

Surgery Illustrated – Surgical Atlas

Laparoscopic lymphocelelectomy

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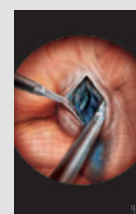
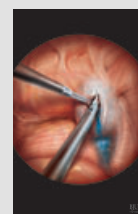
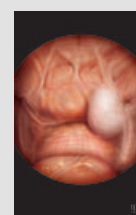
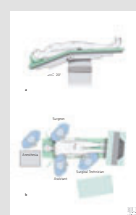
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ILLUSTRATIONS by STEPHAN SPITZER, www.spitzer-illustration.com

INDICATIONS

Pelvic lymphocele is a well documented complication after radical retropubic prostatectomy (RRP), with pelvic lymph node dissection (PLND) occurring in 1.1–9.1% [1–6]. However, the reported definitions of lymphocele formation are not consistent and this is the reason for varying rates [6]. There are only a few studies focusing on the indication for lymphocele treatment and favoured options for therapy. Recently, an algorithm for treating pelvic lymphoceles after RRP was published elsewhere [7].

The type of intervention depends on the clinical situation of the patient. Symptomatic lymphoceles can be managed initially by percutaneous aspiration with or without instillation of sclerosing agents, such as tetracycline or povidone-iodine [8]. However, lymphocele recurrence rates are high, at 50–100% after simple aspiration [9] and 10–25% after sclerotherapy [6,8]. Infected lymphoceles require percutaneous or open surgical drainage and these procedures are associated with a recurrence rate of 16–22% [10]. Sterile lymphoceles appear to be ideally suited for drainage by laparoscopic techniques [11]. The bulging wall of the lymphocele cavity is usually readily apparent laparoscopically. A comparison of laparoscopic and open surgery showed that laparoscopic marsupialization is effective, usually immediately definitive, results in minimal patient morbidity, and allows for a more rapid recovery [11,12]. Therefore, laparoscopy should be considered a first-line treatment for symptomatic, sterile lymphoceles.



SPECIFIC EQUIPMENT/MATERIALS

Non-disposable:

- One monitor;
- 10-mm 30° laparoscope;
- High-flow insufflator;
- Three chip laparoscopic camera;
- 5-mm dissector;
- 5-mm atraumatic grasper;
- 5-mm scissors, curved and straight blades;
- 5-mm suction/irrigation system;

Disposable:

- Non-bladed trocars, two 5-mm, one 10-mm;
- Port reducers;
- 4-0 polyglactin for skin closure.

PATIENT PREPARATION

All patients should have abdominal ultrasonography to assist in surgical planning.

If a paravesical drain is still in place after RRP, it should be clamped 24 h before surgery for better visualization of the bulging wall of the lymphocele.

All patients are instructed to discontinue anticoagulation medication >5 days before surgery. The patient is instructed to take nothing by mouth after midnight. A first-generation cephalosporin is given before surgery.

PATIENT POSITIONING

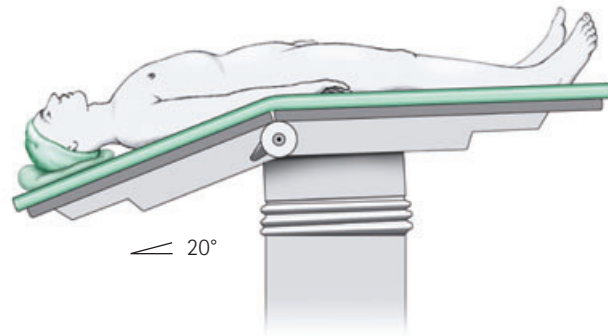
Figure 1a

The patient is placed supine; the table is minimally flexed ($<20^\circ$). The knees, heels and ankles are well padded. The patient's entire abdomen is then prepared and draped. A urethral catheter for bladder drainage is inserted before abdominal entry.

