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Urologists Perception of Ureterocystoplasty: A Survey

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ABSTRACT

Introduction: Bladder augmentation remains a cornerstone of management for patients with a small, high-pressure bladder, often due to congenital or neurogenic etiologies. Ureterocystoplasty, using a dilated ureter, expands capacity without bowel incorporation risks; however, its clinical adoption remains limited due to the variable perspective on its indications and surgeon familiarity.

Objective: To assess the current utilisation of, and attitudes towards, ureterocystoplasty compared to enterocystoplasty among urologists globally, to understand the surgeon experience, and barriers to a using a large ureter for bladder augmentation.

Methods: A cross-sectional online survey was sent via email to pediatric urologists across the globe, through a professional network. The questionnaire, using 'SurveyMonkey', included four core elements, including the practice of ureterocystoplasty, the experience across urological units and indications for the procedure in the presence of a large ureter.

Results: Seventy-three responded "Yes" to performing ureterocystoplasty for bladder enlargement, but 71% had only performed 5 or less, and only 8% have performed more than 20. If a large ureter was available, 35 (48%) support the use of a dilated ureter, 11 expressing inclusion criteria. Notably of the 40 respondents who do perform ureterocystoplasty only 16 (40%) said they would perform the procedure when a large ureter was available. The data was also studied for the geographic location of the respondents.

Conclusion: Our findings highlight the widespread lack of familiarity with ureterocystoplasty among urologists globally, thus highlighting the need for greater awareness and training to adopt a technique that has some advantages in specific circumstances.

Key Words: Urologist survey, Ureterocystoplasty, Bladder augmentation, Extraperitoneal, Transuretero-ureterostomy, Enterocystoplasty, Exposure

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Introduction

In patients with compromised bladder compliance, often due to congenital or neurogenic pathologies, bladder augmentation is one of the cornerstones of management. The primary goal of bladder augmentation is to reduce intravesical pressure, improve bladder capacity, and preserve urological and upper urinary tract function.

The earliest and most widely adopted form

of augmentation utilised the bowel, known as "Enterocystoplasty" (EC). It involves incorporating bowel segments, typically the ileum or colon, into the bladder. It was first introduced in the late 19th century when Rutkowski and Mikulicz successfully incorporated a detubularised segment of the small intestine into the bladder. Although EC has proven to demonstrate consistent benefits, it is associated with various long-term metabolic and urologic complications, including excessive mucus production, urinary tract infections, vesicoureteric reflux or obstruction at the vesicoureteric junction, metabolic changes (acidosis), increased malignancy risk and spontaneous bladder perforation.

Gastrocystoplasty, another alternative for bladder augmentation that uses a stomach segment, was briefly explored in the mid-20th Century, particularly in Japan. However, it quickly fell into disrepute due to serious complications of hematuria-dysuria syndrome and metabolic alkalosis [1,2].

In 1973, Ureterocystoplasty (UC) was introduced by Eckstein as a bowel-free alternative [3]. It is often reported to involve using a dilated ureter from a non-functioning kidney to augment the bladder. UC is an excellent alternative option for bladder augmentation as it incorporates urothelium with the additional bladder component, which significantly reduces the metabolic risks and the chances of malignancy compared to the use of mucosal lined bowel.

In recent years, further developments of UC, including the extraperitoneal approach and transuretero-ureterostomy have expanded the procedures feasibility [4,5]. Despite the advantages of UC, our global survey highlights many urologists do not use the ureter for bladder augmentation when indicated, perhaps due to being unfamiliar with the procedure. This reveals a disconnect between awareness and the applicability of UC when the appropriate anatomy exists.

Additionally, unreported data collected through the "Kind Cuts for Kids" paediatric surgical outreach organisation across various countries globally, including Ethiopia, Bangladesh and Mozambique, provide compelling evidence for the selective use of UC. Among 45 patients who underwent UC by the Kind Cuts for Kids surgeons, follow up data from 23 individuals demonstrated a marked increase in bladder capacity, on average improving from 73mL to 263mL post-operatively. These data reinforce the effectiveness and practicality of UC, which therefore supports the contention that the technique warrants more attention as a tool in modern urological treatment of small bladders.

