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Case Report

**Chyluria: A Rare Complication Following Shock Wave
Lithotripsy
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Abstract

Chyluria defined as milky appearance of urine is a rare case observed in urology. A 38-years old male patient applied with the complaint of milky-coloured and cloud urine in the mornings. Cystoscopy and retrograde urography were performed with diagnosis of chyluria and lymphocalyceal fistula was seen. The patient was treated with a single dose povidone iodine instillation. This complication after SWL was detected for the first time in our literature research and this case was found interesting and presented.

Keywords: chyluria, SWL, povidone iodine

Introduction

Chyluria is a case that occurs as a result of intensive mixing of the lymphatic fluid, which is rich in albumin, emulsified oil and fibrin into urine and causes milky-coloured urine (1). It is important to diagnosis and treatment of chyluria because it caused nutritional deficiency, hypolipidemia, hypoalbuminemia, anemia and immunity problems (2). Lymphatic obstruction by parasite is the most common etiology of chyluria in countries where filarial diseases are endemic; while tuberculosis, abscess, infection, renal tumor surgery and renal trauma are reasons of chyluria in non endemic reagons (3). A diet that is rich in protein and poor in fat is generally sufficient for treatment of many cases (4). These patients who did not improve with treatment could be treated

with endoscopic silver nitrate, contrast agent and povidone iodine insillation or lymphorenal disconnection surgery (5).

Case Study

38 year old male patient admitted to our clinic with the complaint of milky-colored urination. In history, this complaint was continuing intermittently more than five months, especially in the morning. The patient's complaints started about two weeks later after the treatment of three sessions Shock Wave Lithotripsy (SWL) for 11 mm kidney stone in the middle calix. Wolf PiezoLith 3000 was used for SWL, totally 6000 shock waves, 2000 shock waves per once a week treatment. The average energy level was 16.1 Mpa. There was no abnormality on physical examination, but patient's urine was milky-colored.

In urinalysis there was 1222 erythrocytes / HPF, 27 leukocytes / HPF, protein 100 mg / dL, urine density 1014, the urine pH value was 6,1. There was no growth of the patient's urine culture, fungal culture and tuberculosis culture. All the biochemical parameters, complete blood count and erythrocyte sedimentation rate was normal outside of albumin 2.5 mg / dL, triglycerides 199 mg / dL, total cholesterol 217 mg / dL. There was no renal pathology in urinary tract ultrasonography that performed.

Chyluric jet urine stream from left orifice and normal coloured jet urine stream from right orifice was seen urethrocytoscopy examination with general anesthesia. It was observed that contrast agent given by left urethral cathater to left renal pelvis filled renal pelvis together with hiler lymphatics (Figure

1). At the same time, 20cc 0.2% povidone-iodine instillation was performed with ureteral catheter. During the follow-up, the color of the patient's urine has completely resolved about 7 months.

Please See Figure1 in the PDF Version

Discussion

Lymphatic ducts draining renal parenchyma and capsule which are rich in lymphatic ducts are drained via renal hilum into the lateral aortic and interaortacaval lymph nodes. Chyluria is a condition explained by Ackerman's obstructive theory firstly in 1893 are generally benign but can cause serious morbidity. In this theory, it is proposed that lymphatic fluid is drained to urine

by a fistula between renal lymphatics and pelvicaliceal system (1,2).

Chyluria is occurred in Southeast Asia, South America and Asia because of parasitic infections like filariasis, and cysticercosis echinococcus. On the other hand in Europe, North Asia and North America granulomatos infection, neoplasia, lymphatic malformations and kidney surgery and trauma are reasons for chyluria. All of these diseases can cause chyluria by lymph calyceal fistula because of obstruction in lymphatic ducts (2).

In chyluria cases which are treatment resistant or not treated for a long time, renal dysfunction, nephritic syndrome, immune deficiency, malnutrition, weighty lose and cachexia can occur because of hypoproteinemia occurred by lipidüri and proteinuria.(4). For example, in our case hypoalbuminemia was

developed because of long time existence of chyluria and proteinuria while renal functions were normal.

In ongoing chyluria diet changes, injection of sclerosing substances endoscopically and disconnection of renal pedicul and lymphatic ducts can be applied in order (7). Diet rich in medium-chain fatty acids and protein is suggested to patients. In situations in which this treatment is inadequate, around 60-80% reported cure rate of injection of sclerosing substance can be applied. Recently 0.2% of povidone iodine cheaper and having less allergic side effects is used endoscopically because 1 % of silver nitrate has serious side effects like anaphylactic reactions, chemical cystitis, renal colic, urethral stricture, nausea and vomiting after instillation (7). Laparoscopic or open renal pedicul lymphatic disconnection operation is an alternative to these

treatment options in cases of resistant chyluria. In our case we instilled 20 cc 0.2 % of povidone iodine via ureter catheter after taking retrograde urography. Improvement in post-treatment follow-up was identified.

Chyluria in non endemic regions is generally seen after renal surgery and trauma especially in partial nephrectomy and radiofrequency ablation treatment in renal cell carcinoma (6).

Today, SWL is commonly used successfully in treatment of urolithiasis. During SWL, shock waves are generated outside the body and focused on the stone in the renal collecting system. It is proposed that shock waves can cause fistula by trauma and obstruction on lymphatic ducts. Serious complications like renal rupture(8), colon perforation, acute pancreatitis(9) and spleen

rupture(10) can develop after SWL while benign complications like hematuria renal colic and skin ecchymosis can be seen. In our literature review we didn't find chyluria as a complication of SWL. We think that case could be a rare complication of SWL because it was observed after 2 weeks of SWL treatment and there was no history of parasitic infection or renal surgery.

As a result, patients should be informed about chyluria as a rare complication of SWL and also other complications of SWL which is a common treatment options in countries like our country where urolithiasis is high.

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