

# Trans-Rectal Drainage of Pelvic Abscess

Richard Davis

## Introduction:

Trans-rectal drainage of an abscess in the pelvis, performed by a surgeon in the operating room, was once a very common technique for dealing with pelvic abscesses. In resource-rich settings, this technique has been largely replaced by image-guided pelvic abscess drainage performed by an interventional radiologist. It remains important in settings like ours, however: it can help you avoid a laparotomy and its attendant risks. It is especially useful in a patient who develops a pelvic abscess after a laparotomy for peritoneal sepsis, a not uncommon event. The procedure can also easily be adapted to a trans-vaginal approach if the abscess can be more easily reached in this manner.

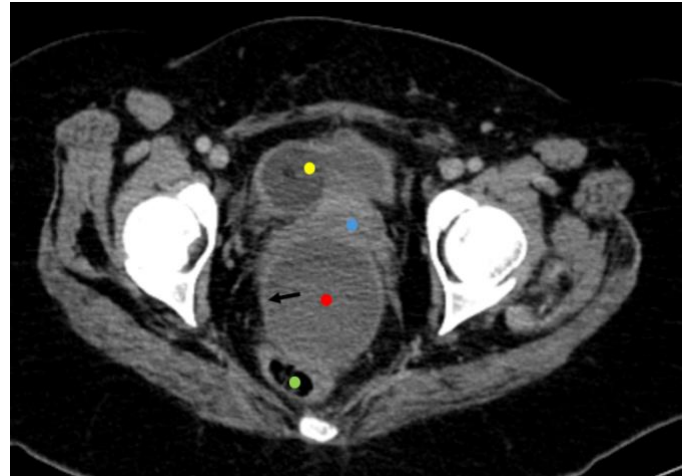
As mentioned above, a common indication is development of a pelvic abscess after laparotomy for abdominal sepsis. Other indications include pelvic inflammatory disease with abscess that has not responded to antibiotics, or conditions such as perforated appendicitis that lead to an abscess in the pelvis. On rare occasions, a perianal abscess will drain “upwards” and create an abscess in the pelvis, in the supralelevator space. Usually such an abscess will also have a perianal component that you can feel when palpating the perineum. If not, this diagnosis can be extremely difficult to make without a CT scan.

When trans-rectal drainage of an abscess is performed in resource-rich settings, the technique is as follows: a needle is inserted into the abscess, followed by passage of a guidewire, dilation of the tract, and placement of a catheter in the abscess. If you have access to a guidewire and a small pigtail catheter, you can adapt the techniques described in this chapter to drain the abscess using these items.

There are three big limitations to this technique.

- You must be certain of the abscess’s location. Often, but not always, this requires a CT scan, especially for the inexperienced clinician. However, if the clinical scenario, physical examination and pelvic ultrasound all fit, a CT is not necessary. All of these are described further below.
- The abscess must be mature. That is, it must be walled off and contained, not freely

communicating with the peritoneum. If it is not contained, making a hole in the rectum that communicates with the peritoneal cavity will not make the patient better, it will make them much worse. Usually it takes 4-5 days for an abscess in the abdomen to be walled off. On CT scan, the finding of “rim enhancement,” the uptake of IV contrast by the inflammatory wall of the abscess, confirms this fact.



*Axial CT scan of the pelvis in a patient who underwent laparotomy for perforated duodenal ulcer one week prior. The abscess cavity (Red dot) is clearly seen anterior to the rectum (Green dot) and posterior to the uterus (Blue dot). The bladder is anterior to the uterus, containing the balloon of a urinary catheter (Yellow dot). Note also that the rim of the abscess (Black arrow) enhances with contrast, confirming that this is an abscess and not a pelvic fluid collection. This abscess was successfully drained by a trans-vaginal approach.*

- If you cannot feel the abscess on digital rectal examination, you are not likely to be able to reach it through the anus. Your options are image-guided drainage, if this is available to you, or laparotomy.

