

UNUSUAL CAUSE OF DYSURIA — LYMPHOMA OF TERMINAL ILEUM

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ABSTRACT

Urinary tract symptoms can turn out to be a surprise. This case study is presented from the perspective of one such patient. This patient was seen at the Emergency Department for abdominal pain and vomiting. He had presented 2 months earlier to a primary care medical centre with a 2-day history of dysuria. Physical findings were normal and his symptoms resolved with treatment. He was later seen again in another primary care medical centre when he had a recurrence of the dysuria, together with fever and abdominal pain. He improved after treatment and was able to travel to Malaysia but returned the next day and presented to the Emergency Department because of worsening symptoms. He was admitted for an emergency surgery.

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PATIENT'S REVELATION: WHAT HAPPENED?

“Doctor, I could not stand the pain anymore so I decided to come to the Emergency Department. What is going on?”

SBR is a 47-year-old Malay gentleman with no significant past medical history who presented at the Emergency Department with severe abdominal pain, vomiting, and inability to pass motion or flatus.

He had presented to a primary care medical centre 2 days before for generalised abdominal pain with a pain score of 5/10, associated with a 3-day history of fever, myalgia, and diarrhoea. Preceding these symptoms, he had been having intermittent dysuria for a week. At the primary care medical centre, he was noted to be febrile at 39.7°Celsius, and his throat appeared mildly infected; no abnormalities detected on abdominal examination. A full blood count done then showed a white cell count of $16.00 \times 10^9/L$ with 89.9 percent neutrophilia, and a urine microscopy examination was normal. The patient was given symptomatic treatment for his abdominal pain then discharged home with antibiotics, analgesia, and symptomatic treatment for diarrhoea. He was advised to seek medical attention again if the abdominal pain persisted. The patient experienced some improvement in his abdominal pain and proceeded with a trip to Malaysia the next day. However, over the course of the day, his abdominal pain worsened, he developed vomiting, and was unable to pass motion or flatus.

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This prompted him to visit the Emergency Department when he returned to Singapore the following day.

Upon further clarification, he recalled having had an episode of dysuria 2 months earlier. He had consulted at a different primary care medical centre after a 2-day history of dysuria accompanied by increased urinary frequency. He had no other lower urinary tract symptoms or urethral discharge, nor any systemic symptoms such as fever, nausea or vomiting, backache or flank pain, loss of appetite or weight. Sexual history was unremarkable — patient was divorced but had only one steady female partner. He had had no previous episodes of urinary tract or sexually transmitted infections. On clinical examination, the patient was afebrile and vitals were stable. Examination of his abdomen and genital region, including a digital rectal examination found no abnormalities. A urine microscopy examination was done which was normal. No other investigations were done at this point as the patient appeared clinically well and the history of symptoms had only been for a 2-day duration. The patient was treated for possible cystitis with antibiotics and advised to return if symptoms persisted or recurred. However, the patient's symptoms resolved completely a few days after starting antibiotics. He completed the course of antibiotics and there was no recurrence of symptoms for the next 2 months till just before his presentation to the Emergency Department.

At the Emergency Department, the patient had a temperature of 39.6°Celsius, and was tachycardic with a heart rate of 110/min. He appeared clinically dehydrated and his abdomen was distended with generalised tenderness, guarding, and hypoactive bowel sounds. Digital rectal examination was normal and renal punch was negative.

A full blood count showed a white cell count of $19.96 \times 10^9/L$. In view of his abdominal symptoms and signs, a computed tomography scan of his abdomen and pelvis was done. The scan showed a mass measuring 10.1 by 12.9 cm near to the terminal ileum, with irregular circumferential wall thickening and lumen containing suggestion of bowel content and gas pockets. Fat stranding and a small amount of free fluid were also noted, with a suspicion of a collection in the rectovesical pouch. The patient was admitted for emergency surgery.

GAINING INSIGHT: WHAT ARE THE ISSUES?

The patient's history, physical findings, and investigations in the Emergency Department showed an intestinal obstruction with perforation. The following issues were highlighted following the patient's revelation:

1. What does the patient have that would cause intestinal obstruction and perforation?

- Why was the patient not diagnosed earlier — at the first primary care medical centre consultation 2 months earlier?
- How should the patient be managed following this diagnosis?

STUDY THE MANAGEMENT: HOW DO WE APPLY THIS IN OUR CLINICAL PRACTICE?

