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Complicated Diverticulitis with Infective Spondylitis and Bilateral Psoas Abscesses: A Classic Case of Late Diagnosis

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Authors' contributions

This work was carried out in collaboration between both authors. Author UDI designed the study, wrote the protocol and the first draft of the manuscript. Author HM managed the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Introduction: Diverticular disease is said to be complicated when the acute inflammation of a diverticulum leads to perforation, bleeding, formation of abscesses, bowel wall strictures or obstruction. The vague clinical presentation and rarity of complications in our environment contributes largely to misdiagnosis of the condition.

Case Report: This report is the case of a 50-year-old male who presented multiple times to the general outpatient department of a teaching hospital in North Central Nigeria with insidious onset of malaise, intermittent fever, progressive weight loss, left flank pain and swelling, low back and waist pain radiating to the leg. Different misleading diagnoses were made within the period. The final definitive diagnosis of complicated Diverticulitis with distant lumbar Spondylodiscitis and bilateral psoas abscess with epidural extension was made with Computer tomography, CT.

Conclusion: This case demonstrates the challenge of early diagnosis of Diverticular disease and highlights the need for vigilance on the path of physicians to recognize signs and symptoms of diverticulitis with the aim of preventing its complications. There is also need for early and appropriate imaging.

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1. INTRODUCTION

Colonic diverticulum occurs when the colonic mucosa herniates through the muscular wall giving rise to an outpouching. The term "diverticulitis" connotes an associated inflammation of the diverticula usually accompanied by perforation [1].

Complicated diverticulitis is a significant cause of mortality and occurs when acute inflammation of the diverticulum leads to perforation, bleeding, formation of abscesses, bowel wall strictures or obstruction [2]. The abscess collection could be pericolic or distant via hematogenous spread to different organs.

Spondylodiscitis, an infective process which includes vertebral osteomyelitis, spondylitis and discitis represents 3–5% of all cases of osteomyelitis and is the main manifestation of hematogenous osteomyelitis in patients aged over 50 years [3,4]. Infection from the bone can spread locally into the surrounding soft tissues leading to formation of Psoas or epidural abscesses.

Secondary Psoas abscess from local extension from a nearby infective process is responsible for up to 70% of cases with infective spondylitis as the most common aetiology [5]. Bilateral psoas abscesses is very rare and occurs in just 3% of all cases, primary or secondary [6].

CT scan is the gold standard in the investigation for DD because it can accurately identify the primary diverticular and also delineate extra-luminal complications [2].

2. CASE REPORT

A 50 year old male presented to the General outpatient department with five month history of malaise, intermittent, fever and progressive weight loss, four month history of low back radiating to the legs and left flank pain and swelling.

Low back pain was dull but progressively worsened with lower limb weakness until patient became unable to walk.

Left flank swelling was gradual in onset, initially firm but became soft later. It slowly increased in size with associated abdominal distension, pain, altered bowel habits and anorexia.

Fever was intermittent, high grade and temporarily relieved by analgesics. No positive family history of TB or malignancy. Prior to this, he presented a few times to the outpatient department but was always treated empirically.

Physical examination showed a chronically ill looking, dyspneic, moderately pale, febrile (38.5°C) and anicteric man with Pulse rate of 120 bpm, BP: 130/60 mmhg, respiratory rate 38/min with fine left basal crepitations.

Abdomen was distended with tender left lumbar mass and tender hepatomegaly. Per rectal digital examination showed normal rectal sphincteric tone, free recto vesical pouch, minimally enlarged prostate with benign features.

Musculoskeletal examination showed tenderness over distal lumbosacral spine, reduced prominence of L5 with gibbus and power of 3/5 in both lower limbs.

It is of note that he had presented to the outpatient department a few times and was treated for Malaria and urinary tract infection. He was also being managed for benign prostatic enlargement based on investigations.

2.1 Laboratory Investigations

Haemoglobin level was 7.2g/dl. Blood film showed moderate hypochromasia, leukocytosis with left shift neutropenia and markedly elevated Erythrocyte sedimentation rate, ESR greater than 150.

Urinalysis yielded trace of urobilinogen and protein and cultured streptococcus specie. The Kidney function tests were normal, Prostatic surface antigen test was within normal limits. Blood culture and Mantoux tests were negative.