Ureterocystoplasty has been shown to be successful in certain contexts. It is often utilised in the context of removal of a non-functioning kidney. However, it is still not widely used globally even though there are clearly good outcomes reported [6,7].

Materials and methods

To evaluate the current global exposure and perceptions regarding UC and bladder augmentation among urologists, we conducted a cross-sectional survey. The survey was created using SurveyMonkey and distributed via email to a targeted list of urologists, focusing on surgeons who primarily operate in a pediatric population, identified through professional networks and pediatric urology societies.

A total of 73 responses were received. The survey consisted of the following 4 questions:

- Do you perform paediatric urology surgery?
- Do you perform ureterocystoplasties for bladder enlargement?
- How many ureterocystoplasties has your unit performed?

• If a large ureter is available, would you use bowel to augment a small bladder?

The responses were collected and collated and were analysed to identify prevailing trends and surgical preferences among the respondents. The data were exported from SurveyMonkey into Microsoft Excel for cleaning and descriptive statistical analysis.

Results were reported as counts and percentages.

Results

Of the 73 respondents, 40 (55%) said "Yes" to performing ureterocystoplasty for bladder enlargement. Most respondents had limited unit-level exposure 52 (71%) indicated by having performed <5 UC procedures, while 21 (29%) reported >5. Six (8%) had >20. In a situation where a large ureter was available, 24 (33%) stated "Yes" to utilising the ureter for bladder augmentation, and an additional 11 respondents stated "Other" and continued to specify that it depends on the clinical scenario and the need for the ureterocystoplasty, but that they would use the large ureter if required. Thus, a total of 35 (48%) supporting the use of a large ureter when it is available (Table 1).

Among the 40 respondents who do perform ureterocystoplasty for bladder augmentation, only 16 (40%) said they would perform the procedure when a large ureter was available. This raises the question about the clinical context & difference in opinions among pediatric urologists about when the ureter is considered "usable".

Of note, many respondents said "Yes" to using the large ureter but said "No" to if they would perform a ureterocystoplasty. This can be interpreted as an openness to the procedure which they do not perform because of a lack of familiarity with the technique.

Country-level patterns appear to be distributed evenly. Out of the 17 Australasian responses, only 8 (47%) performed ureterocystoplasty, with 6 (35%) highlighting that they would prefer to use bowel in the presence of a large ureter. Among the 23 European, African and Middle Eastern responses, 14 (61%) performed ureterocystoplasty. The data from the Americas showed that 20 out of the 33 respondents (61%) perform ureterocystoplasty, indicating a greater proportion relative Australasia. Though, 13 (41%) still reported preferring bowel despite the presence of a large ureter.

Of note, is that the centres which have performed more than 10 cases of ureterocystoplasties. Out of the 9 centres, 4 are based in Australia, 4 in North America (3 United States, 1 Mexico) & 1 in South America (Chile). Regardless, a sizeable proportion in all regions still favoured bladder augmentation with bowel even when a large ureter was present. These findings should be interpreted cautiously given the potential bias of the network-driven sampling of respondents.

Table 1. Survey responses from pediatric urologist group *via* SurveyMonkey.

	Yes	**No**
Do you perform pediatric urology surgery?	72 (99%)	1 (1%)
Do you perform ureterocystoplasties for bladder enlargement?	40 (55%)	33 (45%)
If a large ureter is available, would you use bowel to augment a small bladder?	35 (48%)	38 (52%)
	16 (40%) among those that do perform ureterocystoplasties	24 (60%)

Discussion

Despite being an established alternative technique to enterocystoplasty, ureterocystoplasty remains a significantly underutilised procedure in contemporary urology. Our survey, conducted on a global scale, highlights the widespread lack of familiarity and exposure amongst urologists. UC is an excellent approach that utilizes native urothelium to enlarge bladder, thus avoiding the long-term metabolic complications associated with bowel tissue [6,7]. Not only does UC improve bladder capacity with a urothelial enlargement, it also repurposes the ureter for augmentation rather than discarding the "spare part"- and in some patients it resolves the vesicoureteric reflux that would predispose to infection. Therefore, maximising the use of the "spare-part" ureter is a pragmatic, and elegant approach if bladder augmentation is surgically indicated. Yet, hesitancy to perform UC persists, largely due to limited clinical case load and a lack of proactive consideration of the ureteric tissue for bladder augmentation, even though studies have shown it to be a safe and effective approach [8-10].

