

Retrofascial pyogenic iliac fossa abscess

20 cases studied by ultrasonography

Anil K. Jain, Sudhir Kumar, Vinod Shiv¹, Hardeep Singh and Surendra Mohan Tuli

Twenty patients with a pyogenic iliac fossa abscess were analyzed. The main clinical signs were fever, limp, pain, and flexion deformity of the hip. Ultrasonography was a reliable diagnostic test.

Department of Orthopedics and ¹Radiology, University College of Medical Sciences, Delhi, India
Correspondence: Dr. Anil K. Jain, 177, Old Arya Nagar, Ghaziabad (U.P.), India. Tel +91-8 721543
Submitted 90-11-24. Accepted 91-08-27

Mynter (1881) reported 2 cases of pyogenic iliac fossa abscess unassociated with sepsis in vertebrae and called it psittitis. Rogers (1911) reported 7 cases and postulated that these abscesses were secondary to infection and suppuration of lumbar retroperitoneal lymph glands. Behrman (1930) reported 4 cases where the diagnosis was missed initially. Bailey (1930) emphasized that the entity should be differentiated from acute appendicitis, acute purulent coxarthrititis, and acute osteomyelitis of the femur. Barney (1944) operated on a patient with a mistaken diagnosis of perinephric abscess. Appendectomies have been performed because of an error in clinical diagnosis in many cases of iliac fossa abscess (Bailey 1930, Zadek 1950, Maull 1974, Oliff 1978). Firor (1972) reported 2 cases in which the initial symptoms and signs suggested hip disease, and the recognition of iliac fossa abscess was delayed.

We report our analysis of 20 patients treated for retrofascial pyogenic iliac fossa abscess.

Patients

Sixty-four patients presenting with fever, limp, pain, and flexion deformity of the hip were analyzed from October 1988 to April 1990 at the University College of Medical Sciences and G.T.B. Hospital Delhi. These patients were examined clinically, and underwent a ultrasonographic examination. On clinical examination, 40 patients had primary hip involvement while 24 patients had a pseudo-hip-flexion deformity due to an iliac fossa abscess. Twenty patients had a pyogenic abscess, whereas 4 other patients had a tubercular abscess, and were not included in the present study.

These patients had a low socioeconomic status and reported for treatment 2-15 days after the onset of symptoms, and they were on antibiotics. All 20

patients underwent a radiographic examination of the spine, pelvis, and hip, and an ultrasonographic examination of the iliac fossa and hip region.

The minimum age of affection was 6 months while the maximum was 45 years (Table 1) with the majority less than 10 years of age.

Table 1. Observations in 20 patients with an iliac fossa abscess

A	B	C	D	E	F	G	H	I
1	18	1	30	1	1	1	-1b	1
2	10	1	90	1	1	1	-2a	1
3	10	2	60	1	1	1	-1b	2
4	6/12	1	50	1	2	1	-1b	1
5	5	1	45	1	2	1	+1b	1
6	4	1	60	1	2	1	-2b	1
7	16	1	40	2	1	1	-1b	2
8	4	1	60	2	1	1	-1b	1
9	18	1	30	1	1	1	-1b	1
10	7	1	70	1	2	1	-2a	1
11	16	1	20	1	1	1	-1b	1
12	5	1	60	2	2	1	-2b	1
13	8	1	50	1	2	1	-1b	1
14	34	2	30	2	1	1	-1b	2
15	10/12	1	60	2	2	1	-1b	1
16	10	1	50	2	1	1	-1b	1
17	45	1	30	1	1	1	+2b	1
18	32	1	40	2	1	1	+2b	1
19	10	1	45	2	1	1	-2b	1
20	5	2	50	1	2	1	-1b	1

