Hypervirulent *Klebsiella pneumoniae* causing emphysematous pyelonephritis: a life-threatening pathogen within Australian communities

To the Editor: We read with interest the above case report.[1] Although it was mainly focused on the clinical presentation and microbiology of hypervirulent *Klebsiella pneumonia*, we are interested in other features of the case report.

We believe that the title is misleading as there were no radiological features of emphysematous pyelonephritis (gas in the collecting system, or inside or outside Gerota's fascia) but there was impressive emphysematous cystitis. Emphysematous cystitis is heavily associated with renal glycosuria, enabling the enteric organisms to ferment glucose to carbon dioxide and hydrogen in the bladder tissue. The recent increase in the use of sodium–glucose cotransporter type 2 (SGLT2) inhibitors to treat diabetes may see a significant rise in this complication. It is not stated whether the patient was being treated with SGLT2 inhibitors. It is important to mention that the mortality rates for emphysematous cystitis (3–12%) significantly differ from emphysematous pyelonephritis (14–20%).[2]

The portal of entry of hypervirulent *K. pneumoniae* is uncertain but most likely is faecal–oral. The prevalence of *K. pneumoniae* carriage is higher in the Asian population (60–70%) when compared with people of European descent (5–35%) due to differences in the intestinal microbiome.[3] It is probable that the same applies for hypervirulent *K. pneumoniae*.

The bloodborne spread of enteric organisms from the gastrointestinal tract is dependent on both host factors (diabetes, alcohol consumption and immunosuppression) and local factors (eg, diet, population ethnicity, climate). A recent case of emphysematous cystitis and enterococcal meningitis

treated by one of the authors lead to the discovery of strongyloidiasis as an underlying cause. It is well known that strongyloidiasis can be asymptomatic and that it is hyperendemic in South-East Asia.[4] *Strongyloides* spp can easily penetrate the intestinal wall and translocate enteric organisms into the portal circulation.[5] It would be of interest to know whether Ong and colleagues performed stool analysis or serology for *Strongyloides* spp.

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Competing interests: No relevant disclosures. ■

doi: 10.5694/mja2.52541

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