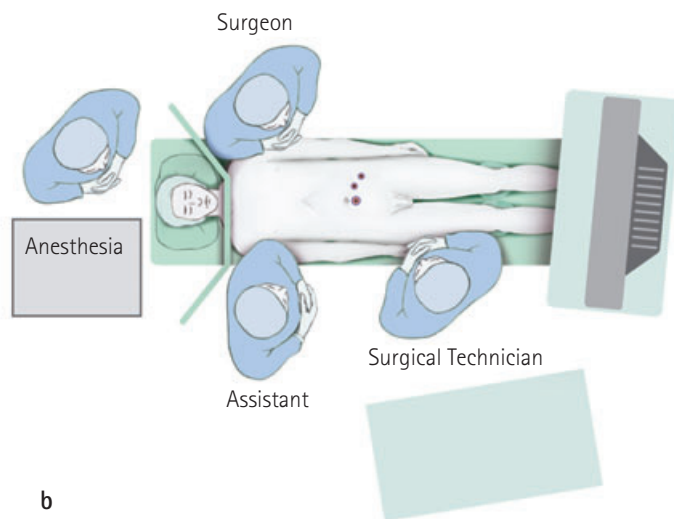
SPECIFIC ROOM POSITIONING

Figure 1b

The surgeon and assistant stand on opposite sides. The surgeon is closest to the head of the patient, to facilitate working-port access. The assistant stays closer to the upper arms to run the camera. The surgical technician stays on the same side as the assistant, closer towards the foot of the operating table. The surgical instrument tables are on the side of the assistant, and the power generators (i.e. cautery, harmonic scalpel) are across the table from the surgeon. The monitor is placed at the level of the patient's feet.



a



b

SURGICAL STEPS

STEP 1 PLACING THE TROCARS

Figure 2

To obtain pneumoperitoneum, a Veress needle is inserted infraumbilically. The abdomen is insufflated to 14 mmHg using carbon dioxide. A primary port for the camera (10 mm) is placed at the umbilicus. We introduce a 30° laparoscope. The abdomen is then surveyed to evaluate adhesions. Under laparoscopic control one secondary port (5 mm) is placed in the contralateral midclavicular line at the level of the umbilicus, and another secondary port (5 mm) is placed in the contralateral iliac fossa. If the lymphocele is large, the accessory trocars can be placed at a more cephalad location on each midclavicular line.

