Abstract #406: Continence outcomes following Reconstructive Lower Urinary Tract Surgery in Incontinent Adolescents and Adults previously operated in childhood for Exstrophy/Epispadias Complex

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Hypothesis / aims of study

- To describe the presentation and outcome of surgical management strategies applied to the adolescent and adult patient population (age >14 years) with bladder exstrophy/epispadias complex (BEEC) who presented with persistent incontinence even after previous numerous surgeries at our institution.

Study design, materials and methods

- A retrospective review of the electronic medical records of patients with exstrophy-epispadias complex managed in two high volume canters from January 1998 to December 2022 was undertaken.
- Patients aged >14 years at presentation, with detailed medical records were selected.
- Data on presenting symptoms, clinical findings, previous and present surgical intervention, post-operative complications, secondary procedures and follow-up periods were recorded.
- Data on continence was collected in the form of clean intermittent catherization (CIC) or voiding frequency, dry intervals and diaper usage.
- Subjective assessment of continence was assessed using the **I**nternational **C**onsultation on **I**ncontinence modular **Q**uestionnaire**–U**rinary **I**ncontinence **(ICIQ –UI)** short form with score range of 0- 21 highlighting the severity of incontinence

Results

- Thirty-six patients of BEEC aged > 14 years presented to our institution over this 24-year period, out of which 32 had undergone previous intervention.
- A total of 30 (19 male and 11 female) patients who presented primarily with persistent incontinence into adolescence or adulthood following previous repairs were identified and their records reviewed.
- Median age of presentation was 21 years (IQR,14-25.8) and they had undergone a median of 4 surgeries prior to presentation (range, 2-10). Three patients had already been augmented with bowel along with a Mitrofanoff channel.
- One patient was lost to follow up and two refused surgical intervention and 27 underwent a surgical continence procedure .

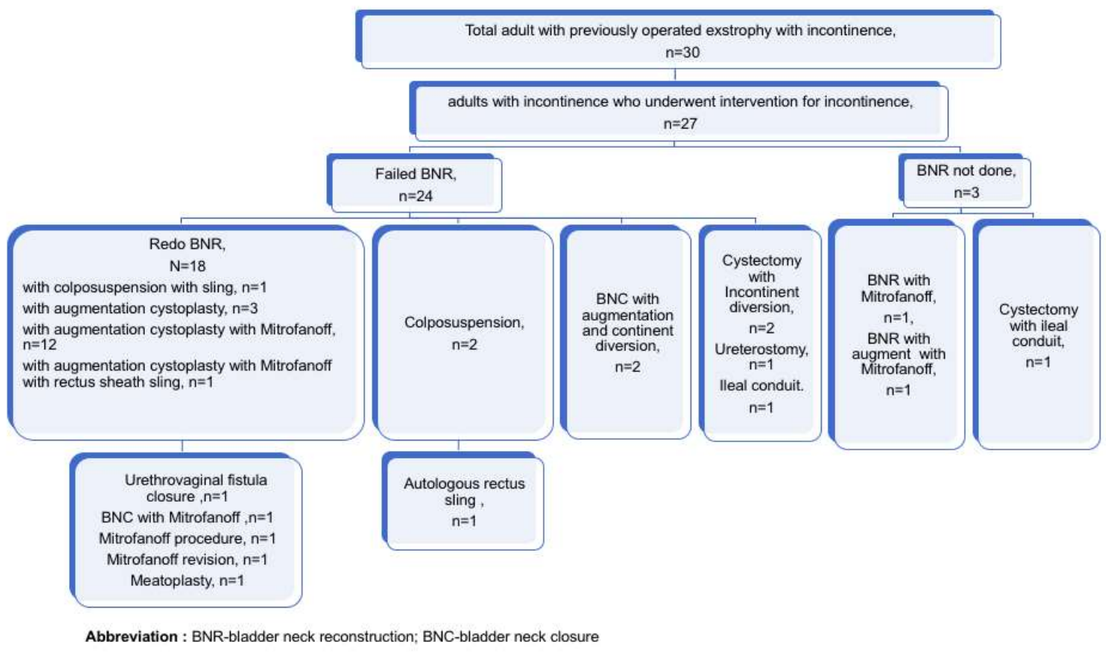

Fig 1. Flow chart showing different surgical management options used in cohort of adolescent and adults of bladder exstrophy /epispadias complex with persistent incontinence

- The median follow-up was 42 ((IQR,24-117) months.

Continence outcomes

- At last follow up, only one patient was volitionally voiding to completion, with the rest doing CIC through Mitrofanoff channel or by perurethral route with nearly 60 % having a dry interval of >90 min.

