

Non Tubercular Mycobacterial Pelvic Abscess in Young Male: A Rare Case Scenario

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Abstract: Pelvic abscess is considered as one of the terminal complication of intra-abdominal or pelvic pathology which is extremely rare in male patients.¹ This is a case report of intra-abdominal pelvic abscess in a male patient with unknown source and suspected atypical mycobacterial etiology. A 25 year old male chronic alcoholic presented with lower abdominal pain and distension for two weeks duration associated with on-off diarrhea, with no history of weight loss or anorexia. On examination, patient was hemodynamically stable and on per abdominal examination, there was a palpable supra pubic swelling associated with tenderness reaching upto umbilicus which was present even after catheterisation. Ultrasound showed pelvic collection which was confirmed to be pelvic abscess by CECT abdomen. Percutaneous drainage under ultrasound guidance was done and around 300ml of frank pus was drained out. Culture reports showed direct smear AFB positive even though no AFB growth was seen. Patient recovered uneventfully and was discharged with advice for regular follow up.

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I. Introduction

Intra-abdominal abscesses are the collection of pus walled off by inflammatory cells and is classified into intraperitoneal, retroperitoneal, or visceral depending on the location. Most common cause of intra-abdominal abscesses is perforation of a hollow viscus or colonic cancer.²

Other causes include, as the complication of appendicular abscess, diverticulitis, abdominal TB, Crohn's disease, pancreatitis, pelvic inflammatory disease, or indeed any condition causing generalized peritonitis.³

Pelvic abscess is commonly caused by bowel flora or polymicrobial, frequently aerobic gram-negative bacilli like *Escherichia coli* or *Klebsiella* and anaerobes (especially *Bacteroides fragilis*).²

One of the rare causative agents for pelvic abscess is non tubercular mycobacteria (NTM). When standard bacterial culture results turn out to be sterile, mycobacteria as source of infection should be looked into.¹

Here we are reporting a rare case of Pelvic abscess in an immunocompetent young male patient due to NTM without any specific source.

II. Case Report

A 25 year old male, presented to the emergency department with complaints of lower abdominal distension of 2 weeks duration which was gradually increasing and associated with pain since last 5 days with history of diarrhoea on and off since last 2 weeks, neither associated with fever nor dysuria. On taking detailed history, patient was found to be a chronic alcohol user and there was no history of weight loss, tuberculosis or TB contact. Clinical examination was unremarkable except for a large suprapubic mass extending upto umbilicus which was tender on palpation both per abdominally and per rectally.

Base line investigations including chest x-ray was unremarkable except for raised coagulation profile which was treated by vitamin k injection. Viral markers were negative. Ultrasound of whole abdomen revealed a well delineated cystic lesion of volume 490ml with uniform internal echoes suggestive of pelvic abscess. CECT of abdomen confirmed the lesion as a well defined thick walled collection in rectovesical pouch with mixed attenuating content with air foci and intense enhancement of wall. There was also features of adjacent fat stranding, multiple subcentimetric mesenteric lymphnodes with homogenous enhancement. No obvious source of abscess or any other pathology detected on the CT.

Abscess was drained under USG guidance using a pigtail catheter and pus was sent for bacterial, fungal and mycobacterial cultures. Gram stain revealed gram positive cocci in short chains but bacterial culture turned out to be sterile. Fungal stain and culture was also negative. AFB stain and CB-NAAT for mycobacteria was negative however Mantoux test was positive. AFB culture revealed AFB seen from direct smear but no growth seen after 6 weeks of culture.

Patient improved symptomatically and the pigtail catheter was removed on 3rd day after repeat ultrasound revealed no significant collection.