2.2 Radiologic Investigations

Initial ultrasound report on admission showed mild prostatic enlargement. One month after admission there was a large predominantly echogenic mass in left lumbar region which was reported as a renal mass. Several follow up ultrasound reports over the next two months had differing diagnoses which included: Left retroperitoneal malignancy, Metastatic colon cancer with spread to adjacent viscera, degenerative intraabdominal tumor with collection and large left pericolic abscess collection with hepatosplenomegaly.

Lumbosacral x-ray showed Lumbar Osteodegenerative changes. CT was advised all along but poor finances prevented this.

A CT scan done 2 1/2 months after admission showed Perforated left colonic diverticulitis with a large pericolic abscess (measuring approximately 13 x8x11 cm) extending from the left subphrenic region to the deep pelvis .There was associated distant L4/L5 spondylodiscitis with bilateral Psoas abscesses and minimal epidural collection. Left pleural collection was noted in the left hemithorax. See Figs. 1, 2.

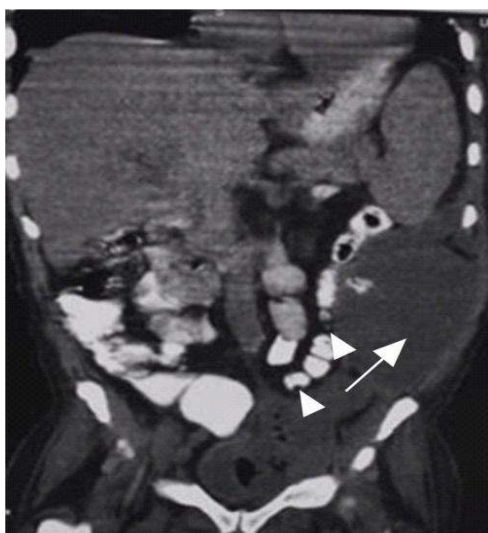


Fig. 1. Coronal Abdominal CT showing diverticula (arrowheads) with large Intraabdominopelvic abscess (arrow)

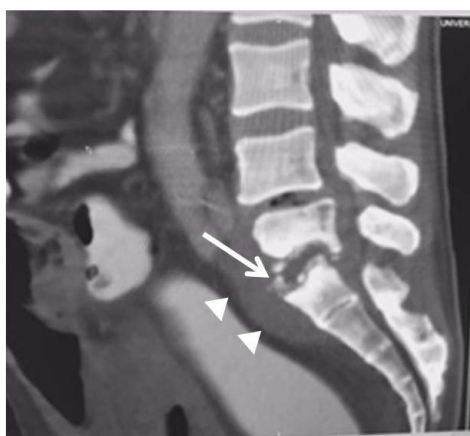


Fig. 2. Sagittal Lumbosacral CT in bone window showing Spondylodiscitis (arrow) with prevertebral collection (arrowheads)

Abdominal tap yielded 600 mls of pus and aspirate of the abscesses yielded *Klebsiella* species but was negative for Acid fast Bacilli (AFB).

Patient passed on shortly after without any definitive treatment.

3. DISCUSSION

Diverticular disease (DD) is common amongst the elderly and the Sigmoid and left colon are more commonly affected .It is widespread in the developed world, and is seen predominantly in the elderly.

Although People of black African descent were initially thought be to rarely affected different studies from Nigeria have shown an increase in the prevalence [7,8].

The adoption of low fiber type Western diet has been given as a reason for the increasing incidence since DD has been variably associated with diet and life style.

The increasing use of diagnostic procedures like Computer Tomography CT and Colonoscopy can also account for the higher detection rate in our environment.

Diverticular disease is complicated when the inflamed diverticular leads to perforations, bleeding, fistulae, formation of abscess cavities, phlegmon, intestinal stricture or obstruction [2].

The mechanism of distant abscess is thought to be through fistulation or hematogenous deposits. Involvement of the vertebrae is most likely by deposition of a septic embolus passing through the rich retroperitoneal vertebral venous plexus.

The presenting complaints are determined by the location of the disease, severity and possible complications. The symptoms which include abdominal pain, fever, bloating, change in bowel habit, vomiting, abdominal mass are however nonspecific and can occur in other intra-abdominal pathologies .This contributes to the poor index of suspicion thus leading to complications, delayed and missed diagnoses as is the case with our patient.

Symptoms and signs of spondylodiscitis and Psoas abscess are also extremely variable and

nonspecific thereby posing a major challenge in the management of the affected patients.

