

Sp29: Do all psoas abscesses need to be drained? What are the indications for CT guided drainage, pig-tail catheter or open drainage of psoas abscess?

Siddharth Aiyer, Jay Dalton, Cristiano Menezes, Gregory Schroeder, Nick Shamie

Recommendation: Based on available data, not all psoas require drainage, particularly if they are less than 3 cm; medical therapy with suitable antibiotics may be explored. Psoas abscesses bigger than 3 cm may benefit from percutaneous continuous drainage utilizing a USG/CT-guided catheter and antibiotic irrigation solutions. Open drainage is reserved for psoas abscess accompanied with substantial spinal instability, neurological disability, extensive vertebral damage, and concurrent intra-abdominal/retroperitoneal disease requiring surgical therapy.

Level of evidence: Low

Delegate Vote:

Rationale: Psoas abscess has demonstrated a changing and varied etiology including Mycobacterium tuberculosis and numerous pyogenic bacteria. (1) The diagnosis is often delayed due to the nonspecific nature of symptoms. The diagnostic approach and treatment rely on the identification and confirmation of the causative microorganism. Psoas abscess can be classified as primary and secondary in nature. The primary psoas abscess is a result of hematogenous spread and is frequently associated with immunosuppressed states such as diabetes mellitus, chronic renal failure, chronic liver disease, chemotherapy and HIV infection. (2) Secondary psoas abscess results from local extension from infective focus from adjacent structures including the vertebral body, gastrointestinal tract and genitourinary infections. The most common conditions leading to secondary psoas abscess are spondylodiscitis, Crohn's disease, appendicitis, and pyelonephritis. (3,4)

Primary psoas abscess is commonly caused by Staphylococcus aureus while the secondary psoas abscess is commonly caused by microorganisms such as Mycobacterium tuberculosis, Streptococcus agalactiae, Escherichia coli and Klebsiella species. Tuberculosis infection of the spine can be associated with psoas abscess in 60-75 % patients. (5)

The need for drainage of the psoas abscess depends on numerous factors, which include size of abscess, identification of causative organism, source control of infection to prevent sepsis, coexisting abdominal pathology, severity of spondylodiscitis, and mechanical complications arising due to size and location of the abscess. Management of psoas abscess for pyogenic versus tuberculosis infection may differ with drainage being recommended more aggressively for pyogenic infections to prevent consequent sepsis and mortality. (6)

Pyogenic Psoas Abscess

Pyogenic psoas abscess smaller than 3 cm can be considered suitable for medical management with antibiotics. Pyogenic psoas abscess larger than 3 cm can be considered for drainage. (7,8) Drainage can be performed using ultrasonography guided percutaneous aspiration or continuous percutaneous drainage using catheters placed in the abscess cavity under CT guidance. Solitary abscess cavity can be treated with USG guided percutaneous aspiration with a risk of recurrence in 10-30% of patients. USG guided aspiration needs the presence of a suitable sonographic window for treatment and has the benefit of no associated radiation. Baloch et al. studied 40 patients of psoas abscess treated with USG guided aspiration, in which 30% of patients showed recurrences and needed a second attempt of USG guided aspiration, and 7.5% of patients showed persistence of abscess even after 2 weeks of aspiration. (5)

CT guided percutaneous continuous drainage can allow for better resolution of the abscess. CT scans give a more accurate assessment of the abscess dimensions, location and proximity to other surrounding structures. (9) Percutaneous continuous drainage has lower risk for recurrence and supplemental irrigation with saline or antibiotic solutions can be considered. Zhou Y et al. studied 109 patients with and without continuous chemotherapy and abscess drainage. They concluded that local continuous chemotherapy and postural drainage effectively eliminated infective foci caused by abscess remnants and accelerated interbody bone fusion in patients with lumbar spinal tuberculosis. (10) CT-guided percutaneous continuous drainage has a few disadvantages that include the radiation associated with the CT scan for the procedure for catheter insertion, the need for reinsertion of the catheter in some instances of catheter dislodgement, and catheter blockages.

Open drainage of pyogenic psoas abscess may be required in some instances when the coexisting abdominal pathology such as Crohn's disease, appendicitis or genitourinary infection needs surgical management. This form of open drainage may be performed using anterior or retroperitoneal approaches. (11)

Tuberculous psoas abscess

Psoas abscess is commonly seen with tuberculous spondylodiscitis in endemic areas. Patients presenting with spinal instability, epidural abscess, neural compression with neurological deficit, vertebral destruction and failed conservative management can be considered candidates for open debridement and abscess drainage. Ibrahim et. al. reported on 28 patients of psoas abscess that were treated with a minimal invasive transverse process osteotomy performed using a Wiltse paraspinal approach for psoas abscess drainage with successful outcomes. (1)

Small abscess with early tuberculous spondylodiscitis can be treated with appropriate anti tubercular chemotherapy without the need for abscess drainage. Fei Ye et al. in a study of 74 patients concluded that percutaneous continuous drainage should be avoided for psoas abscesses with numerous locations, caseous necrosis without liquefaction or small abscesses under 3 cm. (8) Larger tuberculous psoas abscess causing mechanical symptoms, size larger than 3 cm and abscesses that have tracked to superficial locations can be subjected to percutaneous continuous drainage with CT guided drainage catheter placement.

Dave et al. reported on 29 patients treated with percutaneous continuous drainage of large psoas abscess more than 5 cm in size using a clinical technique for catheter insertion over a guidewire using preoperative MRI images with satisfactory outcomes. (4) Zhen Lai et al. showed that preoperative CT-guided percutaneous drainage helps to increase the efficacy of antituberculosis therapy before surgery, reduce surgical trauma, and avoid postoperative complications, making it a safe and feasible treatment option for lumbar spinal tuberculosis with psoas abscess. (12) Tuberculous psoas abscess with percutaneous continuous drainage may need catheters to be retained for a period of 2-4 weeks with supplemental antibiotic irrigation, which leads to good resolution and low incidence of recurrence and sinus tract formation.

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