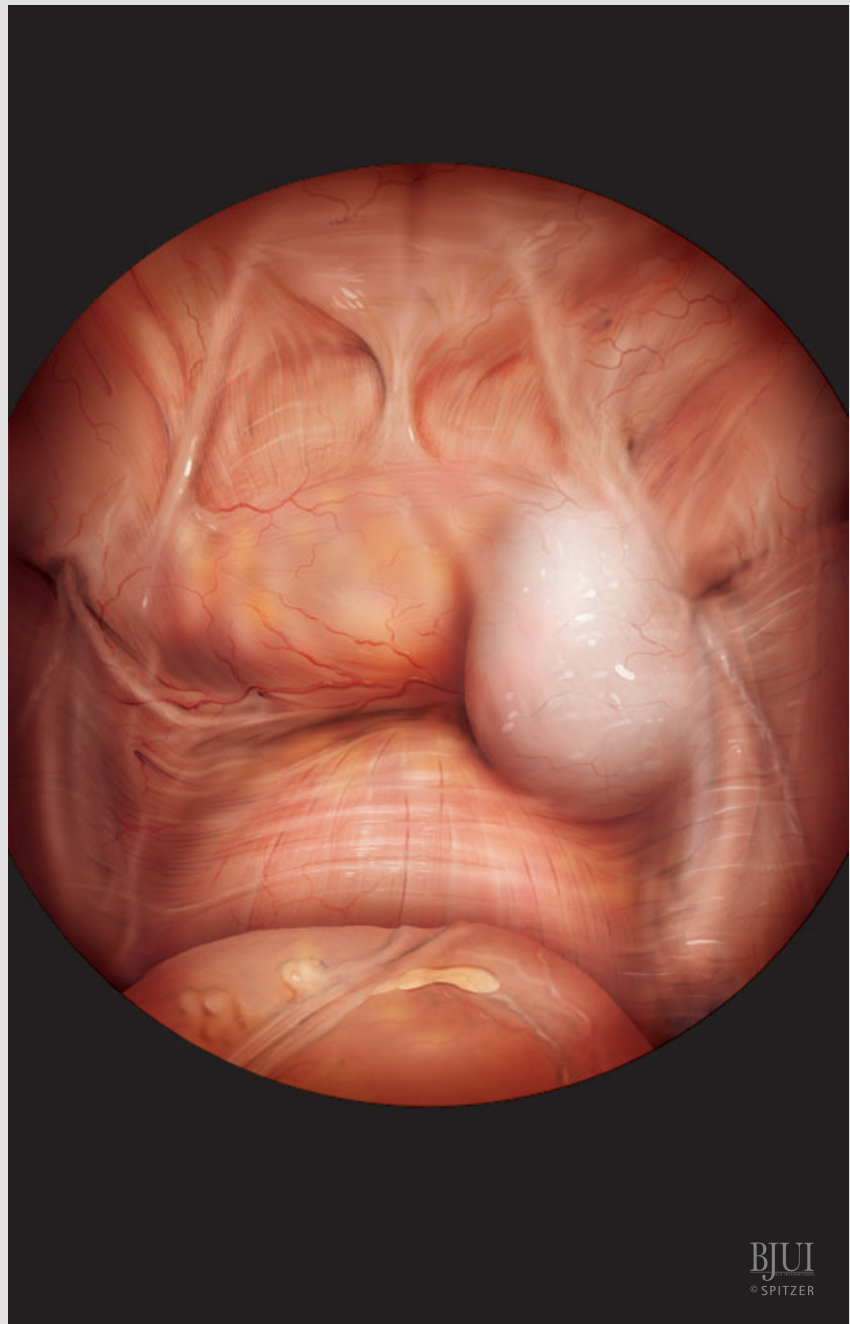


- 10 mm camera port
- × 5 mm

