

# CLOSURE OF ABDOMINAL DEFECT BY USING NATIVE DETRUSOR MUSCLE FOR BLADDER EXSTROPHY

ATMA ULLAH<sup>1</sup>, MIM CHOUDHURY<sup>2</sup>, S REGMI<sup>1</sup>, AKMK ALAM<sup>1</sup>

## Introduction

Bladder exstrophy is a congenital anomaly that has been little bit difficult to correct. Advances in reconstructive surgery, have impacted on the care of these patients. The ideal reconstruction is directed to accomplish closure of the abdominal wall and bladder with subsequent correction of reflux, bladder neck revision for continence, and anatomical and functional repair of the epispadias. External and internal diversion may still be required for classical exstrophy when the bladder is represented by a fibrous patch and other complicating anomalies prevent closure or subsequent growth of the bladder<sup>1</sup>.

In such case, repair of anterior abdominal wall defect is also challenge. We present here a case where we used the native detrusor muscle of the patient after stripping off its mucosa to cover the muscular defect in the lower abdomen, and then the wound was covered by using local skin flaps.

## Case Report

This 27 years old unmarried male patient from Comilla presented to us with the complaints of defect in anterior abdominal wall & penis and continuous dribbling of urine since birth causing wetting of his clothes and foul smell, along with occasional loin pain treated with antibiotics & analgesics. He failed to seek proper medical advice in due time due to poverty and illiteracy.

Abdominal examination reveals absence of umbilicus & anterior abdominal wall in the lower part, the part is formed by the posterior wall of the bladder which is protruded through the defect and is covered by red congested mucosa with areas of keratinization. When the exposed mucosa is reduced, the wet trigone and the ureteric orifices can be seen through which there is dribbling of urine. Also the firm edge of the defect can be felt, along with the widely separated pubic bones. There is diversification of recto with recto inserted wide apart.

The penis is short. There is no EUM and the urethra is laid open in the whole of the dorsal aspect. Scrotum is normally developed with smaller testis in the left side. Some areas of excoriation can be seen in the scrotal



**Fig.-1:** Preoperative appearance of the lower abdominal wall & the genitalia.

skin. So, our clinical diagnosis was bladder exstrophy with epispadias totalis.

Biopsy was taken from the bladder which revealed squamous metaplasia of the lining epithelium with subepithelial proliferation of capillaries & infiltration by inflammatory cells. There was no evidence of malignancy.

Ultra sonogram of KUB region was done to see the state of upper urinary tract which revealed both kidneys to be normal in size, shape & position. PCS was not dilated in both sides. Pubic symphysis was wide apart in plain X-Ray of KUB region. Serum creatinine & IVU was normal.

Patient was properly counseled & prepared for anesthesia before operation. First, urinary diversion was done in the form of ileal conduit and the muscular abdominal wall defect was repaired by using the native detrusor muscle of the urinary bladder itself after stripping off its mucosa. Finally the wound was covered by paired inguinal skin flaps.



**Fig 2:** Preoperative Planning.



**Fig 5:** Final appearance after operation.



**Fig 3:** Approximation of Detrusor muscle with lower part of Rectus Abdominis muscle .



**Fig 4:** Approximation of the skin flaps.

**Discussion**

This case didn't present to us at the ideal time for reconstruction. He came to us at the age of 27 with incontinence as the main problem that is hampering his social life. The solution for this problem could be urinary diversion or neobladder formation by different ways, for example, using rectus abdominis muscle flap, micro vascular free flap using latissimus dorsi, etc as well as reconstruction of the abdominal wall<sup>2,3</sup>. Neobladder formation as well as closure of abdominal muscle defect needs pubic osteotomy or destruction osteogenesis of pubis bone but it is quite expensive and not possible in our situation. So we decided to perform urinary diversion in the form of ileal conduit and reconstruction of the muscular abdominal wall defect using the native detrusor muscle. Then the wound over the muscle was covered by bilateral inguinal flaps based on the superficial inferior epigastric artery<sup>4</sup>.

In case of extrophy bladder, abdominal wall is already weak especially in the infraumbilical part because of the lack of skeletal muscle and herniation may occur through this weakness. So, muscular reconstruction of the anterior abdominal wall is essential to prevent this complication. When we are not using detrusor muscle for neobladder formation, it is better to use it for reconstruction of the abdominal wall than doing cystectomy. However, we are concerned about the existing bladder mucosa which has already undergone metaplastic changes, with the chance of conversion to malignancy. So, before using the detrusor muscle, we must obtain biopsy from the epithelium to rule out malignancy and have to strip it off from the submucosal layer without hampering the vascular supply to the muscles.

**References**

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**Authors**

1. Department of Urology, BSMMU, Dhaka
2. Plastic Surgery Unit, BSMMU, Dhaka