Original Article
Special Topic: Advances in Pediatric Urology
Current Urology
OPEN

Our experience with management of congenital urological pathologies in adulthood: What pediatric urologists should know and adult urologists adopt in pediatric practice experience

Leon Chertin[a], Binyamin B. Neeman[b], Jawdat Jaber[b], Guy Verhovsky[a], Amnon Zisman[a], Ariel Mamber[b], Ilan Kafka[b], Ala Eddin Natsheh[b], Dmitry Koulikov[b], Ofer Z. Shenfeld[b], Boris Chertin[b,*], Stanislav Koucherov[b], Amos Neheman[a]

[a]Department of Urology, Shamir Medical Center, Zerifin, Israel (Affiliated with the Sackler School of Medicine, Tel-Aviv University, Tel-Aviv, Israel); [b]Department of Pediatric Urology, Shaare Zedek Medical Center, Jerusalem, Israel (Affiliated with the Faculty of Medicine, The Hebrew University, Jerusalem, Israel)

Abstract

Purpose: To summarize our experience in the management of congenital anomalies in the kidney and urinary tract (CAKUT) in adults.

Materials and methods: We conducted a retrospective chart review of all adult patients who underwent primary surgical intervention for CAKUT between 1998 and 2021.

Results: The study included 102 patients with a median age of 25 (interquartile range, 23–36.5). Of these, 85 (83.3%) patients reported normal prenatal ultrasound, and the remaining 17 (16.7%) patients were diagnosed with antenatal hydronephrosis. These patients were followed-up conservatively postnatally and were discharged from follow-up because of the absence of indications for surgical intervention or because they decided to leave medical care. All studied adult patients presented with the following pathologies: 67 ureteropelvic junction obstructions, 14 ectopic ureters, 9 ureteroceles, and 6 primary obstructive megaureters, and the remaining 6 patients were diagnosed with vesicoureteral reflux. Forty-three percent of the patients had poorly functioning moieties associated with ectopic ureters or ureteroceles. Notably, 67% of patients underwent pyeloplasty, 9% underwent endoscopic puncture of ureterocele, 3% underwent ureteral reimplantation, 6% underwent endoscopic correction of reflux, 7% underwent partial nephrectomy of non-functioning moiety, and the remaining 9% underwent robotic-assisted laparoscopic ureteroureterostomy. The median follow-up period after surgery was 33 months (interquartile range, 12–54). Post-operative complications occurred in 5 patients (Clavien-Dindo 1–2).

Conclusions: Patients with CAKUT present clinical symptoms later in life. Parents of patients diagnosed during fetal screening and treated conservatively should be aware of this possibility, and children should be appropriately counseled when they enter adolescence. Similar surgical skills and operative techniques used in the pediatric population may be applied to adults.

Keywords: Antenatal diagnosis; Congenital anomalies; Adults; Minimal invasive surgery

1. Introduction

Despite the worldwide availability of prenatal ultrasound (US), several patients are diagnosed in adult life with congenital anomalies, such as ureteropelvic junction obstruction (UPJ-O), vesicoureteral reflux (VUR), ureterocele, or ectopic ureter.[1] Antenatal diagnosis has changed the initial approach for congenital pathologies from surgical intervention in the majority of patients to more conservative management, sparing some children from unnecessary surgery.

We have previously demonstrated in numerous publications that at least half of the children with an antenatal diagnosis of hydronephrosis due to UPJ-O do not require surgical treatment and may be followed-up conservatively.[2,3] However, the long-term consequences of this approach remain unknown.

Moreover, a question arises as to whether we can assure the parents of children with congenital anomalies in the kidney and urinary tract (CAKUT) during antenatal and postnatal counseling that conservative management, if one has been chosen, would provide renal function preservation and lack of complications during adulthood. We have shown that some children with VUR who were discharged from follow-up due to the absence of symptoms after adolescence experienced renal function deterioration and febrile urinary tract infection (UTI) during adulthood.[4] Moreover, these patients demonstrated a significantly higher incidence of lower UTI, even after successful reflux correction. Recently, we have witnessed an increased number of publications on the conservative management of pathologies, such as ureterocele.[5,6] In addition, in this patient population, a lack of long-term data is required to justify this approach.

