中文題目：產氣性腎盂腎炎引起之廣泛性脊椎硬腦膜外膿腫 – 案例報告

英文題目：Panspinal Epidural Abscess Caused by Acute Emphysematous Pyelonephritis in A Diabetic Man: A Case Report

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Background*:* Emphysematous pyelonephritis is a rare but fatal necrotizing infection of the kidney. While most cases with emphysematous pyelonephritis fall into class 1 and 2, some present with extensive involvement of extrarenal organs. It had been associated with pneumomediastinum, gas in inferior vena cava and renal vein, psoas muscle abscess, scrotum emphysema, and even pneumorrhachis. However, no previous literatures mentioned emphysematous pyelonephritis-related epidural spinal abscess formation. Here, we presented the first case of emphysematous pyelonephritis-associated epidural abscess and gas formation in spinal canal with whole spine involvement in a diabetic patient.

Method: Patient profile and laboratory data were collected after patient's consent and IRB approval.

Results: A 56-year-old man with hypertension and type 2 diabetes mellitus had been in his usual health state until 3 weeks before admission, when sudden attack of severe neck, back and bilateral loin pain were first noted and he came to our ER for further evaluation. On examination, his body temperature was 36.4℃, the heart rate 102 beats per minute, the respiratory rate 20 breaths per minute, the blood pressure 95/58 mm Hg, and the oxygen saturation 98% under ambient air. Severe tenderness over left costovertebral angle was noted, and a poor-defined tender soft tissue mass (8 cm x 6 cm) with crepitus on palpitation around the right clavicle was found. Muscle strength was grade 4/5 over four limbs with normal sensation. Plain abdomen radiograph revealed suspicious soft tissue emphysema change at left retroperitoneal region obliterating the left psoas muscle line. Urine analysis showed hematuria, pyuria, and bacteriuria. Emergent abdominal computed tomography (CT) revealed a 4.2cm poor-marginated fluid and air collection at the left kidney, and abnormal air collection within the bilateral psoas muscles and paraspinal muscles, extending to the iliacus muscle, left inguinal region, and spinal canal from the lumbar to thoracic levels. Acute emphysematous pyelonephritis with retroperitoneal and extensive spinal cord involvement was impressed. The sepsis bundle was initiated and empirical antibiotic treatment with intravenous flomoxef and metronidazole was administrated

immediately.

After admission, his general condition was relatively stable. The blood culture revealed wide-type E. coli with sensitivity to all antibiotics on day 4. However, severe chillness, tachycardia, tachypnea, poor glycemic control and drowsy consciousness were found on day 5. On day 6 after admission, the muscle strength of low extremities deteriorated from grade 5/5 to 1/5. The emergent spinal MRI revealed extensive C2-L5 epidural spinal empyema, and abnormal fluid collection at T2-T9 level, causing spinal canal stenosis and cord compression (Figure 2). Antibiotic treatment was shift to combination therapy with intravenous ceftriaxone plus ciprofloxacin. Emergent surgical debridement and decompression with unilateral laminectomy and bilateral decompression (ULBD) at T8-L4 level and abscess drainage of the bilateral low lumbar back muscle was done on day 7. His clinical condition stabilized after surgery. Early rehabilitation program was initiated while in the ICU since day 15. Follow up MRI of the spine on day 38 showed regression of the fluid collection in paraspinal regions and epidural space. 6 months after discharge, the patient was in full recovery and could walk smoothly without assistance.

Conclusion: We were the first to present a panspinal epidural abscess caused by acute emphysematous pyelonephritis in a diabetic man. The abscess compressed the spinal canal resulting in deteriorating neurological deficit despite conservative medical treatment, and resolved after unilateral laminectomy and bilateral decompression of the spine. The patient was in full recovery and could walk without assistance about 6 months after discharge.