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Research Article

Management of Cases of Psoas Abscesses at Small Rural Hospital of Developing Country

Bhamar Lal*

Department, Urology, University Organisation, District Head Quarter Hospital Mithi, Tharparkar, Sindh, Pakistan

***Corresponding Author:** Bhamar Lal, Department, Urology, University Organisation, District Head Quarter Hospital Mithi, Tharparkar, Sindh, Pakistan.

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Abstract

Background: District Tharparkar is one of the most deprived regions of Pakistan, where health facilities are very poor i.e. consultants, radiologists, pathologists, surgical facilities, and early diagnosis and treatment facilities are not present. So most surgical patients are presented with advanced diseases and mortality rate is very high.

Objective: Describe the etiological factors, clinical presentation and management of iliopsoas abscess.

Study Design: Descriptive.

Setting: District Headquarter Hospital Mithi.

Duration: June 2009 to June 2012.

Keywords: *Management of Cases; Small Rural Hospital; Developing Country*

Introduction

A psoas abscess is an abscess in one of the psoas muscles which extends from the lower spine into the groin. Primary psoas abscesses occurs when bacteria such as Staph bacteria get into the muscle, creating an area of inflammation and infection and pus collection. Secondary psoas abscesses occurs when infection elsewhere in body spreads to the psoasmuscle. Historically it was commonly seen in patients with spinal tuberculosis also known as Potts' disease. Mycobacterium tuberculosis is endemic in South Asia and can present in several unusual ways [1]. It is known that tuberculosis psoas abscesses are usually secondary to vertebral involvement [2]. It may also be associated with infections of bowel or kidney. Abscess of the iliopsoas results most commonly from osseous sources, such as the spine, ileum and the sacroiliac joint.

Psoas muscle originates from the lateral borders of the 12^{th} thoracic to 5^{th} lumber vertebra in the retroperitoneal space and inserts at lesser trochanter of the femur. In 70% of peoples it is a single structure known as the psoas muscle, but in 30% have the psoas minor that lies anterior to the major [3]. Psoas muscle is surrounded by a rich venous plexus which could explain its predisposition to infection from haematogenous spread [4].

Etiology of primary psoas abscess remains uncertain. Current literature suggest that it results from either haematogenous spread from occult infection or local trauma with resultant intramuscular hematoma formation, which predisposes to abscess formation [5]. Primary psoas abscess occurs most commonly in patients with a history of diabetes, injection drug abuse, alcoholism, AIDS, renal failure, hematologic malignancy, immunosuppression or malnutrition. Additional risk factors include age under 20 years, male (3:1 predominance) endemic tuberculosis, and low sciocoeconomic conditions [6]. Secondary psoas abscesses is often caused by a mixed flora of enteric bacteria commonly E. coli and bacterioid [7]. Mycobacterium tuberculosis infection of the spine is the most frequent cause of secondary psoas abscess in developing countries [8]. Mycobacterium tuberculosis with secondary vertebral osteomyelitis is a common cause of psoas abscess in countries where TB is prevalent [9]. About 5% of patients with vertebral tuberculosis develop psoas abscess [10].

Iliopsoas abscess may initially present with symptoms and signs in buttock, hip or thigh. Such symptoms and signs may be obscure, nonspecific and misleading. The abscess may be overlooked given the deep location of the iliopsoas muscle [11]. The classic triad of pain, fever and lump described by Mynter in1881 [12], is atypical and rarely seen [13]. Psoas abscess may present as a lump in the groin and resembles a hernia. The condition may be confused with a femoral hernia or enlarged inguinal lymph nodes [14]. Iliopsoas abscess is best detected through use of computed tomography (CT), which defines its path way and allows for appropriate surgical treatment [15].

