutures on the

symphyseal cartilage. Closure of the wound with redistribution of penile skin. Postoperative urine drainage was provided by the combination of two transurethral - and the pubic probe.

The immediate post-operative follow-up was simple. Removal of the transurethral probes was performed s 10 days later and the suspubic probe fell off 14 days later (postoperatively). A postoperative cystography performed showed a good bladder capacity and bilateral vesicoureteral reflux Fig. 7.

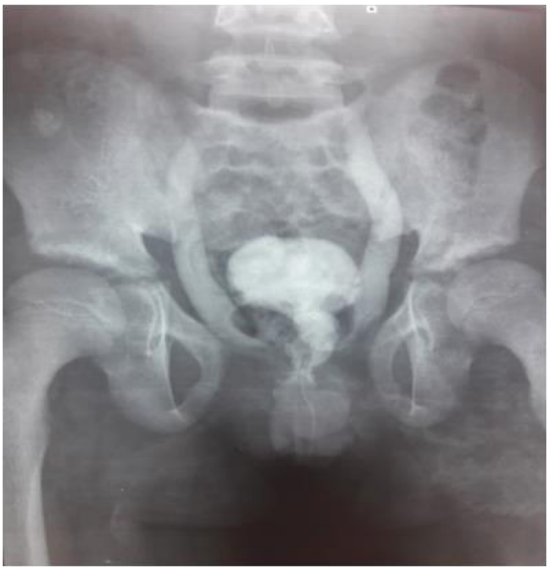

**Figure 7: Direct cystography on post-operative (15 days later)**

A leakage of decubitus urine by the neomeatus was observed after removal of the probes motivating the maintenance of the transurethral tube for two weeks. In addition, the patient was put on Oxybutynin 5mg (1/2 tablet morning and evening). His post-operative discharge was made on 14 Days.

## DISCUSSION

Bladder exstrophy is a rare malformative pathology, originally described in 1595 [14], whose antenatal diagnosis is possible, but in our context, patients are diagnosed most often after birth or at an older age. The patient in our observation was 10 years old.

In a study on the management of bladder exstrophy by Traoré *et al.*, the mean age was 14 years [4]. Several authors have pointed out that the diagnosis and management of this malformation was late, because these patients came from disadvantaged backgrounds characterized by untimely access to health facilities, lack of antenatal consultation with absence of obstetric ultrasound and sometimes home deliveries [2, 6].

The sex ratio of bladder extrophy is 1.5 to 2 boys for one girl [12, 13], but for some authors there is no predominance of one sex over the other [6].

Bladder exstrophy can have several aspects, but its complete form, which is similar to this clinical observation, is the most frequent. It is characterized by the absence of the anterior bladder wall, only the posterior bladder wall, with its two ureteral orifices called bladder plate is present. The urethra is malformed as a complete epispadias [5].

The management of bladder exstrophy is exclusively surgical. The first surgical treatment was attempted in 1850 by performing a vesicadal anastomosis. In 1862 Ayres, was the first to successfully seal bladder in a 28-year-old patient [15]. Current treatment modalities range from urinary diversion to reconstructive surgery [5]. However, regardless of the method used, this surgery, even in the best hands, has a large number of failures. Most of the authors are for bladder reconstruction, which can be performed in a single time or in several times, knowing that there is no treatment regimen currently unanimous among surgeons. Since the conclusions of the symposium on the treatment of bladder exstrophy in 1971; the principle of surgery in several stages was accepted by many authors [17]. On the other hand, according to a study carried out in Germany, one-time repair of bladder exstrophys is a good alternative to interventions in several successive stages [15].

Single-stage reconstruction (CPRE) was popularized in 1999 by Grady and Mitchell [7]. They closed the bladder and urethral plate in continuity with the repair of the epispadias using the complete undressing of the penis, the urethral plate is totally separated from the two hemiglands. HAFEZ, proposed to perform a modified urethral undressing leaving the

distal end of the urethral plate attached to the glans [9, 10, 19].

After removal of the transurethral tube, he developed urinary incontinence improved by bladder rehabilitation. Retrograde urethrocystography has arisen bilateral vesicoureteral reflux. The uretero-vesical junction is frequently abnormal due to a very short intramural path, which explains the high frequency of renal vesical reflux arisen after bladder plaque closure [11]. This reflux is usually managed by antibiotic prophylaxis, surveillance and ureteral reimplantation [18].

According to a study conducted between 1989 and 1997, the rate of urinary continence obtained after repair in a single stage is favorably comparable to that obtained after repair in successive stage [16].

## CONCLUSION

Bladder exstrophy is a rare malformation that can take several forms. The bladder-epispadias complex exstrophy is the most common form. Surgical reconstruction is performed in the neonatal period by several teams. At the end of this work, we found that even in cases diagnosed late, reconstruction in a single modified time gives encouraging results.

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