I. What Does the Patient Have That Would Cause Intestinal Obstruction and Perforation?

In view of the physical findings and results from the imaging done, the surgical team was consulted and the decision was made to do an emergency diagnostic laparoscopy. Surgeons then proceeded with an exploratory laparotomy and small bowel resection and end-ileostomy upon finding a perforated terminal ileum mass measuring 10 by 13cm adjacent to the urinary bladder and sigmoid colon. Histology showed it was a diffuse large B-cell lymphoma.

2. Why Was the Patient Not Diagnosed Earlier — at the first primary medical care centre consultation 2 months earlier?

Looking back at the timeline of events, the following factors may have contributed to the patient's condition not being diagnosed earlier.

(i) Management of dysuria in males in the primary care setting

Table I. Causes of Dysuria in Males⁴

Category	Causes
Inflammatory	
Infectious	Cystitis, urethritis, pyelonephritis, prostatitis, epididymo-orchitis, sexually transmitted infections
Non-infectious	Foreign body (e.g. stent, stone), urethritis (e.g. reactive arthritis)
Dermatologic	Irritant/contact dermatitis, lichen sclerosus, lichen planus, psoriasis, Stevens-Johnson syndrome, Behcet syndrome
Non-inflammatory	
Anatomic	Benign prostatic hyperplasia, urethral stricture, urethral diverticulum
Neoplastic	Bladder/renal/prostate/penile cancer, lymphoma, metastatic cancer
Trauma/iatrogenic	Genitourinary instrumentation or surgery, pelvic irradiation, foreign body presence, horseback/bicycle riding
Drug/food-related	Spermicides, topical deodorants, cyclophosphamide, opioids, ketamine, nifedipine, bladder-irritating foods
Idiopathic	Interstitial cystitis/bladder pain syndrome

Comment: Irritation of bladder by extrinsic lesion not mentioned.

Dysuria is a common complaint in the primary care setting, caused by irritation or inflammation around the urinary tract.¹ Table I presents the possible causes in the male population, amongst which infections are the most prevalent cause. In older men, dysuria is usually due to an increased incidence of benign prostatic hyperplasia with accompanying inflammation and infection.² Of note, inflammation from adjacent abdominal structures such as the colon can also alter the bladder sensation and cause dysuria.³

A good history taking and physical examination will help narrow down the likely cause when evaluating a male patient with dysuria. It is worth noting that being of the male gender is a risk factor in itself for getting complicated urinary tract infections.⁵

In the case presented here, the patient had a 2-day history of dysuria and urinary frequency. Abdominal examination did not show any suprapubic mass or tenderness. Urinary microscopy was normal. On hindsight, this could have prompted a search for an underlying aetiology to explain his symptoms, including consideration of possible causes outside the bladder.

(ii) Continuity of care

Between the first and second consultations in the primary care medical centres, the patient in this case had shifted his place of residence and so consulted a different centre nearer his new home, resulting in loss of continuity of care. Scheduling timely clinical reviews following each consultation would have allowed for re-evaluation of his symptoms and might have prompted earlier referral for further investigations.

3. How Should the Patient be Managed Following this Diagnosis?

Typically, treatment of diffuse large B-cell lymphomas involves chemotherapy, both for limited and advanced-stage disease. Surgery is usually reserved for patients with complications such as perforation, obstruction, or profuse bleeding.

In our patient, given that he presented with an acute intestinal perforation, the plan of management was emergency surgery to remove the mass. The patient's condition stabilised after surgery and his care was taken over by the medical oncology team after his wound showed signs of healing well. Further scans were done subsequently which showed that he had Stage 4 diffuse large B-cell lymphoma and the patient was commenced on chemotherapy.

However, he had progressive disease after starting chemotherapy and developed new onset right eye partial ptosis. A magnetic resonance imaging of his brain showed the disease had metastasised to the brain and was affecting his cranial nerves, suggestive of the aggressive nature of his disease.

DISCUSSION

What is Known?