Material and Methods

All patients' data collected from OPD, ER, and wards of district head quarter hospital Mithi Tharparker from June 2009 to June 2012. Data was collected regarding age, sex, address, socioeconomic status, clinical presentation includes early, late or complicated psoas abscess. All patients assisted clinically followed by routine investigations CBP, ESR, urine analysis, ultrasound abdomen and pelvis, X- ray KUB, chest, lumbo-sacral spine. All patients have open (incision and drainage) surgical intervention done on clinical and early investigations basis and tissue or pus sent for final diagnosis. Postoperative medical treatment (antituberculous therapy) was advised on final diagnosis and placed on regular follow up for wound care and response of medical therapy and antituberculous therapy.

Results

Iliopsoas abscesses diagnosed in 17 patients, 12 were females and 5 were males of 17, during the study period from June 2009 to June 2012. All patients belong to District Tharparkar endemic zone of tuberculosis and most deprived region of Pakistan. Mean age was 42 years (range: 12 to 70 years). All patients were villagers, malnourished, and belong to poor families. Fifty-five percent of patients have history of pulmonary tuberculosis in their families. All patients presented with advanced disease of classic Mynter triad: fever, back/lumber pain and lump. Low grade fever, malaise, backache, anorexia and weight loss was in 15 patients since 6 months to one year. While two patients had short history of acute illness, high grade fever and pain since one to two months. Two patients presented with spontaneous rupture of abscess with discharging pus (Figure 1). Site of lump was in lumber region 04, inguinal region or groin 8, both lumber and groin 03 (Figure 2,3 and 6). Fifteen patients presented as cold abscess and two acute abscesses (figure 4). In patients having acute abscess had walking difficulty and flexed hip.

Figure 1: *Patients Presented With Burst Of Psoas Abscesses.*

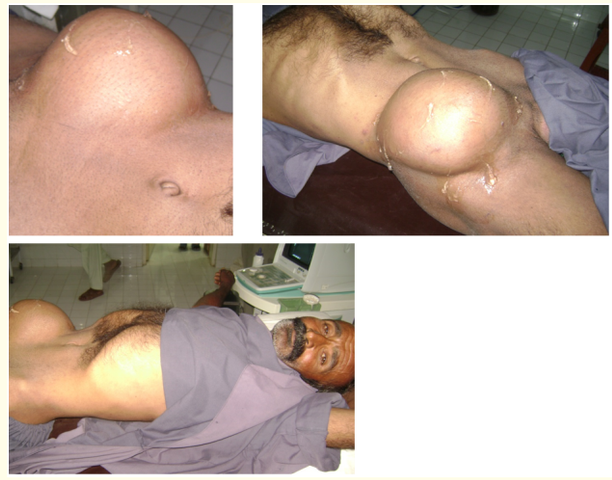

Figure 2: *Huge Psoas Abscess Involving The Four Quadrant Of Abdomen.*

Figure 3: *Same Patient After Treatment.*

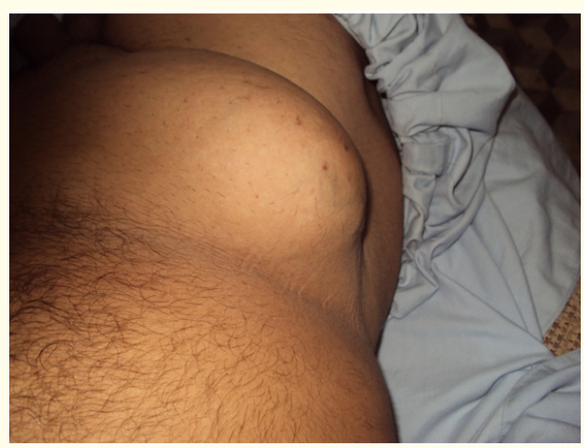

Figure 4: *Cold abscess.*

Figure 5: *Acute Abscess.*

Figure 5: *During Treatment Phase.*

On local examination two patients have tender, hot, with shiny skin over swelling suggestive of acute inflammation. The rest 15 patients had non tender, cold masses with normal overlying skin typical appearance of cold abscess, whichhad no gait problem or hip flexation. The two of those rest 15 patients had very huge abscesses involving four quadrants of abdomen and, burst abscesses.

