Acta chir belg, 2004, **104**, 187-190

Psoas Abscess : a Rare Complication of Crohn's Disease

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Key words. Crohn's disease ; regional ileitis ; psoas abscess ; bowel perforation.

Abstract. Psoas abscess is a rare complication of Crohn's disease.
Methods and materials : We evaluated the incidence of psoas abscess on 312 patients with Crohn's disease, seen at our institution between 1992-2001.
Results : We encountered three cases of psoas abscess (0.9%). One patient was managed with ileocolic resection and immediate anastomosis, while in two patients a percutaneous drainage was first performed and then, after 12 days of total parenteral nutrition, a resection of the diseased bowel with immediate reconstruction was carried out.
Conclusions : A correction of the nutritional deficiencies is mandatory. Percutaneous computed-tomography guided drainage of the abscess with intestinal resection with immediate anastomosis, performed after a parenteral hyperalimentation, should be the method of choice in the management of such patients.

Introduction

The incidence of Crohn's disease (CD) ranges between 2 new cases/100,000 inhabitants/year (1, 2) in low-incidence areas and 4 new cases/100,000 inhabitants/year in high-incidence areas (3, 4). Although it is regarded as being a rare disease, it has not failed to arouse researchers' and practicing physicians' attention on account of its extremely variable clinical features and course, the high incidence of postoperative recurrence and, most notably, on account of the wide range of complications during its irregular course.

Psoas abscess is a rare complication of Crohn's disease which may initiate a long series of surgical procedures that could even result in death.

We present our experience on psoas abscess complicating Crohn's disease and attempt to offer helpful advice for its diagnostic and therapeutic assessment.

Patients and methods

In a retrospective review, we analyzed the incidence of psoas abscess in our patients with Crohn's disease. Medical records and radiographic studies of 312 patients with Crohn's disease, treated at the Department of Surgical and Gastro-enterological Sciences of the University of Padua between January 1992 and December 2001, were reviewed. One hundred and fifty-nine patients were male (51%) and 153 (49%) female. The mean age was 36,5 years (range 12-75 years). The mean age at the onset of disease was 33 years. A total number of 411 surgical procedures was performed. The site of the disease was the terminal ileum in 163 patients (39.6%), the colon in 78 (19%), anal and peri-anal localizations in 69 (16.8%), ileo-colic in 65 (15.9%), and small bowel in 36 cases (8.7%).

Idications for surgery were intestinal obstruction in 195 cases (47.5%), fistula or abscess in 116 (28.2%), failure of medical treatment in 77 cases (18.7%), perforation in 8 cases (2%), ileal obstruction with fistula in 8 cases (2%), cancer in 4 cases (1%), and hemorrhage in 3 cases (0.8%). Intestinal resection was the treatment for most of the patients, of whom 18 had one or more strictureplasty (Table 1).

Results

Psoas abscess complicated 3 cases (0.9%) of Crohn's disease.

An instance of retroperitoneal abscess was found in one patient with Crohn s disease, but an involvement of the ileo psoas was not detected.

The case histories of the three patients with psoas abscess complicating Crohn's disease are briefly summarized.

Case reports

Case 1

A 26-year-old man with known disease of the terminal ileum of 6 years duration, presented with abdominal pain, radiating to the left leg, and weight loss. He had not previously undergone surgery for Crohn's disease. A

Table 1

Surgical Procedures (312 patients)

	n = 411
Right hemicolectomy	111 (27.0%)
Ileo-cecal resection	102 (24.8%)
Small bowel resection	35 (8.5%)
Colic resection	30 (7.4%)
Colic resection + Hartman	24 (5.8%)
Ileocolic resection	23 (5.7%)
Ileal resection with strictureplasty	21 (5.1%)
Abdominal abscess drainage	19 (4.5%)
Proctectomy	13 (3.2%)
Total colectomy	12 (2.9%)
Fistulectomy	9 (2.2%)
Sub-total colectomy	9 (2.2%)
Appendicectomy	2 (0.5%)
Psoas abscess surgical drainage	1 (0.2%)