We conducted a multicenter study to review our experience with the treatment of CAKUT in adult patients, with a special emphasis on their prenatal history and postnatal management.

*Corresponding Author: Boris Chertin, MD, Department of Pediatric Urology, Shaare Zedek Medical Center, Shmuel (Hans) Beyth St 12, Jerusalem, 9103102, Israel. E-mail address: boris.chertin@gmail.com (B. Chertin).

Current Urology, (2024) 18, 1, 7–11

Received December 22, 2022; Accepted June 19, 2023.

http://dx.doi.org/10.1097/CU9.0000000000000228

2. Materials and methods

We retrospectively reviewed the medical records of all adult patients who underwent primary surgical intervention for CAKUT between 1998 and 2021 at the 2 centers. We previously published our regimen of antenatal hydronephrosis and other congenital anomalies in children.[2,4] Briefly, hydronephrosis was identified on prenatal US in all patients during the second trimester (20–22 weeks of pregnancy), as part of a routine screening program for fetal anomalies in Israel. Ultrasound was performed on day 3 of life in children with an antenatal diagnosis of hydronephrosis, and the examination was repeated to grade hydronephrosis. Dynamic Diethylenetriamine pentaacetate (DTPA) or mercaptuacetyltriglycine (MAG) 3rRadionuclide studies were carried out at 6–8 weeks of age. The frequency of further examinations was tailored to the findings of the initial studies. The isotope washout curve was recorded after a bolus of 1 mg/kg furosemide was injected 15 minutes after radionuclide administration. Dimercapto succinic acid (DMSA) renal scans were performed to the relative renal function using background-corrected regions of interest of each kidney in the posterior view and to calculate the resultant percentage uptake. Renal scintigraphy was performed 2 hours after DMSA injection. The fractional left and right renal activities were calculated for each kidney. A kidney uptake of 40%–50% of total renal activity was considered as normal. A relative renal function of 30%–40% was considered as moderate, and renal function below 30% of relative renal function was considered as poor. Stable renal function without deterioration and signs of worsening hydronephrosis are the main indications for conservative treatment. In this scenario, children were advised to undergo repeat evaluations, including US examination every 3–6 months during the first 4 years and annually thereafter as a routine follow-up. In all cases, a radionuclide study was recommended at the beginning of the adolescent period and a repeated study after the patients completed adolescence, starting at the age of 16 years upon enlisting in the army. All adult patients with clinical symptoms of incidental findings of UPJ-O underwent both US examination and MAG 3 radionuclide scan using a protocol similar to that used for pediatric patients. In some cases, CT urography and MRI urography (MRU) were used to identify the precise pathology and remove obstruction at the UPJ.

All adult patients with a previously known diagnosis of ureterovesical junction obstruction underwent reevaluation when indicated, including repeat US examination and dynamic MAG 3 radionuclide scans. In equivocal cases, CT urography or MRU was performed depending on availability and the physician's choice. Open dismembered reimplantation was performed using the same technique (Politano-Leadbetter) in all patients when indicated. The Robot-assisted laparoscopic dismembered extravesical cross-trigonal ureteral reimplantation (RADECUR) has been used over the last 5 years.[7]

In patients with VUR, the reflux grade was based on voiding cystourethrography (VCUG) before and after surgery, according to the International Classification System (International Reflux Study Committee). As previously mentioned, the only indication for the surgical correction of VUR in the pediatric population in our service was recurrent febrile UTI.[4,8] All reviewed patients were diagnosed with reflux during adolescence and were allocated to follow-up only, without antibiotic prophylaxis, according to parental decisions or the choice of the primary physician. They returned to our attention because of recurrent febrile UTI. Since the possibility of spontaneous resolution of UTI in the adult population is unlikely, all patients received antibiotic prophylaxis after surgery, which was continued until definitive treatment cured the VUR. The adult patients in this group were diagnosed with reflux on VCUG, which they underwent as part of our routine protocol after the occurrence of febrile UTI. To rule out intravesical obstruction, the International Prostate Symptom Score was completed for every male patient, and uroflowmetry was performed when needed. For female patients, detailed medical histories were obtained. In cases where "obstructive symptoms" were suspected, a full urodynamic study with pressure flow measurements was performed.

