A case of an ectopic ureter with vaginal insertion diagnosed in adulthood

Mehmet Demir¹, Halil Çiftçi¹, Nihat Kılıçarslan², Kemal Gümüş¹, Mehmet Oğur¹, Mehmet Gülüm¹, Ercan Yeni¹

ABSTRACT

Ectopic ureter which is one of the causes of urinary incontinence in adults is a rarely seen entity. In this case, diagnosis and treatment of urinary incontinence in a female patient thought to originate from an ectopic ureter will be evaluated. On magnetic resonance (MR) urograms double collecting system in both kidneys and also grade 3 hydronephrosis in the collecting system which drained the upper pole of the right kidney were seen. The ureter draining the upper pole of the right kidney was seen to open into a 24 mm-wide cystic pouch inside the right lateral wall of the vaginal cuff. During vaginal examination an orifice of 3 mm was observed on the right wall of the vagina. Right ureteroneocystostomy was performed. Ureters with ectopic orifices are very rarely seen causes of urinary incontinence. To establish the diagnosis, this pathology must be recognized, should be kept in mind, and appropriate diagnostic methods must be used.

Keywords: Ectopic ureter; female; incontinence; vaginal.

Introduction

Ectopic ureter opens into a region apart from its usual opening place on the trigon. Male/female ratio is 1/2.^[1] In women 80% of the cases with ectopic ureter are associated with ureteral duplication. In men it is usually accompanied with a single renal collecting system.^[2] Clinically, it is seen 2-12 times more frequently in women, while in autopsy series female/male ratio was found to be 2.9/1.^[3] A small percentage (7.5-17%) of the cases with ectopic ureter is bilateral. In women, urethra opens into vestibulum, and rarely it can open into vagina, cervix, uterus, Gartner's duct, urethral diverticle, and rectum. Normal urination together with continuous incontinence are pathognomic features for infraspincteric ureteral openings.^[4] In ectopic ureteral openings, diagnosis is delayed because of inadequate evaluation. Indeed, most of the diagnostic methods do not provide sufficient information about ectopic ureteral openings. Therefore, in patients with incontinence suggestively associated with ectopic ureter, magnetic resonance (MR) urograms should be obtained so as to gather sufficient information about ureteral orifice. Herein, we aim to present a 32-year-old patient suffering from incontinence beginning from his childhood whose diagnosis could not

be made by means of many diagnostic tools, and assessments including computed-tomography (CT), and ultrasound (US). However MR urography could establish the diagnosis.^[5]

Case presentation

A 32-year-old patient who had four normal vaginal deliveries previously was referred to our clinic with complaints of intermittent right flank pain, normal urination, and continuous urine leakage without any drive to urinate. Complaints of urinary leakage were present for years. With these complaints in her childhood she sought for medical help many times, and she had been told that she had a cyst in his right kidney. Besides, occasionally, anticholinergic treatment was recommended for his urinary incontinence. In his adulthood, since his complaints did not regress, he consulted to a physician for many times for diagnosis, and treatment, and surgical treatment was recommended for his urinary incontinence which she declined. Urinalysis of the patient with normal biochemical, hematological, and urine culture results revealed leukocytosis. Abdominal CT obtained in an external center demonstrated a dense (6 HU), thick-walled contrast-enhanced cystic lesion measuring 66x40 mm, and extending from upper pole to the midportion of the kidney which also

¹Department of Urology, Harran University Faculty of Medicine, Şanlıurfa, Turkey

²Department of Radiology, Harran University Faculty of Medicine, Şanlıurfa, Turkey

Submitted:
05.08.2013

Accepted:
30.12.2013

Available Online Date:
15.10.2014

Correspondence:
Halil Çiftçi,
Department of Urology, Harran
University Faculty of Medicine,
Şanlıurfa, Turkey
Phone: +90 414 351 25 62
E-mail: halilciftci63@hotmail.com

©Copyright 2015 by Turkish
Association of Urology

Available online at
www.turkishjournalofurology.com

Figure 1. Ureter draining the upper pole extends up to the right lateral aspect of the vaginal cuff, and opens into a 24-mm-width cystic pouch in the wall of the vaginal cuff. (arrow) Cystic Pouch; Ureter draining the upper pole extends up to the right lateral aspect of the vaginal cuff, and opens into a 24-mm- width cystic pouch in the wall of the vaginal cuff

compressed hilar region. Since these diagnostic methods did not provide explanatory information, MR urograms of the patient were obtained in our clinic. MR urography demonstrated double collecting system in both kidneys, and grade 3 hydroureteronephrosis of the collecting system draining upper pole of the right kidney. Ureter draining the upper pole of the kidney which opened into a cystic pouch 24 mm in width, and localized within the lateral wall of the vaginal cuff wall was seen (Figure 1). The patient's approval was obtained for surgical intervention, and radiological techniques, and then under general anesthesia while the patient in the lithotomy position, after sterile preparation of the surgical field a 17 Fr cystoscope was inserted through external urethral meatus. Urethra, bladder, and bilateral orifices were within physiologic limits. Vaginal examination disclosed a 3 mm-width opening on the right lateral wall of the vagina which was considered as an orifice opening into vagina. A 3- Fr catheter was inserted through this opening, and tried to advance it further with no avail. With the patient laid down in the supine position, anatomical layers were passed through a right Gibson incision. Retroperitoneal space was entered, and two ureters were observed. One of them was dilated, and terminated into a cystic formation on the right lateral wall of the vagina (ure-

terocele). Other ureter was normal. Dilated ureter was separated with blunt, and sharp dissection. Ureter was separated from lateral wall of the vagina together with the cystic structure. Then lateral wall of the vagina was primarily repaired. A double-J catheter was inserted into the dilated ureter, and neocystostomy was performed using Lich- Gregoir method. During follow-up visits vaginal leakage was not observed.

