Massive Steinstrasse After Treatment of a Staghorn Calculus

Jennifer Pugliese* and Andrew Peterson

Madigan Army Medical Center, Fort Lewis, Tacoma, WA 98431

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E-mail: llewopjm@yahoo.com; andrew.peterson@amedd.army.mil

FIGURE 1. Computed Tomography with axial images through renal pelvis and ureteropelvic junction demonstrating large preoperative calculus burden.

*Corresponding author.

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FIGURE 2. Plain radiograph demonstrating massive postoperative steinstrasse..

KEYWORDS: nephrolithiasis, steinstrasse, calculus

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A 63-year-old female presented with a symptomatic 2.2 x 3.8 cm right renal stone. After discussion of options for management, she chose minimally invasive treatment. A stent was placed after treatment with right ureteroscopy and laser lithotripsy. She represented with steinstrasse along the length of the stent. This was treated with a combination of ureteroscopy and extracorporeal shock wave lithotripsy (ESWL) using 2400 shocks at 24 kilovolts with complete resolution of the steinstrasse.

Steinstrasse may occur after ESWL and is often transient and asymptomatic. Up to one-third of patients may present with silent obstruction and resultant loss of renal function[1]. Steinstrasse usually involves only part of the ureter, and complete ureteral involvement, as in this case, is rare. Abdel-Khalek, et.al. reviewed 2954 patients with renal stones who underwent ESWL. Steinstrasse occurred in 146 cases (4.9%), which resolved spontaneously in 73 (50%)[2]. In a separate review, Weinerth, et.al. showed that large stone burdens (1.7 cm or greater) and bilateral treatments were the largest predisposing factors for the development of steinstrasse[3].

Steinstrasse is a known complication of the treatment of large renal calculi. Since many cases can be associated with asymptomatic obstruction, postoperative imaging is essential for early identification to avoid significant morbidity.

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