The endoscopic correction technique was identical to that described for the pediatric population.[4,8] In patients with grade I–III VUR, we used the usual STING technique, introducing the needle submucosally under the ureteral orifice at the 6-o'clock position. In patients with grade IV VUR or in those with a wide ureteral orifice, the injection was performed inside the orifice as described previously. During the last 4 years, we have adapted a lifting technique for the STING that allows for a more precise placement of the implant with an increased success rate.[8] Over the study period, we have used polytetrafluoroethylene (Teflon) as a tissue-augmenting substance, Dextranomer/Hyaluronic Acid Copolymer copolymer, and over the last 11 years, polyacrylate-polyalcohol copolymer, namely, Vantris.

Our protocol for the postnatal management of antenatal hydronephrosis due to ureterovesical junction obstruction was similar to a previously published UPJ protocol.[2–4] After postnatal confirmation of the antenatal pathology, all patients underwent VCUG to exclude VUR. If the child had stable renal function without worsening of hydronephrosis, the decision was made to follow-up conservatively in the same manner as that previously mentioned in children with UPJO.

Endoscopic puncture of the ureterocele is the treatment of choice in our department for all children with a prenatal diagnosis of ureterocele.[9] If the ureterocele was diagnosed in adulthood in symptomatic patients, endoscopic puncture and incision were performed in the same manner as in pediatric patients.

Preoperative evaluation and postoperative follow-up included renal and bladder US scans, VCUG, and repeated renal scans for DTPA, MAG-3, and DMSA. All ureteroceles were classified as intravesical or ectopic. All patients received antibiotic prophylaxis after puncture until the VCUG showed no reflux. The patients who showed persistent reflux into the lower moiety of the ipsilateral or contralateral kidney or iatrogenic reflux into the ureterocele moiety remained on antibiotic prophylaxis until either spontaneous resolution of reflux or definitive treatment cured the VUR. The blood pressure was routinely recorded in patients with poorly functioning kidneys caused by VUR reflux or in those with poorly functioning upper poles left in place. In case of nonfunctioning kidney, upper pole nephrectomy or upper pole heminephrectomy was considered.

In adult patients in whom the ectopic ureter was diagnosed with duplex or single-system renal and bladder US scans, VCUG, and renal scans, either DTPA or MAG-3 and DMSA were performed. Over the last 10 years, we have performed MRU examinations in all patients with suspected ectopic ureters. Until 2016, all patients with nonfunctional or poorly functioning (less than 20%) ectopic ureter associated moieties underwent either open or laparoscopic partial nephrectomy. Patients with a single ectopic ureter underwent open ureter reimplantation or RADECUR reimplantation. Currently, if an ectopic ureter is associated with a duplex system with no VUR in the lower moiety, our choice is ipsilateral laparoscopic robot-assisted uretero-ureteral anastomosis regardless of the renal function of the associated renal moiety and ureteral diameter.[10]

All statistical analyses were performed using GraphPad Prism 6.01 (Graph Pad Prism 6 for Windows, Version 6).

3. Results

The demographic and clinical data of all patients are presented in Table 1. In brief, we identified 102 patients with a median age of

Table 1

Demographic and clinical data.

Clinical data	n
Pathology	
UPJ	67
Primary obstructive megaureter	6
VUR	6
Ectopic ureter	14
Ureterocele	9
Age (median, yr)	25
Renal function, %	
Normal (40–50)	32
Moderate (30–40)	26
Poor/Non-functioning (<30)	44
Follow-up (median, mo)	33
Clavien-Dindo complications	
I	2
II	3

UPJ = ureteropelvic junction; VUR = vesicoureteral reflux.

