

Case report

Spontaneous retroperitoneal abscess caused by streptococcus pyogenes

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SUMMARY

The retroperitoneum is a potential space that can be infected by several microbes. We describe the case of a 38-year-old woman who was presented to us with abdominal pain and fever for 6 days. Laboratory studies showed leukocytosis (WBC=18000) and an abnormal liver function tests (AST=91U/l, ALT=122U/l, ALP=277U/l). A computed tomography of the abdomen revealed a retroperitoneal abscess, while the abdominal viscera were normal. Culture of the pus, obtained during surgical drainage, showed *Streptococcus pyogenes*. Although streptococcal infections are very usual in clinical practice, *streptococcus pyogenes* has been reported as a very rare cause of spontaneous retroperitoneal abscess, especially for immunocompetent patients. The patient was treated first with intravenous antibiotics with no response, and then with surgical drainage, with fully recovery.

Key words: *Streptococcus pyogenes*, abscess, retroperitoneum

INTRODUCTION

The retroperitoneum, a potential space with clearly defined boundaries between the peritoneum and transversalis fascia, can be seeded by infections involving numerous organs such as kidneys, ureters, pancreas, colon, duodenum, bladder, uterus and rectum.¹ Known causes of isolated retroperitoneal abscess are osteomyeli-

tis of the spinal cord, contamination of post-traumatic pelvic hematomas, perforated appendicitis, perforated colon carcinoma, diverticulitis, crohn disease, xanthogranulomatous pyelonephritis, acute cholecystitis and pancreatitis.² The most common presentation of a retroperitoneal abscess includes tenderness and/or pain in the lower abdomen, palpable mass and fever.³ Less commonly, pain may be noted in the lower back hip or thigh.³ Other symptoms include malaise, anorexia and weight loss.³ Pollock described a characteristic triad of symptoms: diffuse abdominal pain, extreme weakness and intestinal distension.⁴ Half of the patients with a retroperitoneal abscess develop major complications such as pneumonia, respiratory failure, renal deficiency, cardiac failure and coloenteric fistula.⁵ Laboratory studies commonly reveal leukocytosis with neutrophilia. Abdominal x-ray films may show a soft tissue mass, free gas or obliteration of the psoas shadow. Other common diagnostic procedures for the diagnosis of a retroperitoneal abscess are US, CT, NMR, MRI and scanning with gallium-67 or indium-111 labeled leukocytes.⁶ Several reports have indicated the polymicrobial nature of these infections with both aerobic (*E. Coli*, *Klebsiella*, *Streptococcus*, *Proteus*, *Enterobacter*) and anaerobic (*Bacteroides Fragilis*, *Peptostreptococcus* and *Clostridium*) microbes, isolated in more than 75% of cases.⁷ The case of a female patient with a spontaneous retroperitoneal abscess due to *Streptococcus Pyogenes* is reported.

CASE REPORT

A previously healthy 38-year-old female presented with a six-day history of pain in the right lower quadrant with slight tenderness in the right loin and fever of a range from 37.8°C to 39.5°C. Physical examination revealed a woman in a good condition with a temperature of 38.8°C.

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She had no history of chronic medication or chronic disease. She only referred to a fall from a ladder 6 months earlier, with no other serious consequences, apart from bruises. On admission, laboratory studies revealed leukocytosis, WBC=18000 (84,6% neutrophils) and abnormal liver function tests (AST=91U/l, ALT= 122U/l, ALP=277U/l). Urine and blood cultures were negative. Rectal examination was normal. Empiric antibiotic therapy with intravenous administration of metronidazole, ciprofloxacin and amikasin was started with no response, concerning pain, fever and hematological and biochemical tests after 5 days of treatment (Table 1). Urgent computed tomography of the abdomen and pelvis showed a collection of abscesses extending from groin to retroperitoneum among the big vessels and ureters obscuring the perirectal fat (Figure 1). After diagnosis surgical drainage was performed and 500cc of hemorrhagic odor-

less pus was found below the bifurcation of the aorta and among the right iliac vessels. Pus cultures revealed *Streptococcus pyogenes*. The abdominal viscera were normal and the patient was discharged after 20 days with full recovery, as all the blood tests were normal and the patient was in good condition and without fever (Table 1).

DISCUSSION

The most common retroperitoneal abscesses are those of the kidneys and psoas, due to various renal diseases and postoperative infections.⁸ Immunosuppressive conditions such as diabetes mellitus, alcohol abuse, malignancy and glucocorticosteroids, favour the development of a retroperitoneal abscess, by impairing host response.⁹ Our patient is considered to be a very rare case of retroperitoneal abscess, as there was no obvious reason or any immunosuppressive condition to justify its development. The hemorrhagic nature of the pus and the fall from a ladder 6 months earlier, according to the patient's past medical history, could support the hypothesis of an infected previous spontaneous hematoma. Although streptococcal infections are very common in clinical practice, streptococcus pyogenes revealed from the culture of the pus, has been reported as a very rare cause of spontaneous retroperitoneal abscess, especially for immunocompetent patients, such as our patient.¹⁰ The clinical diagnosis of a retroperitoneal abscess is often delayed or missed because symptoms are often benign and clinical features are quite vague. Usually, to establish the diagnosis of a retroperitoneal abscess, an average of 12,7 days is required.¹¹ This delay in diagnosis and treatment contributes to a reported overall mortality rate between 22-46%.¹² Early complete surgical drainage is the primary mode of therapy, with a surgical mortality rate of about 15%.¹¹ Success is usually evident within the first 24-48h. If there is no clinical improvement after this length of time, careful evaluation for further treatment should be undertaken. A high mortality is associated with positive blood cultures and persistent fever within 48h of drainage, 75% and 71% respectively.¹² In conclusion, the overall mortality of this condition is high, but early diagnosis and appropriate treatment can improve survival. In our case, diagnosis was set 5 days after admission of the patient to the hospital and surgical drainage was performed immediately following diagnosis, leading to a good outcome. This case report give us the opportunity to realize how difficult it is to diagnose a retroperitoneal abscess early, especially when the symptoms are not characteristic, how important it is to evaluate the past medical history of the patient and how significant it is to perform

Table 1. Hematological and biochemical values of the patient

	On admission	5 th day	20 th day
WBC (x10 ³ /mm ³)	18000	16900	11900
Hg (gr/dl)	11,4	10,9	12,1
PLT (x10 ³ /mm ³)	234000	222000	247000
ESR (mm h ⁻¹)	89	75	16
AST (U/l)	91	86	29
ALT (U/l)	122	111	31
ALP (U/l)	277	252	42
γ-GT (U/l)	34	32	29

WBC (White Blood Cells), Hg (Hemoglobin), PLT (Platelets), ESR (Erythrocyte Sedimentation Rate), AST (Aspartic Transaminase), ALT (Alanine Transaminase), ALP (Alkaline Phosphatase), γ-GT (gamma-Glutamine Transferase)



Figure 1. Computed tomography of the lower abdomen, showing a retroperitoneal abscess (arrows).

good surgical drainage, so as to prevent all the complications related to this condition.

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