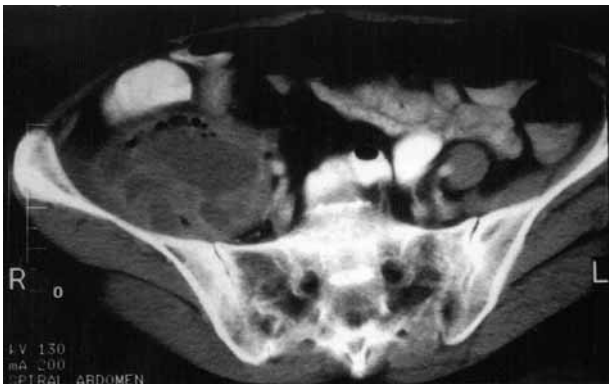

Fig. 1
Patient 2. Abdominal computed tomography shows a large abscess of the right psoas with compression of the right ureter.

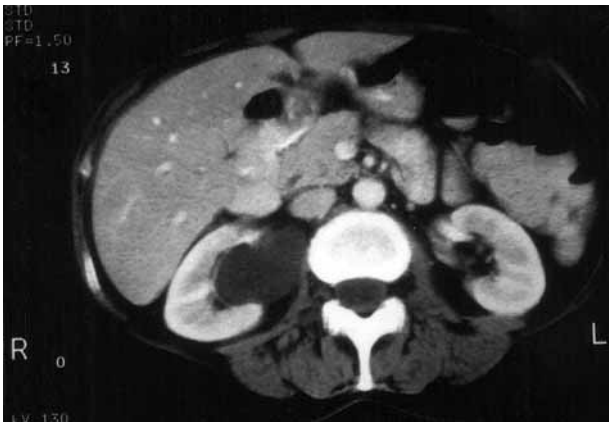

Fig. 2
Patient 2. Abdominal CT scan demonstrating a right hydronephrosis.

recurrence of Crohn's disease with abscess formation was suspected. An abdominal computed tomography (CT) scan revealed an enlarged left psoas muscle, with several areas of decreased attenuation, indicative of an ileopsoas abscess. A barium enema demonstrated a fistula of the terminal ileum. The patient was explored surgically, and a large left psoas abscess was found. We performed a right hemicolectomy with resection of the terminal ileum, and the abscess was debrided and drained.

Cultures grew *Escherichia Coli* and *Proteus sp.*

On the 20th postoperative day, the patient experienced fever with abdominal tenderness. A barium enema clearly showed a fistula at the site of the ileocolic anastomosis, so the patient underwent an ileocolic resection, with no further postoperative complications. The patient is doing well six years later, with no clinical evidence of recurrence of Crohn's disease.

Case 2

A 46-year-old man with a 5-year history of Crohn's disease, suffered from right lower abdominal and hip pain for 7 days. Three years before, he had undergone a resection of the terminal ileum for Crohn's disease.

Examination revealed tenderness in the right lower abdomen and the right hip, and a flexion contracture was present. A contrast-enhanced CT scan revealed a mass overlying the right psoas with partial obstruction of the ureter with right hydronephrosis (Fig. 1, 2). A right percutaneous nephrostomy and percutaneous CT-guided drainage of the psoas abscess were performed first, Cultures grew *E. coli*, Enterococcus and Clostridia. Treatment with clyndamicin, penicillin and metronidazole, was started. A barium enema demonstrated a fistula 10 cm proximal to the ileocolic resection.

After 12 days of antibiotics and total parenteral nutrition (TPN), the patient underwent a laparotomy, and a resection of the involved bowel and ileocolic anastomosis was performed.

The postoperative course was uneventful and the patient was discharged 13 days after surgery.

Case 3

A 29-year-old man presented with abdominal tenderness, fever, chills and low back pain radiating into the pelvis. He had suffered from pain to the right lower abdomen for 14 months, with several episodes of exacerbation, but colonscopy and barium enema results were normal. A barium enema performed on admission, revealed a fistula in the terminal ileum. An abdominal

CT scan showed a large right-sided psoas abscess extending from the level of the upper abdomen to the presacral region.

The psoas abscess was drained percutaneously and, after 12 days of TPN, the patient underwent a surgical exploration. At laparotomy, a fistolous track was identified from the terminal ileum to the presacral region. Resection of the distal ileum and a right hemicolectomy with ileocolic anastomosis was performed. Histological examination of the surgical specimen revealed Crohn's disease, with deep ulceration, serosal adhesions and abscess formation. The postoperative course was uneventful and the patient is doing well 4 years after surgery, without clinical recurrence of Crohn's disease.