25 years (interquartile range, 23–36.5 years). Of these, 85 (83.3%) patients reported normal prenatal US, and the remaining 17 (16.7%) patients were diagnosed with antenatal hydronephrosis. These patients were followed-up conservatively postnatally and were discharged from follow-up owing to the absence of indications for surgical intervention. All adult patients presented with the following pathologies: 67 UPJ obstructions, 14 ectopic ureters, 9 ureteroceles, and 6 primary obstructive megaureters; the remaining 6 patients were diagnosed with VUR. Forty-three percent of the patients had poorly functioning moieties associated with ectopic ureters or ureteroceles. Notably, 68 (68%) patients underwent pyeloplasty: of those, 8 patients underwent open dismembered pyeloplasty, 8 patients underwent laparoscopic procedures, and the remaining 50 patients underwent robotic-assisted laparoscopic dismembered pyeloplasty, respectively. Overall, 9 (9%) patients underwent endoscopic puncture of ureterocele, 3 (3%) patients underwent ureteral reimplantation wherein 1 RADECUR technique was used, 6 (6%) patients underwent endoscopic correction of reflux, 7 (7%) patients underwent partial nephrectomy of non-functioning moiety, and the remaining 9 (9%) patients underwent robotic-assisted laparoscopic ureteroureterostomy (RALUU). There was no difference in the rate of clinical symptoms (UTIs, flank pain, and urinary retention) between neonates who were followed-up conservatively and those diagnosed during adulthood. Furthermore, when following renal function changes in patients with obstructive uropathy who were diagnosed antenatally, we observed non-significant changes in the renal function compared with the adult cohort. The median follow-up period after surgery was 33 months (interquartile range, 12–54 months). Post-operative complications occurred in 5 patients (Clavien-Dindo 1–2).[11]

4. Discussion

The widespread use of antenatal US has changed the postnatal management of CAKUT.[1] Moreover, the diagnosis of congenital anomalies in adult patients is common and requires an understanding of the underlying pathology and familiarity with the surgical techniques usually used in pediatric practice.[12–14]

In the majority of patients (83%) in this study, antenatal US was reported as normal, and in 17% of the patients, the hydronephrosis was unobstructed; therefore, the patients were discharged from follow-up. These findings further underline the importance of proper counseling and the evaluation of patients with a known history of antenatal hydronephrosis concerning the onset of clinical symptoms. Contrary to the improvement in renal function after pediatric pyeloplasty, adult surgery allows relief of clinical symptoms; however, it does not improve renal function.[12–14] Our data further support this observation. We have not observed any significant improvement in the renal function after surgical correction in both groups: those with and without neonatal diagnosis. A similar trend was observed in the patients with VUR. Although the surgical outcomes of patients with reflux were similar concerning reflux resolution in the pediatric population, these patients demonstrated a decrease in the renal function since their last follow-up in pediatric urology/nephrology, as already demonstrated in a previous publication. Moreover, these patients tend to develop either febrile or afebrile UTI significantly more frequently than the pediatric population despite reflux resolution. Since most pediatric specialists do not follow these patients up to adulthood, these facts should be presented to the parents of children with VUR during counseling and treatment decision-making.

As antenatal US has become an integral part of the follow-up of pregnant women, it has changed the management of some so-called dogmas in pediatric urology. Ureterocele is a well-known pathologic entity in the pediatric urology population; however, it remains a diagnostic and treatment challenge in the adult population.[15,16] Its prevalence is estimated to be between 1/500 and 1/4000 patients, with a wide variety of clinical presentations.

There is a consensus among the majority of pediatric urologists that ureteroceles require surgical intervention, such as endoscopic puncture or incision, ureteral reimplantation, and even either open or laparoscopic/robotic heminephroureterectomy.

Over the last few years, some investigators have raised the possibility of conservative management for patients with asymptomatic intravesical ureteroceles.[5,6] The main weakness of all studies was the lack of long-term follow-up. In 40% of our patients, the ureterocele was diagnosed after the clinical presentation of renal colic. It has been suggested that urinary stasis in the cobra head, such as ureteroceles, might lead to stone formation. The remaining patients presented with febrile UTI, and of those, 50% required emergency drainage because of lack of reaction to the antibiotic treatment and renal obstruction. All patients had intravesical ureterocele without any previous history of nephrolithiasis or any kind of bladder intervention, ruling out the possibility that we had dealt with acquired ureterocele.