A Case

B Age

C Sex

1 male

2 female

D Pseudo-hip flexion deformity in degrees

E Side

1 right

2 left

F Palpable mass per abdomen

1 yes

2 no

G Bimanual iliac crest

pinch test

1 yes

2 no

H Ultrasonographic findings

1 hypoechoic

2 mixed echo pattern

+ internal septae

- no internal septae

a impression on bladder

b no impression on bladder

1 *Staphylococcus aureus*

2 no growth

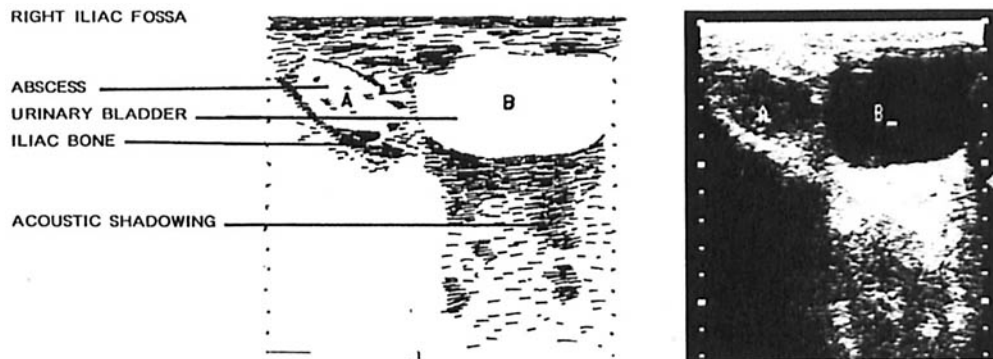


Figure 1. An area of mixed echogenicity with internal echoes is present in the right iliac fossa immediately adjacent to the iliac bone. The abscess is producing an impression on the lateral border of the urinary bladder in Case 10.

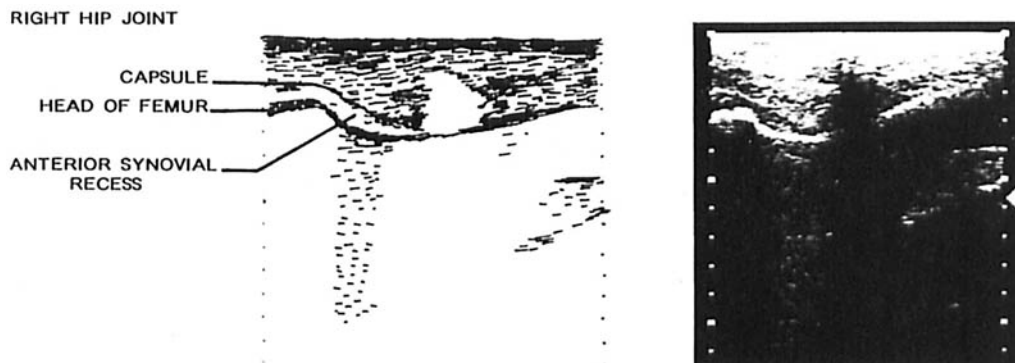


Figure 2. Normal right hip ultrasonogram of Case 10 (Figure 1).

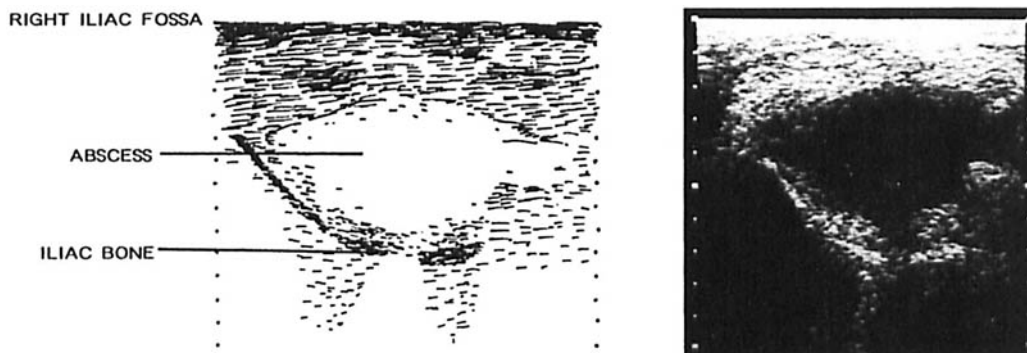


Figure 3. Large hypoechoic area with convex contour in the right iliac fossa with posterior internal echoes (Case 1).

