Abstract Background Percutaneous abscess drainage (PAD) is the current therapy for abdominal or pelvic collections. PAD has poorer curative rate for abscesses in Crohn’s disease (CD), commonly complicated by wide fistulas and multiloculations. Methods We retrospectively evaluated abscess cure rate, complications and final outcome in 87 CD patients, 70 with spontaneous and 17 with postoperative pelvic abscesses, all treated with CT-guided PAD during the last 7 years. Results A 77% primary success rate and an 84.3% secondary success rate were obtained without major complications. The higher success rate for PAD was for postoperative (88.2%) rather than spontaneous abscesses (74.2%). Seventy-two percent of treated patients did not develop recurrent abscesses and underwent elective surgery up to 40 months later. Conclusions PAD in pelvic abscess complicating CD is an effective alternative to early surgery with satisfactory curative success rates. In unsuccessful cases, due to wide fistulas or postoperative anastomotic dehiscence, PAD helped in planning elective surgery, reducing surgical complications.

Key words Abscess, percutaneous drainage • Pelvic organs, abscess • Pelvic organs, interventional procedures • Crohn’s disease

Introduction Currently, percutaneous abscess drainage (PAD) is considered the standard therapy for abdominal or pelvic infected fluid collections due to its significant reduction of morbidity and mortality compared with surgical repair [1–11]. A general consensus has been reached on the most important factors conditioning the effectiveness of PAD: these are abscess characteristics (etiology, unilocular or multilocular collection, location and contact with vital structures, size and number of collections, presence of fistulas), the patient’s clinical conditions (APACHE score) and technical approach. Fistulas and multiloculations are common in Crohn’s disease (CD) abscesses and are usually considered predictors of poor outcome of PAD as a curative treatment [1, 3, 5–9, 12–14].

We undertook this retrospective study to evaluate the curative results, complications and final outcomes of CT-guided PAD for pelvic collections in a selected population of Crohn’s disease patients, considered at high risk for drainage failure after PAD.

Patients and methods Between January 1998 and January 2005, a total of 87 patients with Crohn’s disease (mean age, 36 years; range, 14–45 years) were treated with PAD for pelvic abscesses. Seventeen patients had a postoperative collection 4–10 days after colorectal surgery (mean, 8
days), whereas 70 patients presented spontaneous abscess complicating active Crohn’s disease involving the colon-rectum or ileum. The abscesses were located in the right lower quadrant (17 patients), within the iliacus, piriformis or iliopsoas muscles (18 patients), in the right gluteus muscles (8 patients), or in the presacral space (44 patients). The mean diameter of the abscesses was 9 cm, ranging from 5 to 12 cm.

PAD was performed under CT guidance. The transgluteal approach was most commonly used (71 of 87 patients: 81%), with the patient in prone decubitus position. The collection was drained via an anterior or lateral approach in only 16 patients, whenever the abscess was not too close to major pelvic vessels.

Three different drainage techniques were used, according to depth, location and morphology of the collections. Direct trocar technique was the most common (45 cases: 51.7%), inserting the assembled catheter directly. The tandem technique was adopted in 23 cases (26.4%): a Chiba needle was inserted and used as a guide for the assembled catheter. The Seldinger technique was used in 19 cases (21.9%) with multiloculated deep pelvic collections: prior insertion of a sheath-needle set (Accustick model) was followed by definitive drainage (Fig. 1). Abscesses were drained by an 8 French (F) single lumen catheter (APDL drainage, Boston Scientific Medi-Tech) in 42 cases, 10 F APD catheter in 23 cases and a 12 F catheter in 22 cases.

After placement of the catheter, systemic antibiotic therapy was given until signs and symptoms of infection abated (reduced fever and leukocytosis) and catheters were kept patent by irrigation with 10–20 ml saline solution two to four times a day, depending on the viscosity of fluid drained. Follow-up consisted of weekly CT scans to determine the size of the cavity and to disclose sinus tracts. An additional fluoroscopic control was performed after CT scan in patients with PAD complicated by persistent drainage or only partial defervescence, injecting contrast media within the collection through the drainage (fistulogram) to better depict a pre-existing wide fistula associated with the bowel (Fig. 2). Catheters were removed when drainage was absent for at least 3 consecutive days, provided that CT confirmed complete abscess resolution.

For the purpose of reporting the results, the primary success of PAD was defined as clinical improvement (defervescence, decreased white blood cell count) and complete abscess drainage documented by imaging, followed by catheter removal without need for surgery within 30 days of catheter removal. Secondary drainage success was considered when the same results were obtained after catheter repositioning or when multiple catheters were required to drain multiloculated abscesses.

**Results**

All 87 abscesses were successfully drained at the first attempt under CT guidance with no failures of primary