The patient with a pelvic abscess will have a history that explains the presence of the abscess. Sometimes, as with perforated pelvic appendicitis, this history is difficult to distinguish and may be apparent only in hindsight. Other times, as after laparotomy for perforated viscus, you may know that the patient is not doing well and be searching for a source of infection. See [Recognizing Postoperative Intra-Abdominal Sepsis](#). The patient may have obstipation or diarrhea due to irritation of the

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intestines by the adjacent abscess. They may complain of low back pain or pain on walking.

On physical examination, the patient appears ill, usually septic with tachycardia and an elevated white blood cell count. Urinalysis may show leukocytes or blood. Usually the abdomen is soft and non-tender, except possibly to deep palpation behind the pubic symphysis. With a fitting clinical history, a tender mass on digital rectal examination that is palpable outside the rectum secures the diagnosis.

In all patients, examine the perineum very carefully to rule out a perianal abscess that communicates with a pelvic abscess. In this case, you will drain the external portion of the abscess and probe the inside of the cavity aggressively, following it to its deeper component and breaking up any loculations, rather than performing the operation described here.

Always do a rectal examination in all patients and a pelvic examination in a woman. If a woman has a pelvic abscess due to inflammatory disease, she will have cervical motion tenderness. This condition is usually treated first with antibiotics; drainage of the abscess is reserved for patients who fail this treatment.

If you do not have a CT scan, you may still do this procedure on a patient whose clinical history and exam are consistent with pelvic abscess. You must not attempt this procedure if you cannot feel the mass on rectal exam. It is possible that your examination will be limited by patient pain or anxiety; in this case, consent them for this procedure as well as laparotomy if it fails, then perform a thorough rectal examination with the patient in lithotomy position (up in stirrups) after they are under anesthesia.

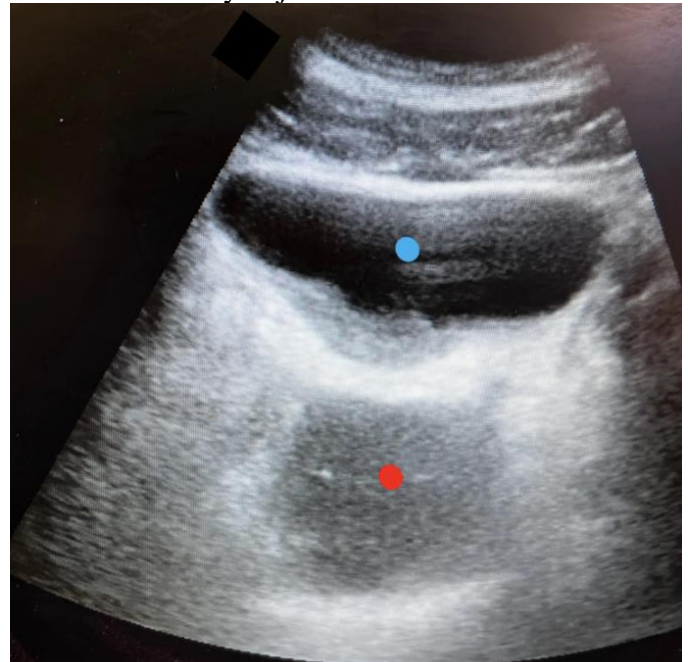
Trans-rectal drainage of pelvic abscess proceeds in the following steps

- Be certain of the diagnosis, as described above
- Position the patient in lithotomy position after induction of anesthesia
- Aspirate the abscess with a needle to confirm its position
- Make a cruciate incision at the same location
- Irrigate the cavity thoroughly