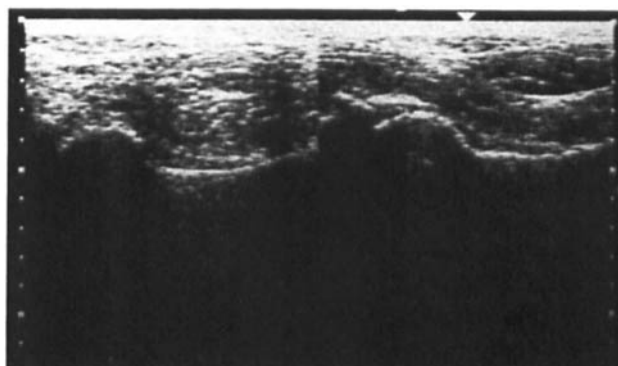
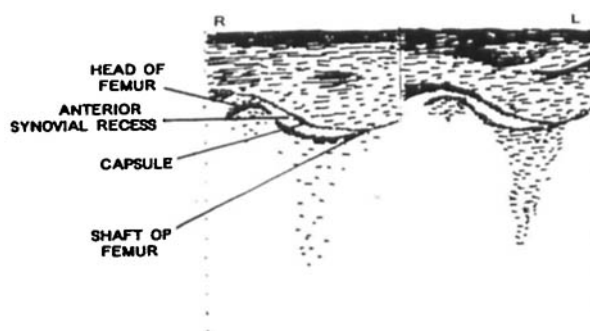
Clinical signs

1. In a patient with primary hip disease, fullness was observed on both sides of the adductor longus tendon near its origin.
2. Patients with an iliac abscess are able to sit cross-legged.
3. The iliac crest can be pinched between the index

finger and thumb in the normal person and in those with primary hip pathology. Pinching cannot be performed in iliac abscess.

We could palpate an abdominal mass in the iliac fossa in 12 patients with a pyogenic iliac abscess. It was almost impossible to palpate an abdominal mass in the children under aged 5 years.

Figure 4. Both hip joints are seen normally in Case 1 (Figure 3).



Ultrasonography

Examination of the lower abdomen and hip was done in all the cases. In the patients with an iliac abscess, a mass was seen anterior to the iliac bone. The mass displayed a convex contour and was separated from the adjacent bowel, which was often peristaltic. An extrinsic impression of an abscess over a distended urinary bladder was seen in 2 patients (Figure 1). The abscesses were hypoechoic in 13 patients and showed a mixed echo pattern in the remaining patients. The wall of the abscess was of variable thickness, and in 3 patients it contained internal septae.

The treatment was the same for each patient: namely, exploration and evacuation of the abscess by a standard incision on the medial lip of the iliac crest. Totally, 10-200 cm³ pus was found among the muscle fasciculi, and a corrugated rubber drain was left in place for drainage. Each patient received cloxacillin i.v. initially, which was later changed depending on the culture and sensitivity of the pus. All the patients had made a full recovery at the follow-up examination, which ranged from 5 to 12 months. *Staphylococcus aureus* was the cultured pathogen in all the patients except in 3 who had negative cultures.

Discussion

Pyogenic iliac fossa abscess is an important clinical entity. The correct diagnosis is often delayed because the initial symptoms and signs commonly suggest primary hip disease. Confusion still prevails in the literature regarding the nomenclature of this entity. It has been described as an acute nonspinal/pyogenic/nontubercular psoas abscess by Zadek (1950), Rockwood et al. (1961), and Hardcastle (1970), and as a nonspinal pyogenic psoas abscess by Sworn (1933), Lam (1966).

Mauil (1974), Oliff (1978), and Faerber et al. (1981) described it as a retroperitoneal iliac fossa abscess. Siddiqui (1983) preferred the term iliacus abscess. The iliacus and psoas muscles are retrofascial; hence, we feel retrofascial pyogenic iliac fossa abscess is the most appropriate term for this entity.

Various explanations concerning the etiology have been suggested: suppurative of lymph glands (Bailey 1930, Rockwood et al. 1961, Mauil 1974, Faerber et al. 1981), trauma (Kark 1961, Siddiqui 1983), gastrointestinal perforations (Hardcastle 1970), and hematogenous spread (Sworn 1933).

The differentiation of an iliac fossa abscess from primary hip disease is important and sometimes diffi-

cult. We strongly point out the importance of pseudo-hip-flexion deformity.