Variable	No of patients	Percentage
Low grade fever	14	82.35%
High grade fever	02	11.7%
Backache or lumber pain	17	100%
Weight loss	13	76.4%
Visible lump/mass	15	88.2%
Burst abscess	02	11.7%

Table 1: *Clinical Presentation.*

Location	Acute/cold	No of patients	Percentage
lump in groin	Cold	08	47.05%
Lumber	Cold	04	23.5%
Lump in both lumber and lower abdomen/groin	Acute (2) cold (1)	03	17.6%
Ruptured abscesses in lumber region	Cold	02	11.7%

Table 2: *Local Examination of Lump.*

Investigations	Result	No patients	%
CBP TLC	1500- 20000	02	11.7%
ESR	80- 100	17	100%
Urine analysis	Pyuria/hematuria	04	23.5%
Pus for AFB	Positive	09	52.9%
Tissue for histopathology	Granulomatous inflammation	03	17.6%
Bony lesions in x-ray spine	Positive	01	5.8%
Tuberculosis in chest x- ray	Positive	01	5.8%

Table 3: *Investigations.*

All these patients received treatment (antibiotics) from GPs at different times but no response to symptoms. The two of 17 had short history of acute illness. One young female had history normal vaginal delivery at home with puerperal sepsis one month ago presented with acute hot tender abscess in groin (Figure 04), other 12 year old boy had history of typhoid fever two months ago, presented with same type of abscess in groin. In investigations CBP shows high TLC more than 20000 in two patients, severe anemia (Hb < 6 gm) in 8 patients. Raised ESR >100 in all patients. Two patients had pyuria, hamaturia. Renal function was normal in all patients. Ultrasound abdomen and pelvis was done in all patients. Fluid confirmed in cavity in lumber or groin region with internal echoes suggestive of pus.

Ultrasound also shows residual collection of pus in cases of burst abscesses. X- Ray spine and chest X-ray done in all patients and was normal in 16 patients and one patient had bony changes in lumber spines with simentenously pulmonary tuberculosis in chest x-ray with lower limb weakness.

All patients had open surgical drainage of pus, debridement of dead cavity tissue and proper drainage of residual pus in burst abscess. Wound was partially closed and pack was placed in 3 patients because pus along cavity had been removed. In others wound was left open for daily dressing and packing to avoid recollection of pus. Pus sended for AFB and was positive in 9 (52.9%) patients. Tissue from cavity sent for histopathology shows granulomatous inflammation in three (17.6%) patients. Broad spectrum antibiotics in all patients for one week followed by complete 9 months course of Anti Tuberculosis Therapy in cases diagnosed as tuberculosis. 11.6% (2) patients diagnosed as primary psoas abscess and recovered with broad spectrum antibiotics for 2 - 4 weeks. 17.6% (3) had started ATT empirically on clinical grounds shows good response to ATT. The standard ATT regimen was four drugs ionized, 15 mg/kg, rifampicin 15 mg/kg, ethambutol15-25 mg/kg and pyrazinamide 15 - 3o mg/kg. All drugs was provided by government at District Headquarter Hospital Mithi at monthly follow up visits. In cases of primary psoas abscess wound healing occurs in 2 - 4 weeks (figure 5), while wound healing in tuberculosis psoas abscess takes 6 weeks to 3 months (Figure 6).

Discussion

This study agrees with Tabrizian., *et al* [13] that iliopsoas abscess with classic Mynter [12] triad (pain, fever, lump) is rarely seen. However of all our patients had been diagnosed clinically with Mynter triad and even with worst presentation with ruptured abscess with pus discharging sinuses. Our study seems to be the largest study of typical Mynter triad of this era.

