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Obstructive Pyelonephritis Complicated by a Metastatic Leg Abscess Due To Escherichia Coli: A Case Report

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Abstract

Obstructive pyelonephritis is a urological emergency that may progress to severe sepsis if urinary drainage is not rapidly achieved. Hematogenous dissemination leading to metastatic soft tissue abscesses remains exceptional. We report the case of a 76-year-old woman admitted with febrile flank pain and general deterioration. CT urography revealed an 8 mm obstructive stone of the right lumbar ureter responsible for obstructive pyelonephritis. Emergency drainage was performed with placement of a double J ureteral stent. Four days later, an inflammatory swelling appeared on the left leg. Soft tissue CT demonstrated a deep collection consistent with an abscess requiring surgical drainage. Cultures from the pyelic urine and the abscess grew the same organism: Escherichia coli. The outcome was favorable after appropriate antibiotic therapy.

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Introduction

Acute obstructive pyelonephritis is an infection of the renal parenchyma occurring in the presence of obstruction of the upper urinary tract. It represents a medical and surgical emergency because of the risk of sepsis and septic shock if treatment is delayed [1,2]. Ureteral stones are the most frequent cause of obstruction [3]. Urinary stasis promotes bacterial proliferation and facilitates systemic dissemination of microorganisms [4]. Escherichia coli remains the most common pathogen involved in complicated urinary tract infections [5,6].

Case Presentation

A 76-year-old woman was admitted with febrile flank pain evolving for several days associated with general deterioration. Laboratory tests revealed leukocytosis and markedly elevated inflammatory markers. CT urography demonstrated an obstructive 8 mm stone located in the right lumbar ureter causing

hydronephrosis and findings consistent with obstructive pyelonephritis (Figure 1).

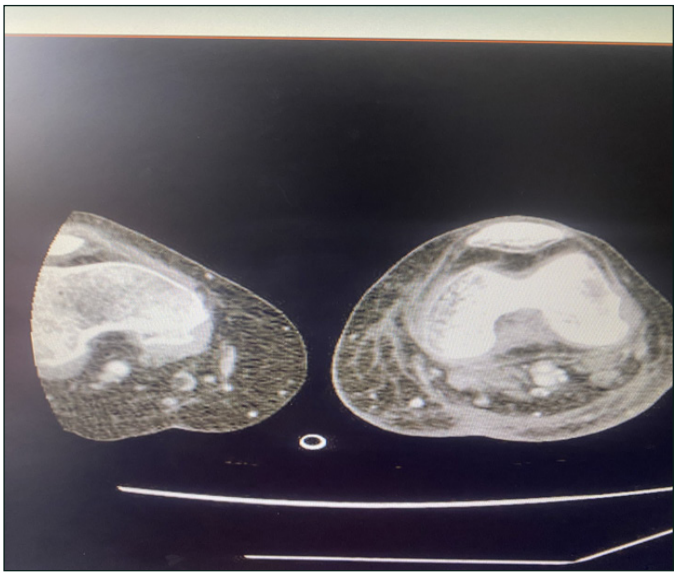

Figure 1: Radiological imaging illustrating the case.

Emergency urinary drainage was performed with placement of a double J ureteral stent and purulent pyelic urine was collected for microbiological analysis. Four days later, the patient developed a painful swelling of the left leg with inflammatory signs. CT scan of the soft tissues revealed a deep collection compatible with a soft tissue abscess (Figure 2).

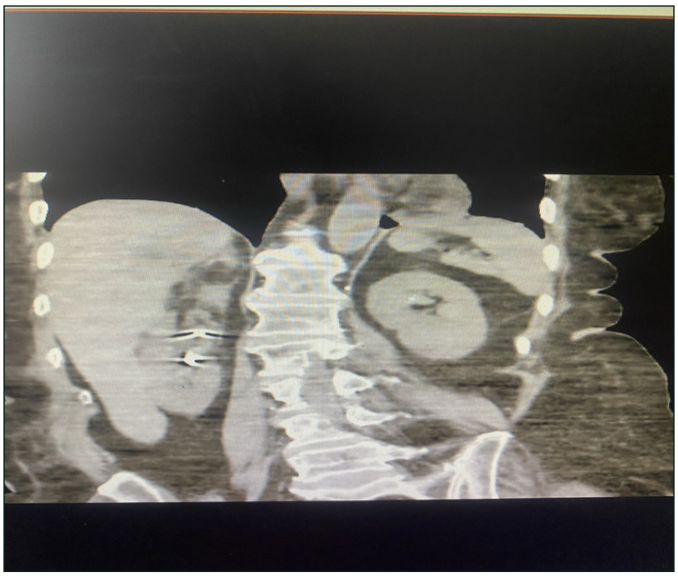

Figure 2: Radiological Imaging Illustrating the Case.

Surgical incision and drainage were performed. Cultures from both the pyelic urine and the abscess pus isolated Escherichia coli, suggesting hematogenous dissemination from the initial urinary focus [7].

Discussion

Obstructive pyelonephritis is a severe form of urinary infection resulting from the association of urinary tract obstruction and bacterial infection (1,3). Bacteremia can occur in approximately 20–30% of severe cases (8). However, metastatic infectious localizations remain uncommon. Several case reports have described secondary abscesses located in the psoas muscle, vertebrae, or soft tissues (7,9). In our observation, the identification of the same microorganism in both the urinary and abscess cultures strongly supports septic dissemination from the urinary source. Imaging plays a crucial role in diagnosing such complications. Computed tomography remains the reference examination for detecting deep collections and guiding therapeutic management (3,10). Management relies on rapid urinary drainage, appropriate antibiotic therapy, and drainage of secondary collections when present (2,8). Early diagnosis and treatment significantly improve patient outcomes.

Conclusion

Obstructive pyelonephritis is a urological emergency requiring prompt management. Although rare, hematogenous dissemination leading to metastatic soft tissue abscesses may occur. Early drainage of the urinary tract combined with appropriate antibiotic therapy is essential to prevent severe complications.

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