Certain notable factors emerged from our findings, highlighting not only the rarity of UC in daily practice for urologists globally, but also their reluctance to perform the technique; not even considering it when indicated by the presence of a large ureter. Over 50% of the surveyed urologists stated that they would not choose UC for bladder augmentation even when a dilated ureter was available, and nearly 70% had performed fewer than 5 procedures throughout their career. These findings suggest the issue revolves around urological surgical training, plus lack of awareness, confidence and proficiency with using the ureter.

Bladder augmentation is a cornerstone of management in patients with poorly compliant, high-pressure bladders that cause incontinence and progressive renal injury. While Enterocystoplasty (EC), which uses bowel segments, most usually the ileum [11], is the traditional approach, the long term metabolic and urologic risks associated with the incorporation of intestinal lining have prompted consideration of other techniques, including autoaugmentation alone, autoaugmentation combined with muscle patches and the incorporation of demucosalised bowel muscle patches alone [12-14].

Ureterocystoplasty, offers a bowel-free solution that preserves the urothelium and native tissue physiology; thus avoiding many bowel-related complications, while concurrently potentially reducing the infection risk of redundant renal tract tissue [6,7,15].

A single-centre retrospective study comparing ureterocystoplasty and enterocystoplasty over a 20-year period found significantly more frequent occurrences of urosepsis and febrile UTIs in the patient group who underwent enterocystoplasty [16]. The reason for this greater proportion of metabolic complications is due to the non-native tissue used that allows bacterial colonisation. Ureterocystoplasty uses ureteric tissue; enterocystoplasty joins gut epithelium to ureteric tissue. In a ureteroileal anastomosis, Byard RW, et al, reported the histology of seventy-two ureteroileal anastomoses taken from sixty-two patients in order to characterise the mucosal changes [17]. They found that all seventy-two had variable amounts of subepithelial chronic inflammation and fibrosis with notably twenty-nine (40%) with cystic spaces lined by transitional epithelium and twenty-one (29%) with cystically dilated intestinal glands of an average diameter of 0.24 mm. The latter was also associated with an overgrowth of transitional epithelium, which is a result of the anastomosis of the non-native ileal tissue [17]. An earlier study by the same authors reports similar findings on a smaller population scale; therefore, confirming that inflammation, fibrosis and glandular overgrowth by transitional epithelium at

ureteroileal anastomosis sites in common and can lead to subsequent gland rupture [17,18]. These epithelial level changes are considered to be the precursor to bladder perforation in bowel enlarged bladders. DeFoor W, et al., compared the perforation rate in bladder augmentation between stomach, colon and ileum [19]. He found a statistically significant risk of perforation between stomach and ileum, where 11% (4/37) with ileocystoplasty had perforation using a regular intermittent catheterisation. Noting that perforation is one of a number of complications of using gut to enlarge the bladder [19].

Whilst the most common indication for performing UC is in the context of non-functioning kidney with a dilated ureter, UC can easily be applied in other cases. Case reports and small series have demonstrated UC's utility in cases involving bilateral nephrectomies, and laparoscopic surgery. Ureterocystoplasty has also be demonstrated to be feasible in cases of bladder exstrophy, as illustrated by a unique case involving an obstructed ureter, where a dilated right ureter was used for bladder augmentation following a transureteroureterostomy [4]. This underscores the adaptability of UC in complex anatomical scenarios, where ureteric segments that would otherwise be discarded can be effectively repurposed. In this instance, adjunctive procedures such as transureteroureterostomy allowed for optimal use of functional tissue-both by salvaging the ureteric segment for augmentation and preserving ipsilateral renal function. This strategy has proven successful in additional cases as well [5].

