ACUTE NECROTIZING URETERITIS WITH OBSTRUCTIVE UROPATHY FOLLOWING INSTILLATION OF SILVER NITRATE IN CHYLURIA: A CASE REPORT

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Chyluria occurs as a result of communication between the lymphatics and the renal pelvis. It is believed that instillation of silver nitrate into the renal pelvis is a safe, minimally invasive and effective treatment for chyluria. We report an unusual complication of acute necrotizing ureteritis following instillation of silver nitrate in a case of chyluria. It resolved completely with non-surgical intervention. The diagnosis and management of chyluria is discussed, with a brief review of the literature.

Key Words: chyluria, silver nitrate instillation, necrotizing ureteritis
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CASE PRESENTATION

A 55-year-old female had intermittently been passing milky white urine for more than 20 years. No history of trauma, radiation, or parasite infection were known. The patient underwent cystoscopic examination following a fatty meal. A milky efflux was observed from the right ureteral orifice. Under the diagnosis of chyluria, 10 mL of 1% silver nitrate was instilled through a ureteric catheter. The patient had clear urine after treatment. Unfortunately, right hydronephrosis developed 4 days later. The patient experienced fever, hematuria, and right renal colic pain despite analgesics. Ureteroscopy revealed a diffuse hemorrhagic inflammation of the mucosa, which was coated with a large amount of necrotic fibrin. Stenting with a double-J catheter failed due to a sharp angle formed at the proximal ureter. Hence, percutaneous nephrostomy (PCN) for urinary diversion was performed, and parenteral antibiotics were administered. The fever and hematuria subsided within 3 days.

Antegrade pyelography (from PCN) showed a kinking ureter with massive filling defect that had resulted in obstructive uropathy (Figure 2). For the next 40 days, the patient retained the PCN drainage and continued with oral antibiotics. Follow-up antegrade pyelography showed complete resolution of the right ureteral obstruction (Figure 3); the PCN tube was, therefore, removed. The patient remained asymptomatic at the 3-month follow-up.
DISCUSSION

Chyluria is rare in developed countries. However, it is not uncommon in Asia, especially in Japan, India, Hong Kong, and Taiwan [2]. It is believed to occur as a result of communication between the lymphatics and the renal collecting system [3]. Chyluria may be classified as parasitic or non-parasitic. In the former group, filariasis is the prime cause. Non-parasitic causes such as malignant tumors of the thoracic duct, trauma, and pregnancy are occasionally seen [2]. The communication between the lymphatics and pyelocaliceal system can be anywhere in the urinary tract, but it occurs most frequently in the renal pelvis [4].

Clinically, the presentations are milky urine passage in association with dysuria, hematuria, and loss of protein and fat, resulting in hypoproteinemia, weight loss, malnutrition, and cachexia [5]. Although not life-threatening in most cases, it can be disturbing and sometimes debilitating if the chyle loss in urine is profuse. The diagnosis of chyluria is made by Sudan III stain of urine, and further work including intravenous pyelography, cystoscopy, retrograde pyelography, lymphangiography, and computerized tomography. Lymphangiography is the most specific and informative examination [4,5].

For early and mild chyluria, conservative treatment can be used. This includes limiting fat intake and the instillation of silver nitrate into the renal pelvis. Silver nitrate instillation induces an inflammatory reaction in the lymphatics. This causes chemical lymphangitis and edema of the lymphatic channels, and the resultant blockage leads to immediate relief by fibrosis resulting in permanent remission [1]. In patients without disease remission, further courses of silver nitrate instillation are given at an interval of more than 6 months [1,5]. In patients with a long history of severe chyluria, surgical intervention is necessary because the long-term loss
of nutritional material is harmful. Surgical options include nephrectomy, renal capsulectomy, ligation of the renal lymphatic vessel via open surgery, or a laparoscopic approach [6].

The instillation of silver nitrate into the renal pelvis is a safe, minimally invasive and effective treatment for chyluria. However, acute necrotizing ureteritis with obstructive uropathy following silver nitrate instillation complicated our case. This severe urologic complication may have been due to a coexisting urinary tract infection from the long-term chyluria. In our case, the double-J stent may have irritated the mucosa and interfered with mucosal healing. This patient was treated using PCN drainage and oral antibiotics, leading to complete resolution. Thus, we recommend early PCN drainage instead of ureteral intervention for the hydronephrosis caused by acute necrotizing ureteritis. Early PCN drainage may have a more favorable outcome than ureteral intervention due to its minimal interference with mucosal healing.

REFERENCES

灌注硝酸銀治療乳糜尿併發急性壞死性輸尿管炎及阻塞性腎病變 — 病例報告

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乳糜尿的發生是淋巴循環與腎盂之間相通。其發生的原因可歸類為寄生蟲引起或非寄生蟲引起。疾病本身並非馬上有生命威脅，但它可因為嚴重的蛋白尿而引起血中白蛋白過低，體重減低，以及免疫方面的異常。乳糜尿的治療包括了飲食控制、硝酸銀灌注以及手術的處理。在腎孟施以硝酸銀灌注來治療乳糜尿曾被報告是一個安全、侵犯性小並且有效的治療。我們提出一個五十五歲女性患者，罹患乳糜尿，經由在腎孟施以硝酸銀灌注來治療乳糜尿併發急性壞死性輸尿管炎及阻塞性腎病變。我們採經皮穿腎造瘻併抗生素的非手術治療，成功的達到完全緩解。

關鍵詞：乳糜尿，硝酸銀灌注，壞死性輸尿管炎
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