Discussion

Fifty years ago the most common cause of psoas abscess was Mycobacterium tubercolosis. Nowadays, the most uncommon aetiology of this uncommon chnical feature is Crohn's disease. Procaccino (5), reviewing 67 cases of psoas abscess, identified 49 cases (73%) of abscess caused by CD.

Psoas abscess occurs in between 0.6% and 5% of cases of CD (Crohn's disease) (6-9). RICCI *et al.* (10) identified 49 cases of psoas abscess in CD before 1985. In 83% of the cases, the abscess was located in the right psoas. Its incidence was found to be virtually equal in both sexes. At the time of diagnosis the average age was found to be 28.4 years. In 26.5% of cases psoas abscess was the first symptom of the disease. It occurs more frequently in patients affected by ileal or ileocolic localization, as opposed to patients with only Crohn's colitis (7).

Fever and weight loss were found to be a constant symptom (97.5% of cases), but it may also occur with exacerbation of the underlying disease (10). Flexion contracture, extremity tenderness, a limping gait and pain in the limbs appear to be more specific symptoms, especially in those patients known to have Crohn's disease. However, they occur in only half of the cases (6, 7, 10). Many patients with Crohn's disease commonly have severe disease of over 5 years duration.

As psoas abscess usually arises from an intestinal fistula, the pus cultures mostly show a mixture of Enterobacteria (11) , such as *Escherichia Coli*, *Proteus* and *Streptococcus F.* (10). The most accurate diagnostic method is abdominal computed tomography, as it allows detection of the site and the size of the abscess (5, 10, 12-14). A colon enema may at times detect the abscess. However, it more frequently fails to be diagnostic, although it is suggestive of CD (15).

Intravenous urography is recommended in order to diagnose possible compressions of the urinary tract, especially on the right side (12, 16, 17). Ultrasound is inexpensive, fast and easy to perform, but may miss small lesions or be obscured by overlying bowel gas (12). Medical therapy or abscess drainage alone were found to be ineffective, always resulting in recurring abscesses or fecal fistulas (6, 8, 18) . Curettage and drainage of the abscess with concomitant resection of the diseased segment of the bowel are prerequisites for proper treatment (10).

Percutaneous CT-guided drainage of the abscess (12, 19, 20) and intestinal resection with immediate anastomosis (5, 9, 12, 14, 20, 21), is the most effective treatment of psoas abscess in CD, resulting in 70% of patients requiring no further therapy, as opposed to 27% when the abscess is treated only by drainage (10). In some cases it could be advisable to use an omental protection of the anastomosis or of the residual abscess cavity.

Thrombo-embolic complications occurred in 8.3% of patients : three patients had pulmonary emboli, one fatal (10). For this reason, pre- and post operative prophylaxis with heparin is recommended for such patients (10, 14).

Pre-operative wide-spectrum antibiotic therapy is recommended, as well as parenteral nutrition that should be continued postoperatively for at least 5 days (10, 13, 22). Enteral nutrition is limited by disease location, once ileal disease has a faster and more complete response (22). However, further data are necessary for better evaluation of enteral diet therapy on CD complicated by fistula or abscess.

The overall death rate was found to be 10.5% (10) : the most common cause of death was sepsis with general deterioration and malnutrition.

Psoas abscess may rarely cause paresis of the lower extremities due to its direct spread, through the hip with the attendant occurrence of septic arthritis, or through the spinal cord with the attendant development of extradural spinal abscesses (23). Prompt diagnosis and surgical or percutaneous drainage of the abscesses, along with supportive antibiotic and steroid therapy, cause paretic symptoms to recede (23, 24).

Conclusion

Psoas abscess is a rare complication of Crohn's disease. The typical signs and symptoms of intra-abdominal or psoas abscess, while present, are often less pronounced in those patients with regional enteritis, as compared with patients with an abscess from other causes.

Early diagnosis and treatment is mandatory, in order to administer the most appropriate treatment.

A percutaneous CT-guided drainage of the abscess with intestinal resection with immediate reconstruction, after a correction of nutritional deficiencies, seems to be the preferable surgical approach, providing a better long-term outcome.

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