Ahmed also reports significant improvements in urodynamic parameters without evidence of vesicoureteral reflux on follow-up and advocates for the use of a dilated ureter when available [20]. Collectively, these cases highlight the versatility and clinical utility of UC in bladder augmentation, especially in patients who have bladder exstrophy.

UC's capacity to improve bladder capacity, all whilst preserving the native tissue preventing the metabolic complications is well-supported, but still remains heavily underutilised in clinical practice [21]. A likely contributor to this underutilisation is how UC is perceived during surgical training. It may be regarded as a niche procedure, inconsistently taught or discussed in urology curricula-particularly evident in most institutions which have minimal clinical case load for the procedure. A greater proportion of those whom had experienced less than 5 cases of ureterocystoplasty responded "No" to if they performed ureterocystoplasty; indirectly supporting the idea that because of their lack of familiarity in their institution, they prefer not to utilise the procedure (Table 1). To overcome this, we propose the development of dedicated centres of excellence for ureterocystoplasty where surgeons can gain hands-on experience, share expertise and contribute to global data collection. These centres would become the national/ global hubs for surgical training specialising in UC and leads in research; thus ensuring the next generation of urologists are equipped with the skills and awareness necessary to perform UC when appropriate.

Another reason why ureterocystoplasty may remain underutilised relates to the nature of the evidence that supports it. Much of the published literature consists of small case series or retrospective single-centre studies, often without direct comparison to enterocystoplasty. Although these reports generally show favourable outcomes, the lack of larger comparative datasets may discourage surgeons to adopt the technique, particularly in settings where changes in practice are guided by an evidence base. In contrast, enterocystoplasty is supported by decades of accumulated experience and a far broader evidence base, which likely reinforces its role as the default approach, even when patient anatomy may be well suited to a ureter-based augmentation [22,23].

In addition, institutional factors and perceptions of surgical risk may also influence procedure selection. Enterocystoplasty is a familiar operation with well-established perioperative pathways, postoperative surveillance protocols, and clearly recognised complication profiles. Ureterocystoplasty, on the other hand, may be perceived as more technically difficult, particularly the preservation of the ureteral blood supply, and ensuring long-term durability of the augmentation. Even in the absence of evidence suggesting worse outcomes, the perceived risks may lead surgeons and institutions to favour the more conventional option. As a result, ureterocystoplasty may be underutilised not because it is inferior, but because it sits outside the current established norms of routine practice.

Finally, our findings are supported by the operative data of 45 ureterocystoplasties performed across multiple countries globally through the Kind Cuts for Kids organisation. Our cases demonstrated marked improvements in bladder capacity and continence, reinforcing that ureterocystoplasty is not only safe and effective, but also scalable across health systems globally.

Although our survey and review provide strong evidence to support ureterocystoplasty, this study is limited by its survey-based design, which relies on self-reported experience, and additionally respondents may represent urologists with a pre-existing interest in bladder augmentation, potentially overestimating the quantitative data for familiarity we received, even though it was not to the greatest proportion.

Conclusion

Despite its clear clinical advantages, ureterocystoplasty remains underutilised and the less preferred surgical technique in modern urological practice. Our global survey highlights the significant gap in exposure, and confidence among urologists even in ideal contexts. The findings reveal the urgent need for formalised training pathways, and the establishment of dedicated centres of excellence to support the integration of ureterocystoplasty into standard practice. The incorporation of ureterocystoplasty may play a prominent role in the surgical management of bladder dysfunction.

Artificial intelligence

Generative AI and AI-assisted technologies were NOT used in the preparation of this work.

Conflict of interest

The authors declare no conflicts of interest.

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Ethical approval

The survey was voluntary, and consent was affirmed via participation. The authors have read the policy of the journal as stated in the guide to Authors.

References

[1] Rutkowski M. Zur methode der harnblasenplastik. Zentralbl Chir. 1899;16(473-478):19.

[2] Mikulicz JV. Zur operation der augebornenen blasenspalte. Zentralbl F Chir. 1899;26:641-654.

