

Evaluation of Early Postoperative Outcome of Success of Repair of One Stage Repair of Bladder Exstrophy

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Abstract

Bladder exstrophy is a rare congenital anomaly of the genitourinary tract producing ventral abdominal wall defect. Previously; it was operated by a multi-stage procedure. In the course of time, the repair of bladder exstrophy has evolved from a staged repair to a one-stage reconstruction with encouraging results in different countries. One-stage repair of bladder exstrophy is being practiced since 2007 in BSMMU. So; this study was conducted on one-stage repair of bladder exstrophy to observe early possible outcomes.

Methods: This prospective observational study was conducted at BSMMU on ten postoperative cases of Classic bladder Exstrophy who underwent one-stage repair from September 2018 to October 2021.

Results: Results show that 10% of the subjects developed wound dehiscence. The mean hospital stay was 18.9 days.

Conclusion: From the results found in this study, one-stage repair of bladder exstrophy achieved success in bladder, and abdominal wall reconstruction, as evidenced by the rate of wound dehiscence is comparably similar. Moreover, one-stage of repair of bladder exstrophy appears to be better enough for broader practice. One-stage reconstruction minimizes the number of surgical procedures required to achieve the treatment goals, including normal genital cosmesis and safe postoperative outcome.

Keywords

Bladder exstrophy, wound dehiscence, one-stage repair.

INTRODUCTION

Bladder exstrophy is a major congenital malformation in pediatric urology. The results are not still wholly satisfactory, and their management is an enormous problem.

The surgical correction of bladder exstrophy has evolved recently. Urinary diversion with ureterosigmoidostomy was the standard treatment until the late 1950s. Afterward, in the 1970s, it evolved to a staged repair, with early pelvic ring approximation and abdominal wall, bladder, and posterior urethral closure performed as a first stage, followed by second stage neo urethroplasty (modified Cantwell-Ransley technique) and finally a bladder neck surgical reinforcement by Yong-Dees-Leadbetter procedure. The modern staged repair (MSRE) technique includes bladder closure just

after birth. Epispadias repair is done at age 6-12 months and bladder neck reconstruction at age 4-5 years when a child is able to cooperate with attempting continence.

In the 1990s, Mitchell introduced the concept of one-stage reconstruction of exstrophy, where all the procedures mentioned above were performed as a single surgery comprehensive approach. The concept of this approach was to decrease the number of surgical procedures required to achieve continence, early bladder neck resistance, and bladder cycling. This technique presented good results, although it has some drawbacks, such as the risk of penile tissue loss and the necessity of osteotomies in older children. The posterior urethra and bladder is placed deep into the pelvis with a tension-free closure and adequate postoperative management is done to prevent complications.

The repair of bladder exstrophy has been adopted gradually from a staged repair to one-stage reconstruction. In this procedure, bladder closure and positioning deep in the pelvis, Cantwell-Ransley neourethroplasty and abdominoplasty is done with the use of groin flaps, without performing pelvic osteotomies. Urinary continence (UC) at toilet training age².

One-stage reconstruction of bladder exstrophy is cost-effective and requires less frequent hospital visits. Anesthetic hazards are less in one-stage reconstruction. The more psychological trauma of a child due to several operations occurs. The desired outcome of patient delays in multi-stage reconstruction, in turn, total outcome results in a single time in one-stage reconstruction of bladder exstrophy. The treatment goals are successful repair, functional continence, preservation of the upper urinary tract, and a safe postoperative period.

So, this study is conducted to assess the early outcome regarding the success of repair, degree of functional continence, and urinary tract infection.

METHODS

1. Study design: Prospective observational Study.
2. Place of study: Bangabandhu Sheikh Mujib Medical University.
3. Period of study: September 2018 to October 2021.
4. Population: Children admitted to BSMMU pediatric surgery department for Classic bladder exstrophy repair.
5. Sampling technique: Purposive type of sampling.
6. Sample size: 10 (according to the morgan table, due to covid pandemic situation)

RESULTS



Diagram I: Wound dehiscence among post-operative patients

- 10% have wound dehiscence
- 90% have no wound dehiscence

Among 10% of individuals, 100% of individuals were from the low socioeconomic conditions, and 100% were female.

DISCUSSION

In this study, 1 (10%) out of 10 patients with bladder exstrophy developed wound dehiscence. Whereas a study by Grady and Michael³, on 18 patients of bladder exstrophy repair showed no case of wound dehiscence after primary closure. Another study conducted on 15 patients of bladder exstrophy repair found that wound dehiscence occurred in one patient².

Compared with the above studies, the rate of wound dehiscence in this study is not significantly higher.

CONCLUSION

The results shows, one-stage repair of bladder exstrophy achieved successful repair. One-stage reconstruction minimizes the number of surgical procedures required to achieve the treatment goals. Considering all of these above-mentioned conditions, one-stage repair of bladder exstrophy seems promising enough for broader practice in Bangladesh.

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