Fig 2. Pie chart showing dry interval ranges in the operated cohort at last follow up

- After excluding 3 patients who underwent urinary diversion, 17/24 (71.7%) patients had no need for diapers and only 21% had severe persistence urinary incontinence based on ICIQ-UI scores at last follow up.

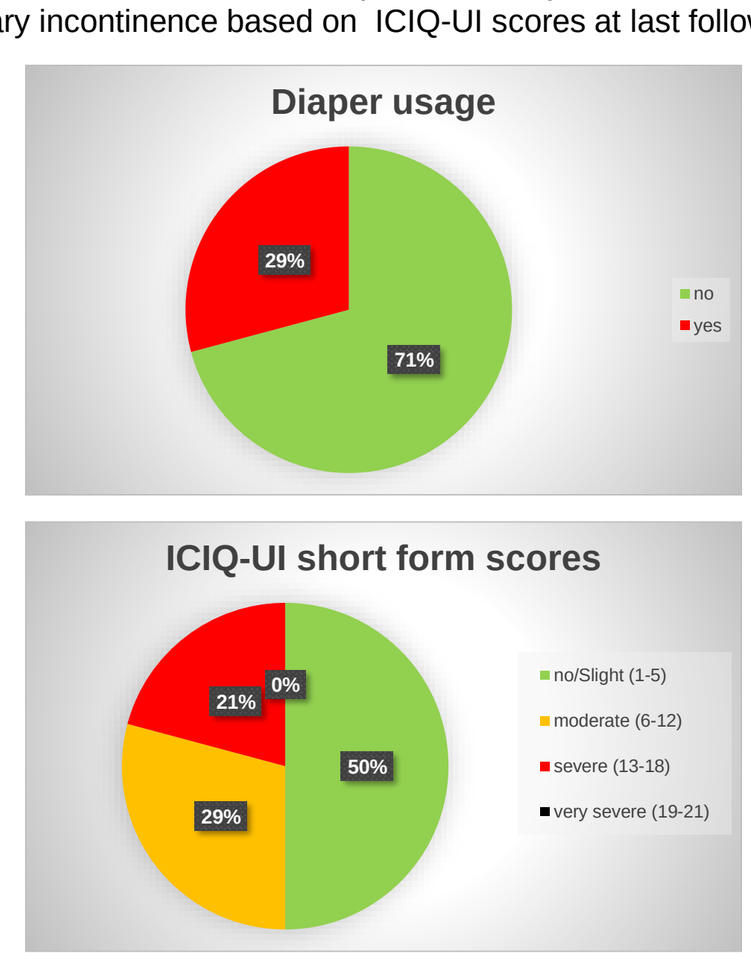

Fig 3. Pie charts showing (A) Diaper usage and (B) ICIQ –UI short form score ranges in the cohort at last follow up.

Interpretation of results

- The vast majority of Adolescent or adults with BEEC who present with persisting incontinence have undergone some form of bladder neck reconstruction (BNR) as was evident in our study (24/27, 88.8%).
- Traditionally, failure of BNR in patients with BEEC is often considered as an indication for bladder neck closure.
- While some patients are open to this option, in our experience the majority of the adolescents and adult patients though weren't averse to using a continent stoma, almost all of them were reluctant to consent to an irreversible option of a bladder neck closure and prefer to keep the per urethral passage open. Hence, it became imperative that we explore surgical options to achieve continence without a formal bladder neck closure.
- In this study, we observed that a redo BNR along with adjunct procedures like colposuspension and autologous slings can have good continence outcomes with nearly 70 % of patients becoming free of diapers.
- Also, in most cases the available bladder wall is used up in bladder neck reconstruction and there is little bladder wall left for effective contraction, hence volitional voiding is not possible in most of these patients as was evident in our study.
- We also observed that augmentation rates are quite high in our cohort (23/27,85%) as probably because of the long duration of incontinence these bladders haven't developed and have a small capacity necessitating augmentation.
- Addition of a Mitrofanoff channel allows effective emptying of the augmented bladder and also gives an alternate channel bypassing the reconstructed bladder neck which sometimes can be difficult to negotiate. In our study, nearly 79 % (19/24) had a Mitrofanoff channel constructed for facilitating CIC.

Conclusions

- Bladder exstrophy-epispadias complex is a difficult condition to manage, especially in resource-poor settings and some children with this condition reach adulthood and remain incontinent.
- For these patients, combination of reconstructive techniques provide hope of continence and an improved quality of life
- With careful preoperative assessment, exact surgical precision, and regular follow-up, a successful outcome can be expected in majority of cases without the need for external urine collection devices..

References

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