Historically tuberculosis was the most common cause of iliopsoas abscesses in the developed world [16]. However the cause of iliopsoas abscess is changing, and almost three quarter of iliopsoas are due to haematogenous spread [17]. While in our study tuberculosis is still very common cause in 15 out of 17 patients, only two patients have haematogenous spread. Tabrizian., *et al* [13] reported mean age 53 years, in our cases mean age was 45 years hence more common in younger patients. In our study male to female ratio is 3:14 and doesn't matches with internationally reported in literature [5,13], but it matches with study of same country Abbas., *et al* [18] which shows highest ratio of spine tuberculosis in female (12:3.6, F:M). According to the Global Tuberculosis control WHO report Pakistan is one of the hundred countries with highest cases of tuberculosis, as inferred by figure of 150 pakistani patients per 100000 new cases in 2010. This high incidence is due to number of factors like low socioeconomic conditions, overcrowding, multidrug resistance and noncompliance of patients for ATT [18]. In our patients poor sciocoeconomic condition, malnutrition, poverty, endemic tuberculosis [14] were the main etiologic risk factors as described by Isdale., *et al* [6]. In our study additional risk factors are Poor health facilities and nonavailibity of consultants, diagnostic (CT, MRI) facilities, poverty with difficult assess to far distance (400 km – 800 km) tertiary care hospitals are the main factors of such advanced iliopsoas abscesses in this particular deprived region of Pakistan.

In developing countries tuberculosis spine (Potts disease) is considered the most common cause of psoas abscess [19]. Chawla., *et al* [20] about 5% cases of Potts disease develop psoas abscess. However in our study 15 of 17 developed psoas abscess. Berge., *et al* [21] patients usually (35%) present with triad of symptoms flank or back pain, limitations of hip movements and fever. In our series all patients with symptoms and signs of advanced disease like lump, pain and fever. Psoas abscess are difficult to diagnose, a through medical history of patient and good physical examination are critical for prompt diagnosis of psoas abscess [15]. CT/MRI are considered to be gold standard [19], while ultrasonography is diagnostic in 60% of psoas abscess cases [15]. In our study diagnosis made on clinical grounds and ultrasonography and further diagnosis was confirmed by microbiological and histopathological reports of drained pus and tissue. We did X-ray lumbo/sacral spine in all patients of psoas abscess but bony changes seen in only one patient, which have also lower limb weakness'-ray spinal may be normal in early disease, because 50% of the bone mass must be lost for changes to be visible on X-ray [14].

Laboratory investigations may reveal raised WBC, C-reactive proteins, anemia and ESR [4]. In our patients raised ESR seen in all patients, anemia (Hb < 6 gm) in 07 patients and raised WBC in 5 patients. Mycobacterium tuberculosis is an important pathogen of psoas abscess secondary to vertebral osteomyelitis [22]. Similarly in our study 70% has positive AFB in pus or granulomatous inflammation of derided tissue. Our three patients have negative for AFB but we put on empirical ATT and respond well, as reported by Kirshan., *et al* that adequate response to ATT can also be used to establish diagnosis [23].

In all our patients we did open surgical drainage and debridement and proper drainage of burst psoas abscesses, because all abscesses were large in size. Our decision favors the statement of Baier PK., *et al* [16] that for large, extensive or multiple abscesses Percutaneous drainage may result in recurrence or simply be insufficient. In this situation, open surgical drainage is more appropriate. In three patients wound was partially closed and pack was placed and in rest of patients wound was left open to avoid recollection and for daily dressing with packing. All patients received broad spectrum antibiotics for one week followed by ATT in cases of tuberculosis.

Anti Tuberculosis Therapy advised was four drugs isoniazed 15 mg/kg, rifampicin 15 mg/kg, ethambutol 15-25 mg/kg, pyrazinamide 15 - 30 mg/kg. Pyridoxine was added to regimen prophylactically. The regimen was instituted for three months followed by withdrawal of pyrazinamide for rest of period. Reported mortality rate ranges from 2.4% to 19% for treated patients with primary and secondary abscesses respectively [24]. Our mortality rate is 5.8%.

Follow up

Initially patients called at two weeks interval for wound care till wound heals, healing time ranges 15 days to 3months.Then monthly follow up for ATT issued by TB control Centre D H Q hospital Mithi. History, physical exam, blood CP ESR, X-ray spine, U/S abdomen and pelvis monthly in all patients in initial 3 months to rule out any reoccurrence and assessment of response of ATT. Mean follow up time was 1 year (ranges 9 months-24 months).