A review of literature showed that diffuse large B-cell lymphoma is the most common lymphoma and accounts for approximately 25 percent of all Non-Hodgkin's lymphomas in the developed world.⁶ The gastrointestinal tract is the most common site of primary extra-nodal disease. In the intestines, the ileo-caecum is the most common site affected.⁷

Non-specific gastrointestinal symptoms such as intermittent abdominal pain, diarrhoea, weight loss, and fever may be the first signs of a gastrointestinal tract lymphoma. Given the non-specific nature of these symptoms, diagnosis tends to be delayed as patients and physicians alike may overlook these symptoms initially.⁸

Moreover, lymphomas involving the small intestine may not even present with any symptoms until they are at an advanced stage, with diagnosis only made when patients present with complications such as intestinal obstruction or bowel perforation.⁹

Other rare presentations of small bowel lymphoma noted in literature include a patient presenting with a groin abscess due to intra-abdominal communication with the perforated small bowel mass.¹⁰ Cases have also been reported of patients presenting with infiltration of the bladder wall by the small bowel tumour, resulting in the formation of an enterovesical fistula.^{11,12} In these cases, the patients presented with haematuria, with one reporting concurrently having a month-long history of dysuria.

What is New?

A rapidly growing gastrointestinal tumour can irritate structures such as the bladder, which is located adjacent to it. This case highlights that while infections are the most common cause of dysuria in males, there are other more sinister causes of dysuria that should be ruled out, particularly if symptoms are persistent or recurrent. Though dysuria suggests the pathology is most likely in the urinary tract, this should be confirmed with an abnormal urine microscopy. A normal urine microscopy should be a signal to look harder for an underlying cause for the symptoms rather than attributing it to an on-going infection.

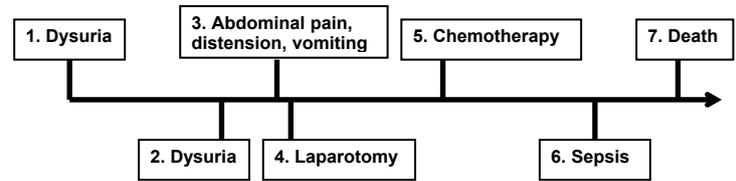
It is important to follow up patients with dysuria to ensure complete resolution and to investigate further for an underlying cause if it persists. Care should be taken to look for less common aetiologies as well, including disorders of the gastrointestinal tract in these cases.

CONCLUSIONS

A primary gastrointestinal lymphoma may present with intestinal obstruction and perforation. Such a tumour in the intestinal region that is growing rapidly may irritate the bladder, which is situated adjacent to the bowels. Awareness that dysuria can be due to a gastrointestinal lesion is the key take home message. In addition, timely clinical reviews are essential in

closing the loop with patients, allowing for re-assessment of their condition and prompt detection of progression of symptoms that may require further evaluation.

Figure 1: Timeline of Events Leading to Admission.



1. Dysuria (10 December 2014):

Patient presents to primary care medical centre with 2-day history of dysuria. Examination and urine microscopy normal. Symptoms resolved few days after starting antibiotics.

2. Dysuria (30 January 2015):

Patient experiences dysuria again, associated with fever, myalgia and diarrhoea. Presented to another primary care medical centre when he developed abdominal pain. Noted to be febrile with raised white cell count. Treated with antibiotics and analgesia with improvement and travels to Malaysia the next day.

3. Abdominal pain and distension, vomiting (1 February 2015):

Patient presents to emergency department after developing worsening abdominal pain, associated with vomiting, and inability to pass motion or flatus. Examination and investigations showed intestinal obstruction and perforation.

4. Laparotomy (2 February 2015):

Patient undergoes emergency laparotomy and small-bowel resection and end-ileostomy. Intra-operatively noted a perforated terminal ileum mass adjacent to the urinary bladder — histology shows a diffuse large B-cell lymphoma.

5. Chemotherapy (17 February – July 2015):

Commenced on chemotherapy. However, had progressive disease with central nervous system involvement. Changed chemotherapy regime with good partial response.

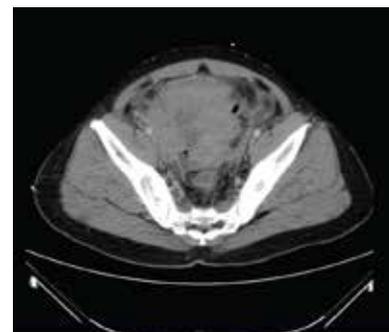
6. Sepsis (May 2015):

Chemotherapy was complicated by neutropenic septic shock secondary to *Escherichia coli* bacteraemia. Recovered and continued on chemotherapy.

7. Death (14 July 2015):

Presented again with neutropenic fever with septic shock. Admitted to intensive care unit and succumbed to severe sepsis a few hours later.

Figure 2: Computed Tomography of Abdomen and Pelvis of Patient at Emergency Department.



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