III. Discussion

An abscess is a collection of infected pus or fluid, which is walled off by inflammatory tissue. An intraabdominal abscess like pelvic abscess most commonly follows acute appendicitis, or gynecological infections or following gynaecological procedures. In males the pelvic collection is usually located between the bladder and the rectum in the recto vesical pouch.¹

According to *Desai et al*, Pelvic abscess can be divided into primary or secondary on the basis of underlying etiology. Primary pelvic abscesses are those occurring de novo without any antecedent local pelvic pathology, while secondary abscess occur due to coexisting or underlying local pelvic inflammatory or infectious etiology.⁴

Primary pelvic abscess is more common in females while rarely reported in males due to tubercular or non tubercular etiology. Formation of significant amount of abscess in an immunocompetent young male without definitive source and constitutional symptoms is a rare case and should be looked into. In this case, three consecutive samples of drained abscess for Pus culture and sensitivity of the patient were sterile as well as CB-NAAT for MTB was negative. Later on AFB culture revealed direct smear AFB present but culture after 6 weeks showed no growth of mycobacteria assuming that the causative organism might be atypical mycobacteria.

As per updated guidelines of U.S *morbidity and mortality weekly report* (MMWR), Non tubercularMycobacterial (NTM) is a very rare cause of infection.⁵ According to the studies by *Saugat et al*, NTM are responsible for skin and soft tissue infections. The most common organisms found in NTM infections included *Mycobacterium fortuitum*, *M. avium*, *M. abscessus*, and less commonly, *M. chelonae*, but pelvic abscess due to NTM is very unusual.²

For diagnosis of suspected pelvic abscesses, CT of the abdomen and pelvis with oral contrast is the preferred diagnostic modality as it helps in locating the potential source of abscess.² We did an ultrasound of abdomen as initial screening tool and for the definitive diagnosis CECT of abdomen and pelvis was done.

Beng Kwang et al suggest that, for the isolation of aetiological agent conventional laboratory tests such as AFB smear, BACTEC, Lowenstein-Jensen culture can be used but often with delay in results. Molecular testing with PCR has been shown to be a useful adjunct to identify the causative agent like mycobacteria with better sensitivity which takes long time to grow in cultures.⁶ In our case due to the non availability of PCR, exact species of atypical mycobacteria could not be confirmed but tubercular etiology was ruled out by CB-NAAT.

Benigno et al describes triple antibiotic therapy for patients diagnosed with pelvic abscess considering aerobic and anerobic spectrum of bacteria as causative agent. In case of pelvis abscess not responding to medical therapy, posterior colpotomy in female and trans rectal drainage in male is preferred over laparotomy. Significant pelvic abscesses of large volume can be drained percutaneously under sonological guidance and good antibiotic coverage.³ Our patient was initially started on combination of injectable antibiotics (ofloxacin+ornidazole) and was drained percutaneously due to the large volume of collection.

Brown et al recommends ultrasonography, CT, and fluoroscopy as the imaging modalities for the percutaneous drainage of abscess.⁷ The choice of image guidance is individualized for each case based on abscess location, patient factors, operator experience and preference, and equipment availability. In our case, since the abscess was well walled off and reaching upto umbilicus, percutaneous drainage under ultrasound guidance was done.

Removal of drainage catheter may be considered when the patient clinically improved and no longer febrile, and catheter output has decreased to <5 to 10 ml/day.

Ansari et al describes complications of pelvic abscess including extension to contiguous structures, erosion into adjacent vessels (causing hemorrhage or thrombosis), rupture into the peritoneum or bowel, or form a cutaneous or genitourinary fistula.² Since the patient in our case was promptly diagnosed and collection was drained immediately, none of the above described complications occurred in our case.

IV. Conclusion

Pelvic abscess in an immunocompetent young male due to NTM without any obvious source is very rare. Possibility of NTM infection should be kept in mind especially when routine culture and sensitivity is negative and appropriate diagnostic measures to be taken. Treatment with drainage under antibiotic cover usually is successful.

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Fig-1: USG of pelvis showing pelvic abscess



Fig 2: CECT abdomen showing pelvic abscess and foley's bulb in urinary bladder