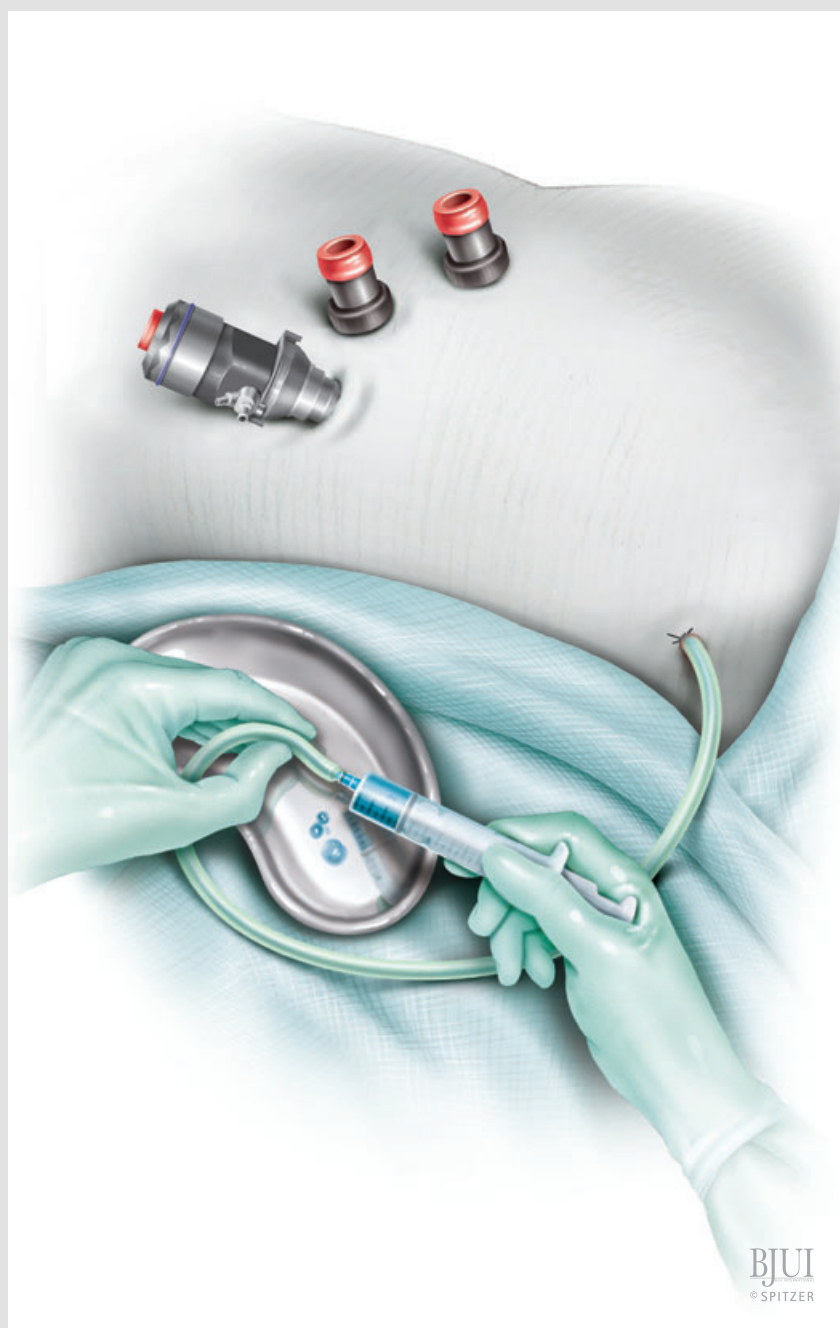
STEP 2 VISUALIZE THE BULGING WALL OF THE LYMPHOCELE