Discussion

Though ectopic ureter is a congenital anomaly, diagnosis can not be generally made up to advanced age because of inadequate anamnesis, and assessments.^[6,7] As the patient ages, other causes of urinary incontinence are predominantly contemplated, and eventually the diagnosis of ectopic ureter is overlooked.^[8] As is the case in our patient, in the elderly, diagnosis of urge and/or stress type urinary incontinence has been considered, and treatment has been planned accordingly. Many diagnostic tools have been used for the detection of urinary system anomalies. Though many major diagnostic tools are available including ultrasound, voiding cystourethrography, intravenous urography, computed-tomography, and cystoscopy, we think that these imaging modalities do not provide adequate information about ectopic ureteral openings. As is in our case, in these cases, MR can demonstrate dilated collecting system, ectopic ureter, ureterocele, and extravesical insertion point of the ectopic ureter, and delineate malformation completely.^[9,10] Diagnosis of suprasphincteric ureteral opening is made during investigations for the etiology of the recurrent urinary infections, however in cases with infrasphincteric ureteral opening, normal urination pattern together with continuous urinary incontinence is the most frequently seen symptom.^[4] Occasionally, although ureter opens into infrasphincteric region, incontinence does not manifest itself if it drains an excessively atrophic renal segment or in the presence of compression of lower third of the ureteral segment between muscles of the external sphincter till advanced age. However they become symptomatic at a late stage in conditions like childbirth which weakens external sphincter.^[5] In our patient incontinence was present till childhood, and it could not be diagnosed because of inadequate evaluation. However in men ectopic ureter generally opens into the posterior urethra, and these men remain continent. However, ectopic ureters opening into the genital tract can manifest symptoms as epididymitis, vesiculitis, prostatitis, bloody, and painful ejaculation. Ectopic ureteral opening is more often associated with single collecting system in men, and in women it is more frequently associated with double collecting system.^[2] Congenital heart disease, and renal dysplasia can accompany ectopic ureter. Additional anomaly was not detected in our patient. According to Weigert-Meyer law, ureter draining the lower pole should open more cranially, and become refluxive. However in our patient, ureter draining the lower pole was in its normal position, and non-refluxive.

Current approach in the management of ectopic ureter is to remove anomalous kidney together with ureter draining into vagina using nephron-sparing surgery.^[11,12] In our patient since from clinical perspective, renal tissue draining the upper pole was functional, ureteroneocystostomy was performed instead of partial nephrectomy, and ureterectomy.

In conclusion, in the investigation for incontinence, proper diagnostic methods should be used, and in differential diagnosis, ectopic ureter openings should be kept in mind irrespective of the patient's age.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - H.Ç.; Design - N.K.; Supervision - E.Y.; Funding - M.O.; Materials - M.D.; Data Collection and/or Processing - M.D.; Analysis and/or Interpretation - H.Ç., M.G.; Literature Review - E.Y.; Writer - M.D.; Critical Review - E.Y.; Other - K.G.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

References

1. Fernbach SK, Feinstein KA, Spencer K, Lindstrom CA. Ureteral duplication and its complications. *Radiographics* 1997;17:109-27. [\[CrossRef\]](#)
2. Avni EF, Matos C, Rypens F, Schulman CC. Ectopic vaginal insertion of an upper pole ureter: demonstration by special sequences of magnetic resonance imaging. *J Urol* 1997;158:1931-2. [\[CrossRef\]](#)
3. Fannin O, Cammack JT, Crotty KL, Neal DE. Bilateral single ectopic ureters: diagnosis using transrectal ultrasound. *J Urol* 1993;150:1229-31.
4. Kibar Y, Avcı A, Akay O, Dayanc M. Dribbling of urine due to ectopic vaginal insertion of an upper pole ureter diagnosed by magnetic resonance urography. *Int Urol Nephrol* 2005;37:695-7. [\[CrossRef\]](#)
5. Jain KA. Ectopic vaginal insertion of an obstructed duplicated ureter in an adult female: demonstration by magnetic resonance imaging. *Clin Imaging* 2007;31:54-6. [\[CrossRef\]](#)
6. Ogawa A, Kakizawa Y, Akaza H. Ectopic ureter passing through the external urethral sphincter: Report of a case. *J Urol* 1976;116:109-10.
7. Toprak U, Erdoğan A, Paşaoğlu E, Karademir MA. The Importance of Pyelography Phase Computed Tomography in The Diagnosis of Ectopic Vaginal Ureter. *Ankara Üniversitesi Tıp Fakültesi Mecmuası* 2007;60:35-7.
8. Meroğlu O, Zorlu F, Peker A, Duran H Ectopic ureter: Case presentation. *Turkish Journal of Urology* 1999;25:109-11.
9. Kibar Y, Avcı A, Akay O, Dayanc M. Dribbling of urine due to ectopic vaginal insertion of an upper pole ureter diagnosed by magnetic resonance urography. *Int Urol Nephrol* 2005;37:695-7. [\[CrossRef\]](#)
10. Krishnan A, Baskin LS. Identification of ectopic ureter in incontinent girl using magnetic resonance imaging. *Urology* 2005;65:1002. [\[CrossRef\]](#)
11. Oge O, Ozeren B, Sonmez F. Nephron- sparing surgery in a duplex system associated with a vaginal ectopic ureter. *Pediatr Nephrol* 2001;16:1135-6. [\[CrossRef\]](#)
12. Zoller G, Zappel H, Ringert RH. Ectopic ureter a not considered cause of persisting enuresis in girls. *Klin Padiatr* 2001;213:314-6.