The clinical triad of flank pain, limitation of hip movement and fever does not occur in all patients. Dietrich et al. [9] detected the clinical triad in 5% while Lee et al. [10] detected it in 9% of their patients. Our patient's symptoms were attributed to an intrabdominal pathology and Spondylosis. Neurologic symptoms may be seen later as the disease progresses especially with extension of abscess into the epidural space.

A definitive diagnosis requires the clinician to have a high index of suspicion, take a thorough clinical history and perform good physical examination with laboratory and radiologic investigations.

3.1 Radiologic Investigations

Ultrasonography is the first line of investigation with sensitivity of 65% [11]. It has the disadvantage of being operator dependent and nonspecific in differentiating diverticulitis from other inflammatory bowel disorders. Positive findings include localized bowel wall thickening, pericolic increased echogenicity due to surrounding inflammation of the pericolic fat. Abscesses are generally seen as thick walled, aperistaltic intraabdominal collections which may demonstrate echogenic gas shows with ring down artefacts.

Though limited in diagnosis of spondylodiskitis it can be used in localizing paraspinal fluid and Psoas abscesses for aspiration and drainage.

Plain abdominal x ray is nonspecific in complicated diverticulitis but pyogenic spondylodiscitis is seen as loss of definition and irregularity of the vertebral bony end plates, osteolysis, and loss of disc height and paraspinal shadows in cases of coexisting psoas abscess. The index patient did not show classic features on lumbosacral x ray.

Computed tomography (CT) scan of the abdomen is considered the best imaging method to confirm the presence of diverticula and assess for complications. Currently, Multidetector Computed tomography (MDCT) of the abdomen is often the diagnostic test of choice, especially in the urgent assessment of patients with AD, with sensitivity, specificity, and positive and negative predictive values all well greater than 95% [12].

The commonest signs of diverticulitis seen on CT imaging include mural thickening, peridiverticular fat stranding, thickening of the surrounding fascia and presence of free fluid. Fistulae, sinuses and intrabdominal abscesses are also well delineated on CT.

Using the CT classification system developed by Ambrosetti et al, disease severity can be predicted by the presence of abscess cavities and extracolonic air or contrast [13].

CT scanning provides guidance for interventional procedures such as drainage of abscess collection. It is advantageous in the diagnosis of vertebral osteomyelitis as well as paravertebral and epidural abscesses [14].

Published reports show Magnetic resonance imaging (MRI) sensitivity of 86 to 94% and specificity of 88 to 92% in the diagnosis of diverticulitis [15]. MRI findings are similar to those described with CT.

3.2 Classification of Diverticulitis

Few classifications have evolved over the years. Hinchey's classification of acute diverticulitis is based on clinical and surgical finding and included: a phlegmon (stage IA), localized abscesses (stages IB and II), free perforation with purulent (stage III) or feculent peritonitis (stage IV) [16].

The introduction of CT with its additional information led to further modifications. Sher et al. introduced the first modification which included distinguishing between pericolic abscesses (stage I), distant abscesses amenable for percutaneous drainage (stage IIa), and complex abscesses associated with a possible fistula (stage IIb) [17].

The classifications with their individual limitations paid attention to different aspects of diverticular disease including clinical symptoms and imaging findings.

Other classifications by Wasvary et al. [18], Kaiser et al. [19] and Siewert et al. [20] took into consideration the presence of distant intra-abdominal or retroperitoneal abscess.

None of these classifications included distant hematogenous spread to the spine and the consequent paravertebral and epidural abscesses.

Our patient had complicated disease with intra-abdominal and retroperitoneal abscesses complicated by lumbar spondylodiscitis, bilateral psoas abscesses and localized epidural abscess.

Although the iliopsoas compartment serves as a conduit for diseases in view of its close relation to the retroperitoneal space, CT findings in our patient showed that there was no obvious breach of the retroperitoneal fascial plane lending credence to hematogenous spread.

The nonspecific nature of the presenting complaints and poor index of suspicion on the part of the physician likely accounted for the initial misdiagnosis and eventual late diagnosis of the patient. Financial constraint also played a major role since the index patient could only have a CT scan done 21/2 months after initial presentation.

4. CONCLUSION

This case demonstrates the challenge of early diagnosis and highlights the need for vigilance on the part of the physicians to recognize signs and symptoms of diverticulitis. The study also suggests the need for modifications of existing classifications to include hematogenous spread of infective focus to the disc and paravertebral tissues with epidural extension.

CONSENT

As per university standard, consent was obtained collected and preserved by the authors.

ETHICAL APPROVAL

The investigation and research work received ethical approval.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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