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Psoas abscess rarely requires surgical intervention

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Abstract

BACKGROUND: Surgeons are increasingly encountering psoas abscesses.

METHODS: We performed a review of 41 adults diagnosed and treated for psoas abscess at a county hospital. Treatment modalities and outcomes were evaluated to develop a contemporary algorithm.

RESULTS: Eighteen patients had a primary psoas abscess, and 23 had a secondary psoas abscess. Patient characteristics were similar in both groups. Intravenous drug abuse was the leading cause of primary abscesses. Secondary abscesses developed most commonly after abdominal surgery. Treatment was via open drainage (3%), computed tomography–guided percutaneous drainage (63%), or antibiotics alone (34%). Four recurrences occurred in the percutaneous group. Statistical analysis showed that the median size of psoas abscesses in the percutaneous group was significantly larger than in the antibiotics group (6 vs 2 cm; $P < .001$). The mortality rate was 3%.

CONCLUSIONS: Initial management of psoas abscesses should be nonsurgical (90% success). Small abscesses may be treated with antibiotics alone, and surgery can be reserved for occasional complicated recurrences.

Historically, an abscess of the psoas muscle was a rare entity.[1] However, with the increased use of computed tomography (CT) scans to evaluate patients with unknown foci of sepsis, psoas abscesses now are diagnosed and reported more frequently. The literature, however, has been inconsistent as to whether open[1–11] or percutaneous drainage[12–24] is more effective. Open drainage is associated with significant morbidity, especially in a septic patient. Percutaneous drainage of other intra-abdominal or retroperitoneal abscesses using CT guidance has become the standard of care. Similarly, the treatment of psoas abscesses has now progressed to less invasive methods. However, the consideration of treatment of smaller abscesses with antibiotics alone is not commonly reported in the literature.

The aim of this study was to evaluate the frequency of nonsurgical treatment of psoas abscesses and the outcome using this approach to develop a treatment algorithm.

Methods

CT scan reports at the Los Angeles County and University of Southern California Medical Center from 2000 to 2006 were screened for the terms "psoas abscess" or "iliopsoas abscess" to identify patients for further review. A

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retrospective chart review then was performed, documenting patient characteristics, clinical presentation, diagnosis, abscess size, microbiology, treatment, and outcome. The local institutional review board approved this review.

A psoas abscess was classified as being primary if the cause was hematogenous spread, or secondary if the cause was an adjacent infectious process. Psoas abscess size was determined by measuring the largest of either the anteroposterior or transverse dimensions on CT scan. Abscesses involving the iliacus in addition to the psoas muscle were included.

Data are presented as median values with ranges. Statistical significance was determined using the Mann-Whitney *U* test and chi-squared tests. A *P* value of less than .05 was used for statistical significance.

Results

Fifty-five patients were identified as having a potential psoas abscess based on CT scan reports. Fourteen patients were excluded because of alternative diagnoses. Of the remaining 41 patients, 18 (44%) were classified as having a primary psoas abscess and 23 (56%) as having a secondary abscess. The median age at diagnosis was 44 years and did not differ between primary and secondary patients (42 vs 47 y, respectively; $P = .65$). The male to female ratio was also similar in the 2 groups (14:4 vs 16:7, respectively; $P = .56$). Intravenous drug abuse was the most common risk factor for a primary abscess (47%). Other risk factors included acquired immune deficiency syndrome (AIDS, 2 patients) and diabetes (2 patients). Recent abdominal or retroperitoneal surgery was the most common source of secondary abscesses (35%). Other sources included spinal and hip infections (26%), spinal tuberculosis (9%), and Crohn's disease (4%). Patient characteristics for those with primary versus secondary abscesses are presented in Table 1.

Bilateral psoas abscesses were diagnosed in 7 of 18 (39%) patients in the primary group and in 5 of 23 (22%) in the secondary group. The median time to diagnosis in all patients was 4 days from admission (range, 0–23 days). The diagnosis was made in less than 24 hours from admission in 8 of 18 (44%) patients with primary abscesses, and in 8 of 23 (35%) patients with secondary abscesses. All patients were treated with antimicrobial therapy. Initial CT-guided percutaneous drainage (PCD) was attempted in 27 patients, 14 of 18 (78%) in the primary group and 13 of 23 (56%) in the secondary group. This was successful in all but 1 patient. One patient with a secondary abscess caused by complicated pyelonephritis required initial surgical drainage. All other patients were treated conservatively with antibiotics alone, 5 of 18 (28%) in the primary group and 9 of 23 (39%) in the secondary group.

Table 1 Characteristics of primary and secondary psoas abscesses

	Primary (n = 18)	Secondary (n = 23)	*P* value
Age y (range)	42 (19–65)	47 (19–73)	.65
Sex (M:F)	14:4	16:7	.56
Risk factors			
IVDA	47%	13%	.04
Bilateral location	39%	17%	.12
Median size, cm (range)	4.7 (2–10)	4.5 (1–10.5)	.51

IVDA = intravenous drug abuse.

Table 2 Microbiology

Cultures obtained	Primary (n = 14/18)	Secondary (n = 17/23)
S aureus	5 (36%)	4 (24%)
Methicillin-resistant *S aureus*	2 (14%)	0
Enteric organisms	0	7 (41%)
C immitis	2 (14%)	0
Mycobacteria		
MAI	1 (7%)	0
M bovis	0	1 (6%)
Other	1 (7%)	0
No growth	3 (21%)	5 (30%)

MAI = Mycobacterium-avium intercellulare.

The median size of the psoas abscess in patients who received PCD was 6 cm (range, 2–10 cm) versus 2 cm (range, 1–6 cm) in those treated with antibiotics alone ($P < .001$). There were no known recurrences in the 14 patients treated with antibiotics alone. Of the 26 patients initially treated with PCD, there were 4 recurrences, 2 in each group. The 2 recurrences in the primary group were both successfully managed nonsurgically. The 2 recurrences in the secondary group both required surgical drainage: one of which was for Crohn's disease and the other for spinal tuberculous infection. Follow-up data were available on 27 of 41 patients. The median follow-up period was 6.3 months (range, .5–61 mo). Fourteen patients had no follow-up data.

Staphylococcus aureus was the most common organism recovered in the primary group (63%), with 2 patients growing methicillin-resistant *S aureus*. Enteric organisms predominated in the secondary group (58%) (Table 2).

The overall median length of stay (LOS) was 29 days (range, 4–158 d). There was no difference in the median LOS between patients treated with PCD and those treated with antibiotics alone, 25.5 days (range, 4–158 d) versus 27 days (range, 7–50 d), respectively ($P = .887$) (Table 3). One death occurred (3%) during the study period as a result of complications of pneumonia in a patient with a primary psoas abscess.

Comments

The paired psoas muscles are retroperitoneal structures that lie posterior to the abdominal endofascia. It is presumed