Figures 3 and 4

After exploring the abdominal cavity, visualization of the bulging wall of the lymphocele is the first and most important step to achieve success. If the lymphocele is not readily apparent, various manoeuvres can be helpful. If a paravesical drain is still in place after RRP, it should be clamped 24 h before surgery for better visualization of the bulging wall of the lymphocele. In addition, imaging of the lymphocele cavity might be improved by intraoperative instillation of methylene blue through the drain. If a paravesical drain was removed before surgery a spinal needle (18 G) can be placed percutaneously into the lymphocele cavity under ultrasonographic control, to facilitate its laparoscopic identification. Another manoeuvre is to decrease the pneumoperitoneum to 5 mmHg to expose a more prominent lymphocele. Occasionally, the location of the bladder in relation to the lymphocele might be unclear. The bladder is then distended through the Foley catheter and blunt laparoscopic forceps are repeatedly pressed against the presumed dome of the bladder. Real-time ultrasonography readily identifies distortion of the distended bladder. Also, by filling and draining the bladder, the location of the unchanging lymphocele cavity can be confirmed.



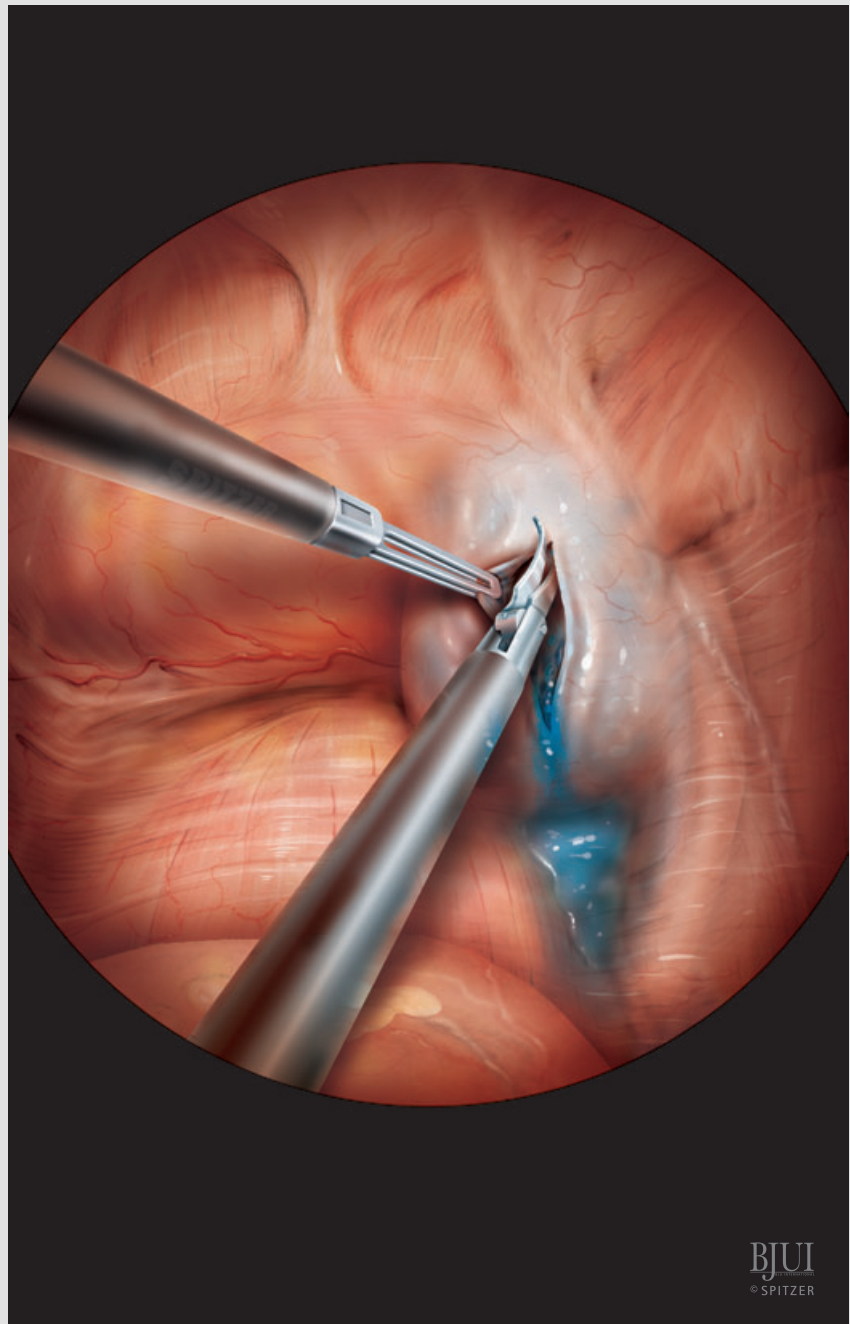
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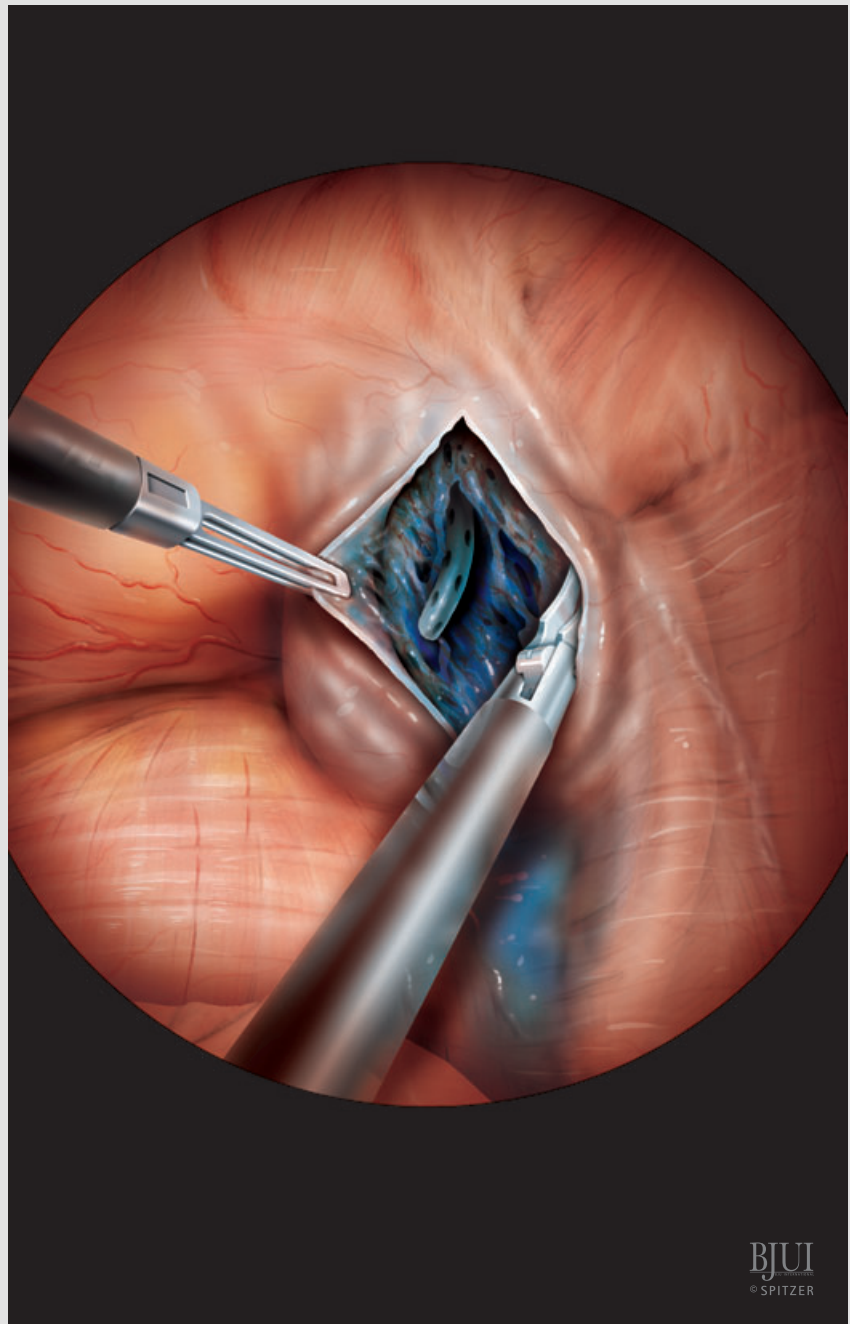