Computed tomography and indium scanning are useful investigations, but are not readily available in general hospitals in developing countries. Ultrasonography has proved to be an effective, noninvasive method for localizing an intraabdominal abscess. It is helpful for differentiating the solid or cystic nature of the abscess, and can also differentiate an abscess from a hematoma (Kaplan and Sanders 1973). We used ultrasonography to localize the abscess and to rule out primary hip pathology (Wingstrand et al. 1987, Kallio et al. 1985, Shiv et al. 1990). Being noninvasive, ultrasonography can be used to monitor the recovery (Faerber et al. 1981, Yousefzadeh 1985).

We conclude that with better awareness of the entity and use of ultrasonography, almost all the cases of retrofascial pyogenic iliac fossa abscess can be diagnosed and treated.

Acknowledgements

The author would like to thank Mr. Kewal Sharma and Mr. Harprasad Singh for technical help and Mrs. Anju Gulati and Computer Net for secretarial help.

References

- Bailey H. Suppurating deep iliac glands. *Practitioner* 1930; 124: 223-30.
- Barney J D. Psoas abscess of pyogenic origin. *New Engl J Med* 1944; 28: 977-81.
- Behrman S. Non-spinous psoas abscess. Four cases at a children's hospital. *Lancet* 1930; 2: 297-8.
- Faerber E N, Leonidas J C, Leape L L. Retroperitoneal iliac abscess with periostitis. *Am J Roentgenol* 1981; 136 (4): 828-9.
- Firor H V. Acute psoas abscess in children. *Clin Pediatr (Phila)* 1972; 11 (4): 228-31.
- Hardcastle J D. Acute non-tuberculous psoas abscess. Report of 10 cases and review of the literature. *Br J Surg* 1970; 57 (2): 103-6.
- Kallio P, Ryöppy S, Jappinen S, Siponmaa A K, Jaaskelainen J, Kunnamo I. Ultrasonography in hip disease in children. *Acta Orthop Scand* 1985; 56 (5): 367-71.
- Kaplan G N, Sanders R C. B Scan ultrasound in the management of patients with occult abdominal hematomas. *J Clin Ultrasound* 1973; 1: 5-13.
- Kark W. Post-traumatic iliac abscess. *South African Med J* 1961; 35: 983-4.
- Lam S F, Hodgson A R. non-spinal pyogenic psoas abscess. *J Bone Joint Surg (Am)* 1966; 48 (5): 867-77.
- Maull K I, Sachatello C R. Retroperitoneal iliac fossa abscess: a complication of suppurative iliac lymphadenitis. *Am J Surg* 1974; 127: 270-4.
- Mynter H. Acute psoriasis. *Buffalo Med Surg J* 1881; 21: 202-10.
- Oloff M, Chuang V P. Retroperitoneal iliac fossa pyogenic abscess. *Radiology* 1978; 126 (3): 647-52.
- Rockwood C A Jr, Monnet J C, Rountree C R. Nontuberculous psoas abscess. *Am Surg* 1961; 27, P. 598-602.
- Rogers M H. Psoas abscess from lumbar retroperitoneal lymph glands. *Am J Orthop Surg* 1911; 2: 232-40.
- Shiv V K, Jain A K, Taneja K, Bhargava S K. Sonography of hip joint in infective arthritis. *Can Assoc Radiol J* 1990; 41 (2): 76-8.
- Siddiqui H D, Jakheria S. Pyogenic iliaceus abscess. *Indian J Orthop* 1983; 17 (2): 126-8.
- Sworn B R. Acute psoas abscess. *Brit Med J* 1933; 6-7.
- Wingstrand H, Egund N, Lidgren L, Sahlstrand T. Sonography in septic arthritis of the hip in the child: report of four cases. *J Pediatr Orthop* 1987; 7 (2): 206-9.
- Yousefzadeh D K, Cooperman D R, Ramilo J L, Jokich P M, Gusnard D A. Computed sonography of septic hip & simulating disorders. *Am J Roentgenol* 1985; 145: 870.
- Zadek I. Acute non-tuberculous psoas abscess: a clinical entity: report of seven cases. *J Bone Joint Surg (Am)* 1950; 32: 433-8.