The approach to duplex kidney anomalies has evolved over the last few years in pediatric urology practice from partial nephrectomy to uretero-ureteral anastomosis, frequently leaving poorly or even non-functioning moieties in place and simply fixing the underlying pathology.[3,10,17–20] Robot-assisted laparoscopic surgery is increasingly being adopted for the treatment of duplex anomalies, and recent studies have reported excellent results with RALUU. Our experience coincides with the evolution of worldwide approaches to these anomalies. Seven patients underwent a partial nephrectomy of the non-functioning upper moiety. Over the last 4 years, we have approached all pediatric patients with duplex anomalies associated with the ectopic ureter of the upper moiety without VUR of the lower pole or those with VUR of the lower pole without upper ureter pathology exclusively with RALUU, regardless of the function of the affected moiety. We also applied this approach to adult patients. Forty percent of patients with ectopic ureter of the upper moiety and 1 patient with VUR of the lower moiety have had less than 20% of renal function of the associated moiety. All patients were asymptomatic during the follow-up, further justifying this approach in the adult population. It is important

to bear in mind that a significant difference in the diameter of the recipient and donor ureters that we frequently see in these cases is not a contraindication for RALUU, since end-to-end anastomosis is very durable in these cases, as has been proven previously.[18]

A laparoscopic robot-assisted approach can also be used in patients requiring ureteral reimplantation. We recently published results with our ureteral reimplantation technique, which we found to be extremely convenient in adult patients with a significantly dilated ureter.[7] Extravesical ureteral dissection with the creation of a transverse submucosal tunnel allows for anti-refluxing anastomosis and avoids kinking of the ureter.

This study had a few limitations. Most of the data were collected retrospectively, and the paper suffers from all the flaws in this kind of study. We have not presented a meaningful statistical inference; however, this is a descriptor and sharing of our experience; therefore, no such analysis is required. Some patients in this study reported normal prenatal US findings; however, US was performed at the beginning of the learning curve with a prenatal diagnosis, and some findings may have been missing during the examination. The data were collected from 2 departments, although the treatment and follow-up were similar in both services. Some differences existed that may have influenced the follow-up outcome. We have adopted the robotic approach in our practice over the last 6 years, and obviously, our follow-up after these patients is shorter compared with either the open or laparoscopic technique. However, since we were pleased with the former techniques and we strictly followed the same principles as the open surgical techniques during robotic surgery, we do not expect any deviations from the expected follow-up in these patients.

5. Conclusions

Patients with CAKUT present with clinical symptoms later in life. The parents of patients diagnosed during fetal screening and treated conservatively should be aware of this possibility, and children should be appropriately counseled when they enter adolescence. Similar surgical skills and operative techniques used in the pediatric population may be applied to adults.

Acknowledgments

None.

Statement of ethics

The protocol for this research project was approved by a suitably constituted Ethics Committee of the institution (Shamir Medical Center) and conformed to the provisions of the Declaration of Helsinki (approval no. 0317-19-AS). The authors are accountable for all aspects of the work to ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All people gave their informed consent prior to their inclusion in the study.

Conflict of interest statement

All authors have submitted the ICMJE uniform disclosure form. The authors declare no conflicts of interest.

Funding source

No funding was received for this study. All authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interests in the subject matter or materials discussed in this manuscript

Author contributions

All authors have significantly contributed to the submitted manuscript. Specific contributions are as follows:
LC, AN, BC, SK: Conception and design, manuscript writing;
BBN, JJ: Administrative support, manuscript writing;
DK, OZS: Provision of study materials or patients, manuscript writing;
AZ, AM: Collection and assembly of data, manuscript writing;
GV, IK, AEN: Data analysis and interpretation, manuscript writing.

Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

[1] Halachmi S, Pillar G. Congenital urological anomalies diagnosed in adulthood—Management considerations. *J Pediatr Urol* 2008;4(1):2–7.
[2] Chertin B, Pollack A, Koulikov D, et al. Conservative treatment of ureteropelvic junction obstruction in children with antenatal diagnosis of hydronephrosis: Lessons learned after 16 years of follow-up. *Eur Urol* 2006;49(4):734–738.
[3] Chertin B, Rabinowitz R, Pollack A, et al. Does prenatal diagnosis influence the morbidity associated with left in situ nonfunctioning or poorly functioning renal moiety after endoscopic puncture of ureterocele? *J Urol* 2005;173(4):1349–1352.
[4] Natsheh A, Shenfeld OZ, Farkas A, Chertin B. Endoscopic treatment of vesicoureteral reflux in an adult population: Can we teach our adult urology colleagues? *J Pediatr Urol* 2010;6:600–604.
[5] Shankar KR, Vishwanath N, Rickwood AM. Outcome of patients with prenatally detected duplex system ureterocele; Natural history of those managed expectantly. *J Urol* 2001;165(4):1226–1228.
[6] Andrioli V, Guerra L, Keays M, et al. Active surveillance for antenatally detected ureteroceles: Predictors of success. *J Pediatr Urol* 2018;14(3):243.e1–243.e6.
[7] Neheman A, Kord E, Koucherov S, et al. A novel surgical technique for obstructed megaureter: Robot-assisted laparoscopic dismembered extravesical cross-trigonal ureteral reimplantation–short-term assessment. *J Endourol* 2020;34(3):249–254.
[8] Dothan D, Kocherov S, Jaber J, Chertin B. Endoscopic correction of reflux utilizing polyacrylate polyalcohol bulking copolymer (Vantris) as a tissue augmenting substance: Lessons learned over the 10 years of experience. *J Laparoendosc Adv Surg Tech A* 2021;31(9):1073–1078.
[9] Chertin B, de Caluwé D, Puri P. Is primary endoscopic puncture of ureterocele a long-term effective procedure? *J Pediatr Surg* 2003;38(1):116–119; discussion 116–119.
[10] Herz D, Smith J, McLeod D, Schober M, Preece J, Merguerian P. Robot-assisted laparoscopic management of duplex renal anomaly: Comparison of surgical outcomes to traditional pure laparoscopic and open surgery. *J Pediatr Urol* 2016;12(1):44.e1–44.e7.
[11] Dindo D, Demartines N, Clavien PA. Classification of surgical complications: A new proposal with evaluation in a cohort of 6336 patients and results of a survey. *Ann Surg* 2004;240(2):205–213.
[12] Elbaset MA, Zahran MH, Sharaf MA, et al. Long term functional success after pyeloplasty for pelvi-ureteral junction obstruction in unilateral poorly functioning kidney in exclusively adults population. *Urology* 2019;131:234–239.
[13] Nascimento B, Andrade HS, Miranda EP, et al. Laparoscopic pyeloplasty as an alternative to nephrectomy in adults with poorly functioning kidneys due to ureteropelvic junction obstruction. *Int Urol Nephrol* 2021;53(2):269–273.
[14] Freitas PFS, Barbosa JABA, Andrade HS, et al. Pyeloplasty in adults with ureteropelvic junction obstruction in poorly functioning kidneys: A systematic review. *Urology* 2021;156:e66–e73.

[15] Seibold J, Alloussi SH, Schilling D, et al. Minimally-invasive treatment of complicated ureteroceles in adults avoiding vesico-ureteric reflux. *Cent Eur J Urol* 2010;63(2):74–76.

[16] Shah HN, Sodha H, Khandkar AA, Kharodawala S, Hegde SS, Bansal M. Endoscopic management of adult orthotopic ureterocele and associated calculi with holmium laser: Experience with 16 patients over 4 years and review of literature. *J Endourol* 2008;22(3): 489–496.

[17] Sahadev R, Rodriguez MV, Kawal T, et al. Upper or lower tract approach for duplex anomalies? A bi-institutional comparative analysis of robot-assisted approaches. *J Robot Surg* 2022;16(6):1321–1328.

[18] Kawal T, Srinivasan AK, Talwar R, et al. Ipsilateral ureteroureterostomy: Does function of the obstructed moiety matter? *J Pediatr Urol* 2019;15 (1):50.e1–50.e6.

[19] Dothan D, Raisin G, Jaber J, Kocherov S, Chertin B. Learning curve of robotic-assisted laparoscopic pyeloplasty (RALP) in children: How to reach a level of excellence? *J Robot Surg* 2021;15(1):93–97.

[20] Cohen S, Raisin G, Dothan D, Jaber J, Kocherov S, Chertin B. Robotic-assisted laparoscopic pyeloplasty (RALP), for ureteropelvic junction obstruction (UPJO), is an alternative to open pyeloplasty in the pediatric population. *J Robot Surg* 2022;16(5):1117–1122.

How to cite this article: Chertin L, Neeman BB, Jaber J, Verhovsky G, Zisman A, Mamber A, Kafka I, Natsheh AE, Koulikov D, Shenfeld OZ, Chertin B, Koucherov S, Neheman A. Our experience with management of congenital urological pathologies in adulthood: What pediatric urologists should know and adult urologists adopt in pediatric practice experience. *Curr Urol* 2024;18(1):7–11. doi: 10.1097/CU9.0000000000000228