STEP 3 INCISE THE LYMPHOCELE WALL

Figures 5 and 6

A 3–5 cm peritoneal incision of the most translucent lymphocele wall is made to afford maximum exposure. The laparoscope is advanced into the lymphocele cavity. Intracystic loculations are disrupted by expanding circular rotations of the laparoscope. Dissection should be carried out down to the internal inguinal ring, thus joining the drain placed during RRP (if it was left in place) or the above-mentioned needle. Complete decompression of the lymphocele is confirmed by intraoperative ultrasonography. The lymphocele is drained into the intraperitoneal cavity. If methylene blue was instilled through the drain before surgery, correct drainage of the lymphocele fluid can be easily identified. Care is required to avoid iliac vessel, bladder and ureteric injury. The lymphocele is usually bound by the bladder medially, common iliac vessels and native ureter posteriorly.

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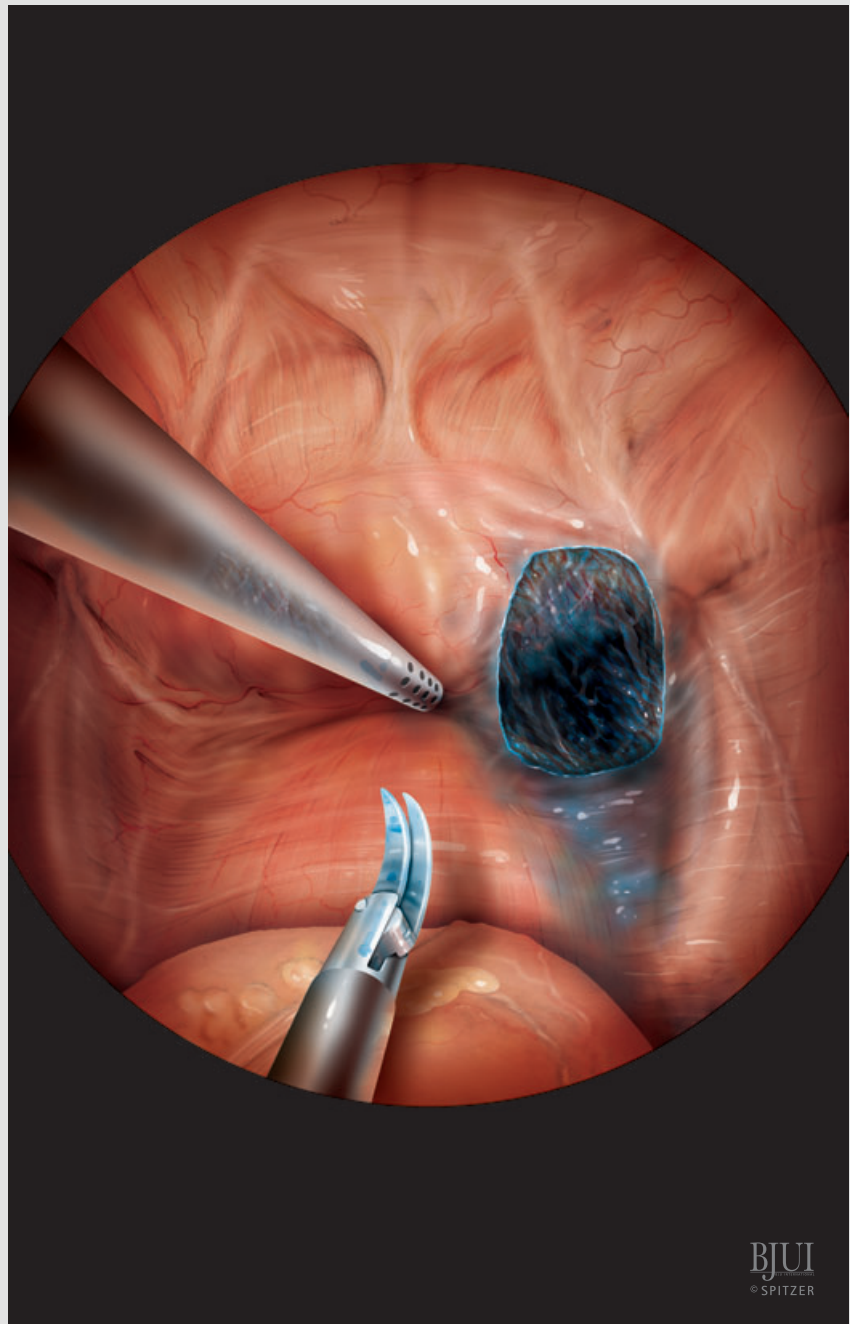
STEP 5 FREE AND FIX THE LATERAL AND SUPERIOR ATTACHMENTS OF THE PERITONEAL MARGINS

Figure 7

The surrounding margins of the incised peritoneum can be fixed with clips to prevent adhesions. This step is not routine and should be reserved for special cases with communicating attachments of the peritoneal margins.

STEP 6 CLOSE THE PORT SITES

The laparoscope is used to visualize the removal of all ports. We routinely close the 10-mm port sites to prevent herniation of omentum or bowel. All incisions are closed with a subcuticular suture and dressed with small adhesives.



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POSTOPERATIVE CARE

A first-generation cephalosporin is given for the first 24 h after surgery. Patients wear sequential compression devices on the lower extremities until ambulating well. Mobilization is begun on the day after surgery. Patients are offered clear liquids 6 h after surgery; the diet is advanced as tolerated. Patients are typically discharged on the first or second day after surgery.

FROM SURGEON TO SURGEON

Laparoscopic marsupialization of symptomatic lymphoceles after PLND for prostate cancer appears to be safe and effective. Because of its minimal postoperative morbidity, rapid convalescence and low recurrence rate, laparoscopic lymphocelelectomy should be considered in centres with experience as a first-line treatment for symptomatic, uninfected sterile lymphoceles [7,11].

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Abbreviations: RRP, radical retropubic prostatectomy; PLND, pelvic lymph node dissection.