PSOAS ABSCESS – THE CHANGING TRENDS

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Conflicts of Interest: Nil

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DOI: <https://doi.org/10.32553/ijmsdr.v5i5.791>

Abstract:

Introduction: Psoas abscess (IPA) is an abscess collection in the retroperitoneal space tracking along the psoas major muscle. The microbial etiology of Psoas abscess is variable and depends on the geographical area. This study attempts to evaluate the microbial etiology, its implication in deciding the management modalities, and outcomes in patients with Psoas abscess from a tertiary care center in South India.

Materials and Methods: This was a retrospective study done in a tertiary care center in Southern India.

Results: A total of 47 patients were enrolled in the study, with causative organism identified in 40 (85.15%) patients. In 17 patients (36.17%), it was found to be tuberculous origin; and of nontuberculous origin in 23 patients (48.93%). No causative organism could not be isolated in 7 patients (14.89%). While 33 patients were treated with percutaneous drainage (70.12%), open drainage was done in 14 patients (29.78%) and 1 patient died (2.12%).

Conclusion: The most common causative organism of psoas abscess is found to be of nontuberculous origin and PCD was found to be better modality of treatment. Empirical administration of anti-tuberculous drugs needs further evaluation.

Key words: psoas, retroperitoneal, retrospective, tuberculous, drainage, empirical

Introduction:

Psoas major, a primary hip flexor and a muscle of extraperitoneal compartment lies on either side of lumbar vertebral column and pelvic brim. It arises as five digitations from anterior surface and lower borders of transverse process of T12 to L5¹.

Due to its rich blood supply from lumbar, ilio-lumbar, obturator, external iliac and common femoral arteries Iliopsoas abscess (IPA) can result from hematogenous spread². Also its close proximity to many intra-abdominal organs predisposes to hematogenous spread.

Historically, it was mainly due to Mycobacterium tuberculosis (MTB) from Pott's spine⁴. With the decline of MTB as a major pathogen, psoas abscess was mostly found secondary to direct

spread of infection from inflamed gastrointestinal or genito-urinary organ (with or without perforation). In the immunocompromised and elderly, in recent years it is often due to hematogenous spread from an occult source⁵.

Materials and Methods

Being a retrospective observational study, medical records of patients above 14 years of age, admitted in surgical and medical wards from May 2018 to April 2021 were analysed. All patients confirmed radiologically with Computed Tomography as a case of IPA were included in the study, having been approved by institutional ethics committee.

Results

A total of 47 patients were included in the study.

The causative organism was isolated in 40 patients (85.10%), of which MTB was isolated in 17 patients (36.1%) and nontuberculous organisms was isolated in 23 patients (48.9%). Amongst the non-tuberculous organisms, *Staphylococcus aureus* was isolated in majority of

9 patients (19.1%), followed by *Escherichia coli* in 7 patients (14.9%). The other isolates were *Klebsiella* in 4 patients (8.5%), *Streptococcus pyogenes* in 2 patients (4.2%) and *Pseudomonas* in 1 patient (2.1%). Sterile cultures were obtained in 7 patients (14.9%). [Table 1]

Table 1: Causative organism

ISOLATES	NUMBER	FREQUENCY (%)
<i>Mycobacterium tuberculosis</i>	17	36.1
Non-tuberculous	23	48.9
1) <i>Staphylococcus aureus</i>	9	19.1
2) <i>Escherichia coli</i>	7	15
3) <i>Klebsiella</i>	4	8.5
4) <i>Streptococcus pyogenes</i>	2	4.3
5) <i>Klebsiella</i>	1	2
None	7	15%

In the study group, 33 patients (70.1%) were treated with percutaneous drainage (PCD), amongst whom 1 required open surgical drainage due to inadequate resolution. Open drainage was done in 14 patients (29.8%), which was observed to be needed more in abscess of tuberculous

etiology (23.4%). ATT was started for 19 amongst the study population, empirically for 2 based on judgement of treating physician. 1 patient expired due to septicemia (2.1%) from late presentation. [Table 2]

Table 2: Interventional modality

TECHNIQUE	NUMBER	FREQUENCY (%)
Open drainage	14	29.8
MTB	11	23.4
Non-tuberculous	3	6.4
Percutaneous drainage	33	70.2
MTB	6	12.8
Non-tuberculous	27	57.4

Discussion

Psoas abscess has been considered a rare disease with a quoted incidence of 0.4 per 1,00,000; however with an increased incidence in recent years ⁶. Herman Mynter first described IPA in

1881 as Psoitis ⁹. Abscess collection in retroperitoneal space tracks down along psoas major muscle and peritoneal cavity is never almost involved. Psoas abscess occurs commonly in the fifth decade with a slight male

predominance¹. IPA can be primary or secondary. Primary IPA spreads from a distant site by hematogenous or lymphatic route; while secondary is due to contiguous spread³. The classical triad of presentation is back pain, fever and limp is known as Psoas-Muscle sign. Other symptoms being abdominal pain, lassitude, watery stools and nausea. A swelling may point as it tracks along iliopsoas. Pain may be elicited by passive extension of hip and also cross-fluctuation¹³.

A six year hospital based study in Taiwan has shown that the most common organism to be isolated in psoas abscess as *Staphylococcus aureus* followed by streptococcus⁵. And out of 88 patients enrolled in their study only 1 pus culture was found to be positive for tuberculosis; this being similar to our study result with nontuberculous organisms found to be the most common cause (48.93%) of which *Staphylococcus aureus* was the most isolated. Similarly, a study on 124 patients in Spain has shown the most common cause of psoas abscess to be *Staphylococcus aureus* and MTB to be only the fourth most common organism¹². However, a study in south India has stated MTB to be the common cause of psoas abscess and culture negative patients had a high chance of being treated with empirical ATT¹.

PCD has been recommended in the treatment of psoas abscess in recent years. The only definitive indication for an open drainage is infection with gas forming organism. In our study, 33 patients were treated with PCD (70.12%) and one (3%) of them required a further open drainage. The recurrence rates in other series have been 14% to 29%^{7,8}. The indications for open drainage are: PCD failure, clotting disorders, concomitant intra-abdominal pathology warranting surgery. Patients with secondary infection require treatment of primary condition, with adequate drainage and appropriate antibiotics according to cultures for 3-4 weeks. Appropriate ATT regimen is to be followed for tuberculous etiology¹⁰. In our study, 29.8% of the study cohorts was treated with open drainage which approximates the study by Aboobakar *et al*¹¹.

In our study mortality rate was only 2.12%, which was much lower compared with study from Taiwan.

Conclusion

With shift in outlook from RNTCP to NTEP, and also from our study the changing trends in the microbial etiology to be predominantly of non-tuberculous origin in IPA even in developing countries is evident. Also PCD has revolutionised the management of Iliopsoas abscess with a favourable outcome; thus eliminating the need for morbid open surgical procedures. This study highlights the need for large-volume prospective studies to further investigate the need for empirical ATT for patients with psoas abscess in this era of TB elimination.

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