- Place a drain and secure it to the cut edge of the abscess

## Steps:

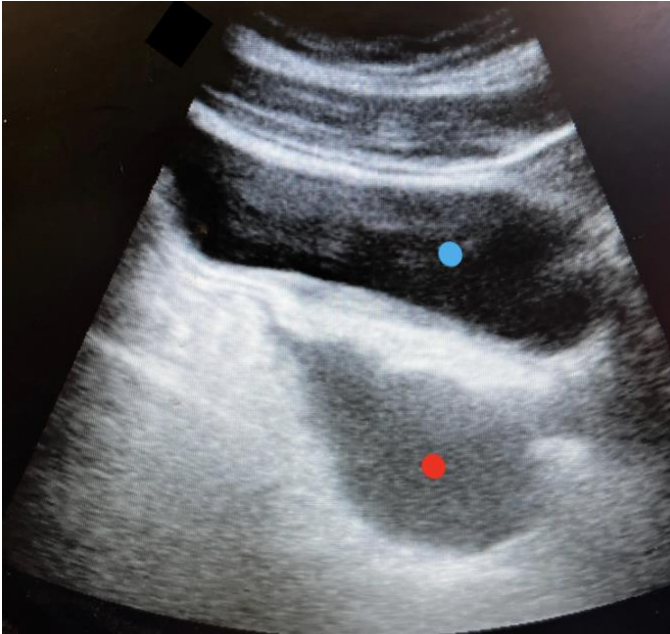
1. Either general or spinal anesthesia is acceptable for this operation. The patient must be fully relaxed from the waist down, so “saddle block” is generally not sufficient except in a very compliant patient.
2. If you have an ultrasound machine, visualize the abscess cavity adjacent to the bladder.



*Axial (transverse) ultrasound view of a pelvic abscess (Red dot) posterior to the bladder (Blue dot).*

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*Sagittal (longitudinal) ultrasound view of the same abscess as above. This abscess could be palpated anterior to the rectum in a man, so it is clearly in the rectovesical space (“Pouch of Douglas”).*

3. Place the patient in lithotomy position. Ideally, the patient’s bottom will lie a little past the end of the bed, and their thighs and knees will be retracted towards the shoulders, as shown below:



*The patient is in lithotomy position with the legs drawn up towards the shoulders. The bed is raised so that the surgeon, seated, can see well into the rectum. A headlight is very helpful for this operation.*

4. For abscesses adjacent to the proximal rectum (far from you) a circumferential retractor such as the one shown below will be best. For a distal

(closer to you) abscess a standard anal speculum is enough. Here, we show a circumferential retractor. Insert it so that the open part faces towards where you felt the abscess on rectal examination.



*This anal retractor (Hill-Ferguson) provides circumferential retraction of the anus and rectum, exposing the area of interest.*



*If a suitable anal retractor is not available, the double-bladed vaginal speculum (Sims) is common and could be an acceptable substitute. Source: Sarindam7, CC BY-SA 4.0 via Wikimedia Commons*

5. Palpate the abscess (which you felt before) with the retractor in place to confirm its location and accessibility.

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*Palpate the abscess to confirm its location once you are ready to drain it. Be careful to distinguish it from the prostate (in a man) which will also be firm but not fluctuant.*

6. Aspirate the abscess with a needle. Use one that is 21G or larger, as the thick pus may not pass through the needle. If you do not locate the abscess at first, be sure that the needle is not obstructed by blood or debris on subsequent attempts.



*Holding and directing the retractor with your non-dominant hand, insert the needle into the area of fluctuance that you felt previously.*

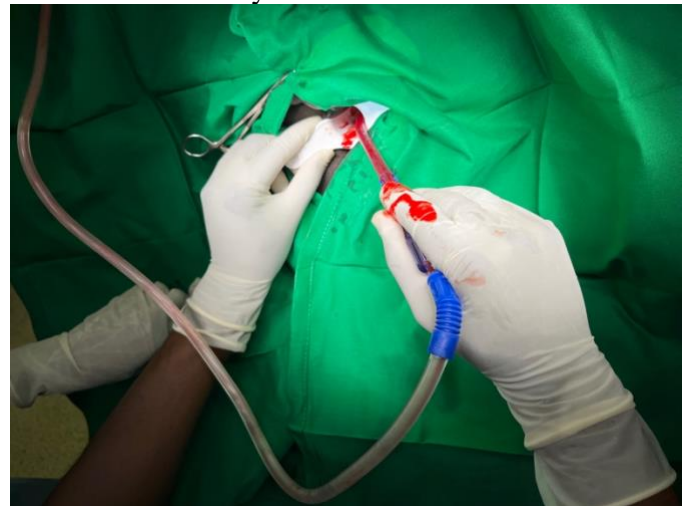
At this point, if you are planning to use a pigtail catheter over a guidewire to drain the abscess (as discussed above) pass the guidewire through the needle, incise along the guidewire, dilate the tract over the guidewire, and pass the catheter into the abscess cavity.