[3] Eckstein HB, Martin MRR. Uretero-cystoplastik. Acta Urol. 1973;255-257.

[4] Dewan PA, Erdendtsetseg G, Zhao ZG, et al. Ureterocystoplasty as part of primary closure of bladder exstrophy. BJU Int. 2003;92(1):146-149.

[5] Dewan PA, Condron SK. Extraperitoneal ureterocystoplasty with transureteroureterostomy. Urology. 1999;53(3):634-636.

[6] Dewan PA, Stefanek W. Autoaugmentation gastrocystoplasty: Early clinical results. Br J Urol. 1994;74(4):460-464.

[7] Dewan PA, Nicholls EA, Way Goh D. Ureterocystoplasty: An extraperitoneal, urothelial

bladder augmentation technique. Eur Urol. 1994;26(1):85-89.

[8] Hofmann A, Ioannou A, Zöhrer PI, et al. Ureterocystoplasty in Boys with Valve Bladder Syndrome-Is This Method Still up to Date?. Children. 2023;10(4):692.

[9] Parkinson E, Robb A, McCarthy L. Long-term survival of bladder augmentation is influenced by its shape and mucosal lining. J Pediatr Surg. 2025;60(3):162051.

[10] Johal NS, Hamid R, Aslam Z, et al. Ureterocystoplasty: long-term functional results. J Urol. 2008;179(6):2373-2376.

[11] Mehmood S, Alhazmi H, Al-Shayie M, et al. Long-term outcomes of augmentation cystoplasty in a pediatric population with refractory bladder dysfunction: A 12-year follow-up experience at single center. Int Neurourol J. 2018;22(4):287-294.

[12] Dewan PA, Stefanek W, Lorenz C, et al. Autoaugmentation omentocystoplasty in a sheep model. Urology. 1994;43(6):888-891.

[13] Dewan PA, Stefanek W, Lorenz C, et al. Autoaugmentation gastrocystoplasty and demucosalized gastrocystoplasty in a sheep model. Urology. 1995;45(2):291-295.

[14] Dewan PA, Stefanek W. Autoaugmentation colocystoplasty. Pediatr Surg Int. 1994;9(7):526-528. [Crossref]

[15] Ergin G, Köprü B, Ebiloğlu T, et al. Our experience with ureterocystoplasty in bilateral functional kidneys. Turk J Urol. 2018;45(Suppl 1):S78-S83.

[16] Zafarghandi RM, Zeraati A, Tavakoli M, et al. Comparison of enterocystoplasty and ureterocystoplasty before kidney transplantation. Int J Organ Transplant Med. 2010;1(4):177-182.

[17] Byard RW, Ahmed S, Phillips GE, et al. Further observations on histological changes at the ureteroileal junction in ileal conduits. Pediatr Surg Int. 1997;12(5):397-400.

[18] Byard RW, Phillips GE, Ahmed S. Pathologic features of the ureteroileal anastomosis in ileal conduits in childhood. Hum Pathol. 1993;24(2):189-193.

[19] DeFoor W, Tackett L, Minevich E, et al. Risk factors for spontaneous bladder perforation after augmentation cystoplasty. Urology. 2003;62(4):737-741.

[20] Ahmed S, De Castro R, Farhoud RA, et al. Augmentation ureterocystoplasty in bladder exstrophy: 5-year follow-up in two cases. Eur Urol. 2002;42(6):631-634.

[21] Zahran MH, Harraz AM, Fakhreldin I, et al. 5-Year long-term outcome of live-donor renal transplant recipients with enterocystoplasty and ureterocystoplasty: An age-and sex-matched pair analysis. Urology. 2021;149:234-239.

[22] González R, Ludwikowski BM. Alternatives to conventional enterocystoplasty in children: A critical review of urodynamic outcomes. Front Pediatr. 2013;1:25.

[23] Taghavi K, O'Hagan LA, Bortagaray J, et al. Complication profile of augmentation cystoplasty in contemporary paediatric urology: A 20-year review. ANZ J Surg. 2021;91(5):1005-1010.