Limitations

This study is conducted at rural and remote setup, where there was no facility of early dictation of spine TB or small psoas abscesses. All patients we manage present with huge psoas abscesses, late presentation of spine tuberculosis. This study is vice versa of Abbas., *et al* conducted study at tertiary care urban hospital of same country where early cases of TB spine diagnosed and managed but no sample from rural population.

Bibliography

1. Afzal A., *et al*. "Psoas abscess secondary to Potts' Disease – an unusual presentation". *Journal of Pakistan Medical Association* 56.4 (2006): 191-192.

2. Pombo F., *et al*. "Percutanous catheter drainage of tuberculosis psoas abscesses". *Acta Radiologica* 34 (1993): 366-368.

3. Riyad MN., *et al*. "Pyogenic psoas abscess: discussion of its epidemiology, etiology, bacteriology, diagnosis, treatment and prognosis-case report". *Kuwait Medical Journal* 35 (2003): 44-47.

4. Taiwo B. "Psoas abscess: a primer for the internist". *Southern Medical Journal* 94 (2001): 2-5.

5. Mallick IH., *et al*. "Iliopsoas abscess". *Postgraduate Medical Journal* 80 (2004): 459-462.

6. Isdale AH., *et al*. "Psoas abscess in rheumatoid arthritis-an in perspicuous diagnosis". *British Journal of Rheumatology* 33 (1994): 853-858.

7. Vandenberg M., *et al*. "Psoas abscess: report of series and review of the literature". *The Netherlands Journal of Medicine* 63 (2005): 413-416.

8. Walsh TR., *et al*. "Changing etiology of iliopsoas abscess". *The American Journal of Surgery* 163 (1992): 413-416.

9. Muckley T., *et al*. "Psoas abscess the spine as a primary source of infection". *Spine* 28 (2003): E106-113.

10. Huang JJ., *et al*. "Acute Pyogenic iliopsoas abscess in Taiwan: clinical features,diagnosis,treatment and outcome". *Journal of Infection* 40 (2000): 248-255.

11. Bickels J., *et al*. "Primary pyomyositis. Current concepts review". *The Journal of Bone and Joint Surgery American* 84.12 (2002): 2277-2286.

12. Mynter H. "Acute psoitis. Buffalo". *The Medical-Surgical Journal* 21 (1881): 202-210.

13. Tabrizian P., *et al*. "Management and treatment of Iliopsoas Abscess". *Archives of Surgery* 144.10 (2009): 946-949.

14. Ebraheim NA., *et al*. "Psoas Abscess: A Diagnostic Dilemma". *American Journal of Orthopedics* 37.1 (2008): E11-E13.

15. Bair PK., *et al*. "The iliopsoas abscess: Etiology, therapy, and outcome". *Langenbeck's Archives of Surgery* 391.4 (2006): 411-417.

16. Gruenwald I., *et al*. "Psoas abscess: case report and review of literature". *The Journal of Urology* 147.6 (1992): 1624-1626.

17. Abbas A., *et al*. "Conservative management of spinal tuberculosis: Initial series from". *Pakistan Asian Spine Journal* 7.2 (2013): 73-80.

18. Procaccino JA., *et al*. "Psoas abscess; difficulties encountered". *Colon Rectum* 34 (1991): 784-789.

19. Chawla K., *et al*. "Primary tubercular abscess: a rare presentation". *Journal of Infectious Diseases Citries* 6.1 (2012): 86-88.

20. Berge VM., *et al*. "Psoas abscess: report of a series and review of literature". *The Netherlands Journal of Medicine* 63 (2005): 413-416.

21. Lopez VN., *et al*. "Microbiology and outcome of iliopsoas abscess in 124 patients". *Medicine* 88 (2009): 120-130.

22. Kirshan A., *et al*. "Craniovertebral junction tuberculosis: a review of 29 cases". *Journal of Computer Assisted Tomography* 25 (2001): 171-176.

23. Spelman D. "Psoas abscess". (2010).

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