Radiology for the Surgeon
Chirurgie et radiologie

SOFT-TISSUE CASE 31. DIAGNOSIS

EMPHYSEMATOUS CYSTITIS

The patient received antibiotics intravenously shortly after admission. Because of signs of peritonitis, laparotomy was done. The urinary bladder was found to be indurated and hemorrhagic, with crepitations around the wall. Cystoscopy showed a diffusely inflamed mucosa. Bladder lavage was done and a urinary catheter placed for drainage. Postoperatively the patient received antibiotics intravenously and was monitored in the intensive care unit. She suffered multiple organ failure and died 3 days after the operation. Culture of the urine grew *Klebsiella pneumoniae*.

Emphysematous cystitis is a rare complication of urinary tract infection that usually occurs in diabetic patients.[1] Fermentation of glucose by bacteria causes gas production in the lumen and wall of the bladder, resulting in a rim of radiolucency around the bladder on plain films (Fig. 1).[2] The common responsible organisms include *Escherichia coli*, *Enterobacter* and, rarely, *Klebsiella* and fungus.[3] The condition is difficult to diagnose because presenting symptoms are diverse. Urinary symptoms and an unusual radiologic appearance may prompt earlier involvement of urologists. Early recognition, control of diabetes, aggressive intravenous antibiotic therapy and adequate bladder drainage are the mainstays of treatment. The outcome of this condition is variable, ranging from complete recovery to death, depending on the general condition of the patient and the severity of the illness at the time of presentation.[3]
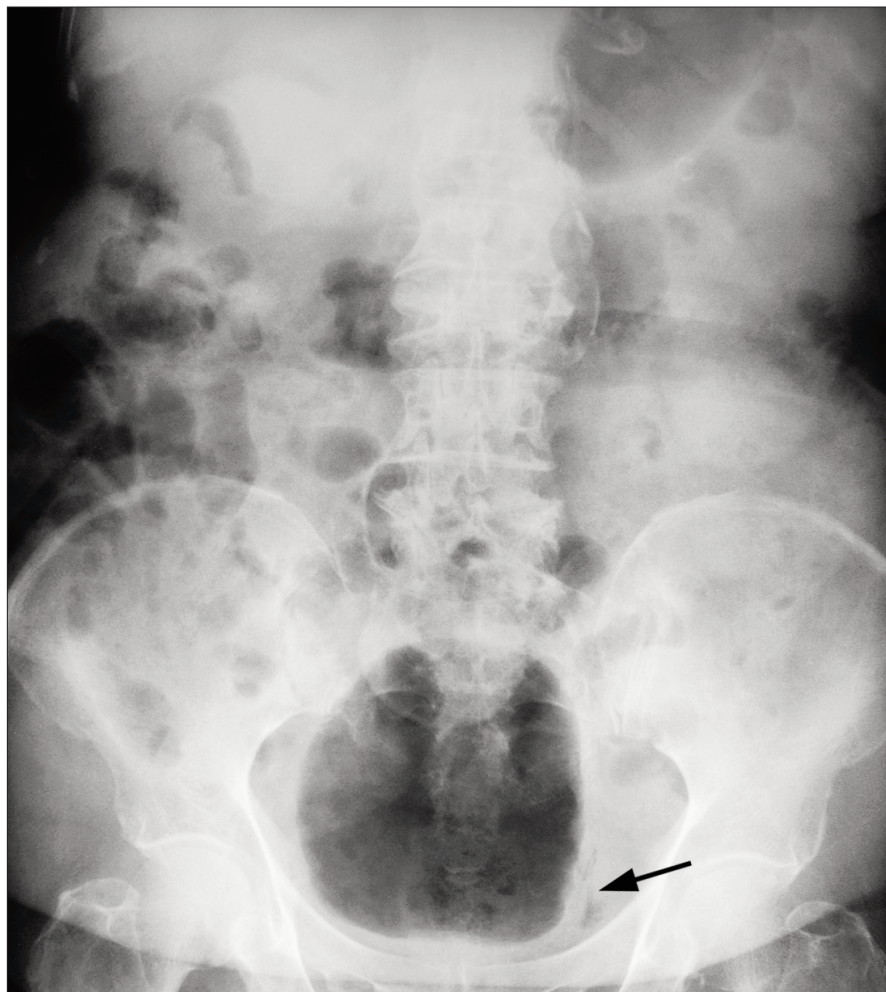

FIG. 1

References

1. Finby N, Begg CF. Diabetes mellitus and cystitis emphysematosa. *N Y State J Med* 1969;69(10):1315-8.
2. Bailey H. Cystitis emphysematosa: 19 cases with intraluminal and interstitial collections of gas. *Am J Roentgenol* 1961;86:850-62.
3. Quint HJ, Drach GW, Rappaport WD, Hoffman CJ. Emphysematous cystitis: a review of the spectrum of disease. *J Urol* 1992;147(1):134-7.