CASE REPORT

Chyluria: is retrograde pyelogram mandatory prior to endoscopic sclerotherapy?

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SUMMARY

Chyluria is the passage of milky urine due to a lymphourinary fistula secondary to lymphatic stasis caused by obstruction of the lymphatic flow. This can be caused by parasitic or non-parasitic infections. Though chyluria is a commonly encountered entity in clinical practice particularly in developing countries like India, it is rarely discussed in English literature. We report a case of chyluria with right bifid ureter in a 50-year-old male patient who was treated with intrarenal pelvic instillation of 1% silver nitrate (AgNO₃) and emphasis on the diagnostic implication of retrograde pyelography prior to endoscopic sclerotherapy in managing chyluria particularly in renal anomalies.

BACKGROUND

Chyluria is a common urological entity in South East Asian countries like China, India, Japan, Taiwan and also parts of Africa, Australia and South America.¹ This condition is characterised by the passage of milky-appearing material in the urine, which is composed of albumin, emulsified fat and fibrin in varying proportions.¹ *Wuchereria bancrofti* is the most common parasitic infestation causing chyluria. We report a unique case of chyluria from right kidney with bifid right ureter in a 50-year-old man treated by endoscopic sclerotherapy. Cystoscopy showed chylous efflux from right ureteric orifice and retrograde pyelography (RGP) revealed a bifid right ureter with a bifid right renal pelvis, both ureters joining distally at the sacroiliac joint. The diagnostic and therapeutic importance of RGP in the management of chyluria particularly in a renal anomaly is described.

CASE PRESENTATION

A 50-year-old average-built man presented to us with symptoms of the passage of milky white urine along with clots and intermittent painless mild haematuria for 5 years. His symptoms aggravated after taking fatty meals and on physical exertion. There was no history of urinary tract infections, trauma or instrumentation. Except for the presence of mild pedal oedema and pallor (+) the physical examination was unremarkable.

INVESTIGATIONS

Urine examination revealed albuminuria (3+), 2–3 pus cells/HPF, 5–6 RBCs per HPF and fat globules. The diagnosis of chyluria was confirmed by the presence of chylomicrons and triglyceride in the analysis of postprandial urine. The cholesterol, phospholipid and triglyceride levels of urine were

285, 195 and 230 mg/dL, respectively. A urine culture was proven to be sterile. The renal function tests and serum electrolytes were within the normal limits. His haemoglobin was 9 g/dL and there was no evidence of eosinophilia on blood count. The peripheral blood smear did not reveal microfilaria. The kidney and bladder ultrasound showed amorphous clots in the urinary bladder and normal upper tracts. Initially he was being managed by medical therapy and dietary modifications, but his symptoms persisted. Then he was planned for renal pelvic instillation sclerotherapy.

TREATMENT

Postprandial cystoscopy (after taking 100 g butter with bread) was performed under local anaesthesia that showed spurt of chylous efflux from the right ureteric orifice. RGP (as per the institutional protocol) revealed a right bifid ureter with a bifid pelvis and without any obvious pyelolymphatic connections (figure 1A,B). Then we passed one 5 Fr ureteric catheter up to the renal pelvis of upper moiety over hydrophilic guide wire followed by the same in lower moiety to determine the precise location of chylous efflux. A significant amount of chylous urine was seen coming from lower moiety (figure 2). Then the ureteric catheter of the upper moiety was subsequently removed. Keeping the ureteric catheter (of lower moiety) in situ, a total of nine doses of 1% silver nitrate (AgNO₃) at eight hourly intervals were instilled into the pelvicaliceal system under strict asepsis and chemoprophylaxis.

OUTCOME AND FOLLOW-UP

The patient had significant improvement in symptoms after the complete course of instillation and there was no evidence of relapse during the 2 years of follow-up.

DISCUSSION

Chyluria is a benign clinical condition prevalent in South East Asia like China, India, Japan, Taiwan and parts of Africa, Australia and South America.¹ The aetiology of chyluria can be classified as parasitic and non-parasitic. Parasitic infestation by *W. bancrofti* infestation is responsible for >95% of parasitic chyluria in India. It occurs due to a blockade of the major retroperitoneal lymphatics and thoracic duct by the mature parasite. This leads to retrograde flow of lymph from the gut and pelvis to the lumen of the genitourinary tract, lymphangiectasis and subsequent development of urinary fistulae.² The most location of lymphaticourinary fistula is at the caliceal fornix, but can also occur at

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Figure 1 (A and B) Retrograde pyelogram showing duplex system with bifid ureters.

Figure 2 Chylous urine from ureteric catheter placed in lower moiety.

the level of the ureter or urinary bladder.^{2 3} It is a disease of spontaneous remissions and exacerbation.

Most of the patients are initially managed conservatively with dietary modifications and antifilarial drugs. The dietary modification comprises of high-protein and low-fat diet with medium-chain triglycerides.⁴ Renal pelvic instillation sclerotherapy (RPIS) using various sclerosants in different concentrations is often used to cause obliteration of pyelolymphatic communications in patients refractory to conservative treatment. Various sclerosing agents such as 1% AgNO₃, 0.2% povidone iodine was described that cause chemical lymphangitis with subsequent fibrosis of lymphatic channels.^{5 6} Instillation of sclerosing solutions like AgNO₃ into the renal pelvis has 80% success rate.⁷ Open surgical or laparoscopic renal pedicle lymphatic disconnection is the treatment of choice for those patients who fail to respond RPIS.⁸

Intravenous urography, RGP and lymphangiography have been traditionally used to demonstrate abnormal lymphaticourinary fistulas.⁹ Dalela *et al*¹⁰ argued that omission of RGP and lymphangiography had no effect on either treatment or outcome and routine radio imaging may not be necessary in filarial chyluria. RGP was performed to delineate abnormal pyelolymphatic channels and to assess the pelvic volume. In the present case, if preliminary radiological imaging was not performed then there could be a probability of missing the exact site and could be the reason for the persistence of symptoms. In addition, RGP has therapeutic importance by causing sclerosis of some pyelolymphatic connections. Therefore, RGP prior to instillation sclerotherapy should be included as a mandatory investigation in the treatment algorithm of chyluria particularly in cases of renal anomaly.

In conclusion, we report a unique case of chyluria with right bifid ureter and pelvis with chylous efflux from lower moiety that was successfully treated by renal pelvic instillation of 1% AgNO₃. Routine demonstration of renal anatomy along with precise location of site of lymphatic urinary efflux is necessary to prevent recurrence/persistence of symptoms of chyluria. Therefore, RGP should be advocated as a necessary investigation prior to endoscopic sclerotherapy in chyluria.

Learning points

- ▶ Chyluria of parasitic origin is prevalent in south east Asia.
- ▶ Chyluria in renal anomalies like bifid ureter is uncommon clinical entity.
- ▶ Retrograde pyelography should be performed prior to endoscopic sclerotherapy for precise localisation.

Competing interests None.

Patient consent Obtained.

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