7. Make a single incision with a #11 blade in the area where the pus was aspirated. Insert a finger through the incision to feel the inside of the cavity before finishing the “X” shape with a second incision.



*Make a small incision exactly where the needle inserted. Pus should come out, confirming proper location of the incision.*

8. Probe, then irrigate and aspirate the inside of the cavity. Use a rigid suction catheter to gently probe the extent of the cavity and break up any loculations. Then use it to irrigate and suction inside the cavity.



*Insert a suction catheter into the cavity and direct the tip around the inside of the abscess cavity.*

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*A catheter-tip 60cc syringe may fit into the end of your suction: if so, use it to irrigate the cavity thoroughly.*

9. If you were able to see the abscess with the ultrasound preoperatively, look again to confirm that it is deflated.



*Sagittal ultrasound view of the pelvis shows complete resolution of the abscess, compared with the preoperative images above.*

10. Leave a drain to maintain continuity between the abscess cavity and the rectum. A Foley catheter with the balloon removed, a “mushroom” (Malecot) catheter, or a pigtail catheter are all suitable. Secure the catheter to the cut edge of the

rectum / abscess wall using plain gut, which will absorb within 3-5 days allowing the catheter to fall out in a timely manner. Chromic gut will last for 2-3 weeks, and other absorbable sutures will last longer, so these are not good options. Suturing the drain to the skin adjacent to the anus is not a good option either, as it will inevitably fall out. If you do not have plain gut, consider suturing the drain loosely with a suture that is easily visible and returning after 5 days to remove the suture: a cooperative patient may tolerate this without anesthesia, with an anal speculum and good lighting.

11. Put the patient on IV antibiotics and transition to oral ones when they are able to eat and drink. Continue for 5 days. If the patient has been hospitalized and on antibiotics previously, consider a drug-resistant organism. Culture the pus if you can and choose antibiotics according to your local resistance patterns.

## Pitfalls

- Misidentification: Especially without a CT scan, you may mistake other entities that are tender or fluctuant for an abscess: rectal cancer, mesenteric duplication cyst, ovarian cyst,
- Not contained: If the abscess does not show signs of maturity such as rim enhancement on imaging, attempting to drain it as described here would result in a rectal perforation that was either intra- or extra-peritoneal. Either would be disastrous. We have in the past used percutaneous drainage or mini-laparotomy in various parts of the abdomen to evacuate free fluid if the patient was too sick for a laparotomy, but we would not recommend this approach for trans-rectal drainage.
- Recurrence: An inadequate incision, or one that closes too soon, can cause this complication. Surgeons usually leave a drain across the incision site for this reason. Also inadequate probing and irrigation of a loculated abscess, after it has been entered, can leave behind a focus of undrained infection.
- Inability to find the abscess after the patient is asleep: Unless you are 100% sure you can feel it

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on rectal exam before anesthesia is induced, consent the patient for a laparotomy at the same time. If the patient has had a laparotomy between 2 and 6 weeks previously, this is a very difficult situation. Your options include continuing to try to find the abscess trans-rectally with careful aspiration, or reopening the abdomen through a different incision than was used previously, such as a low transverse one as close to the abscess as you can.

Richard Davis MD FACS FCS(ECSA)  
AIC Kijabe Hospital  
Kenya

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