CASE REPORT

Single-System Ectopic Ureter: A Late Diagnosis and Successful Management

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Introduction

An ectopic ureter is characterized by an ectopic ureteric orifice outside the posterolateral extremity of bladder trigone and present predominantly in female children with duplicated kidney. If ectopic ureter drain a single kidney, it is called single-system ectopic ureter (SSEU) [1].

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Ectopic ureter draining single systems are rare occurring only in 20 % cases. Although single-system ectopic ureter is common in males, we have encountered this in a 27-year-old female which was diagnosed late and was managed successfully with uretero-neocystostomy as kidney function was normal.

Case Report

Miss MR, 27-year-old unmarried and illiterate reported in gynecology outpatient department with history of burning in micturition off and on since 4–5 years. After asking for any other urinary symptoms, she gave history that there was continuous dribbling of urine since birth, but was also able to void normally. There was history of operation at the age of 3 years for incontinence of urine, but details were not available. Her menstrual history revealed that she had eumenorrheic cycles. She had fibroadenoma left breast which was operated at the age of 13 years. Her mother had carcinoma breast and died 5 years back, and her sister died because of eclampsia 2 years back.

Her general and systemic examination revealed no abnormality. On per abdominal examination, there was no renal angle tenderness. Local examination revealed normal external urinary meatus and introitus. Hymen was not intact, and urinary dribbling was seen from meatus intermittently. Her hemogram was normal. Urine examination showed presence of 25–30 pus cells/hpf, and culture showed growth of *E. Coli* sensitive to Norflox (Norfloxacin). Her blood urea and creatinine were normal. Ultrasound of abdomen and pelvis showed right

hydronephrosis with right hydroureter likely due to ectopic ureteric orifice. Ultrasound of uterus and ovaries was normal. CT abdomen showed right ureteric orifice opening into vagina (Fig. 1). Cystoscopy was done which showed right ectopic ureteric orifice opening into urethra just above external urethral orifice.

She was put on Tab Norflox (Norfloxacin) 400 mg BD, and after control of infection neo-ureterocystostomy (ureteric reimplantation) was done. Intraoperatively right ureter was dilated. It was dissected as low down as possible, and reimplantation was done on posterolateral wall of bladder on right side in area of trigone. Postoperative period was uneventful, and catheter was kept for 10 days. She was continent and discharged on day 12. She came for follow-up thrice after 1, 3 and 6 months and was continent.

Discussion

The term “ectopic ureter has universally been used to describe a ureter that terminates at the bladder neck distally in one of the mesonephric duct structures or that is incorporated into any of the nearby mullerian structures such as vagina, uterus and cervix in females.” Embryologically ureteric bud arises from mesonephrons more cranially. There are two distinct forms of ectopic ureter (EU): one draining a duplex kidney and other connected to single kidney, the latter being termed single-system ectopic ureter (SSEU) [1]. As per the literature, single-system ectopic ureter is common in male. A study by Gangopadhyaya et al. [2] reported that single-system ectopic ureter was present in females. In our case also, single-system ectopic ureter was present (Fig. 2). In contrary to Western literature, proportion of incidence of duplex system ectopic ureter (EU) and SSEU is reversed in Asian literature [2, 3]. It is also postulated that failure of vascular supply during embryonic development prevents kidney from developing normally and causes formation of small primary organ that contains embryonal tissues. Some researches believe that it is the obstruction of ureter during early phase of the embryo that stops development of the kidney [2]. In our case, there was only hydroureter, but kidney was normal in size and function. Dysplastic kidney and those with function of less than 10 % are normally removed [2]. In our case as renal function was normal, ureteric reimplantation, i.e., neo-ureterocystostomy, was done. Kumar et al. [4] had reported a case of bilateral single-system ectopic ureter which was managed by bilateral ureteric reimplantation. Prakash et al. [5] had reported a case of single-system ectopic ureter draining into Gartner’s cyst which was managed by laparoscopic ureteral reimplantation.

The aim of publishing this case is that although cases of ectopic ureter are reported in the literature, it is rare to

Fig. 1 CT scan showing right hydronephrosis and hydroureter and ectopic ureter opening into vagina

Fig. 2 Schematic diagram showing single-system ectopic ureter and ectopic ureter opening into urethra above external urethral meatus

diagnose at the age of 27 years, and it was diagnosed accidentally as she came for burning in micturition, and it was treated successfully. If it would have been diagnosed and treated in childhood, she could have been educated. She could not educate because of urinary incontinence and smell.

Urinary incontinence in children after toilet training should be evaluated properly for ectopic ureter, so that management can be done in childhood and will not interfere in psychosocial development. Incontinence of urine which persists after toilet training requires proper evaluation so that appropriate treatment can be instituted.

Compliance with Ethical Standards

Conflict of interest Somalwar Savita, Chaudhary Swanand, Joshi Sulabha, Bhalerao Anuja, Jain Sheela, Nagpure Medha declare that they have no conflict of interest and they do not have any financial relationship with any company.

Ethical Standard Institutional Ethical Committee approval as well as informed consent of the subject was taken for publishing this case report.

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