



Case Report

Successful Distal Urethral Stone Removal in the Emergency Department

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ABSTRACT

Nephrolithiasis is a common pathology encountered in the primary care and emergency department (ED) setting. In 2009 alone, there were over one million ED visits related to nephrolithiasis Higa et al. (2017) [1]. Emergent treatment options range from non-invasive pain control and patient education to lithotripsy and other invasive urologic procedures depending on stone location and related pathology. Urethral calculi are estimated to represent 0.3% of all urinary stone diseases Verit et al. (2006) [2]. There are very few case reports documenting distal urethral stone removal in the ED. Here we present a case of distal urethral stone impaction and the removal of this stone by ED providers, leading to expedited care and prevention of consultation and possible admission.

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1. Case presentation

A 34-year-old man presented to the ED with bilateral flank pain lasting 2–3 days with associated hematuria. He had multiple similar episodes in the past 3–6 months associated with passage presumed stones that were estimated to be “the size of a corn kernel”. He had never sought medical care for these events. The patient noticed on the day of presentation that he was having difficulty urinating and he was having increasing penile pain. Prior to ED arrival, the patient noticed a stone that was visible in the urethral meatus, which was also visualized upon ED evaluation. Computed axial tomography (CT) was initially obtained to determine concomitant stones as well as determine presence or absence of associated hydronephrosis. Neither were present on imaging. CT did not image to the level of the penis, therefore X-ray was obtained for further characterization of the object. Once the isolated stone was noted to be contained to the distal urethra without extension into the posterior urethra, decision was made to extract in ED under local anesthesia. Viscous lidocaine was applied to urethral meatus topically. Lidocaine 1% without epinephrine was injected into the perimeatal tissue. Needle holders and forceps were used to remove the stone, with additional pressure required to manually push the stone distally via the ventral shaft of the penis. (Fig. 1). Post-procedure examination revealed no bleeding or tears. Patient was able to successfully urinate after procedure without pain, hematuria or incident.

2. Discussion and conclusion

This case demonstrates a successful bedside removal of a distal urethral stone. Following obtaining appropriate imaging modalities the solitary stone was localized to the distal urethra and determination of safe



Fig. 1. Removal of impacted urethral meatal stone.

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removal at bedside was made. Urethral stones are classically associated with urethral pathology such as urethral diverticula. These stones can be pathologic in that nature or migratory from bladder stones. Sending stones for pathology can help determine the origin of stones and direct further patient care in the outpatient setting. Based on this single case report and review of the relevant literature, urethral stone removal in the ED can be an option in limited circumstances where the stone can be visualized and is localized to the distal urethral tip. Ultrasound, X-ray, urethrogram and CT can all be useful imaging modalities to help the ED clinician localize the stone and make decisions about bedside removal vs. involving a specialist.

Disclosures

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