Uninterrupted Peritoneal Dialysis after Robotic-Assisted Total Laparoscopic Hysterectomy

This report describes the first case of uninterrupted peritoneal dialysis (PD) after robotic-assisted laparoscopic hysterectomy. Frequent low-volume PD exchanges in a supine position to minimize intra-abdominal pressure starting on post-operative day 3 successfully provided adequate clearance and ultrafiltration. The patient did not encounter any metabolic or wound complications. Pre-admission PD prescription was resumed on post-operative day 14. Interim hemodialysis was not needed.

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KEY WORDS: Peritoneal dialysis; robotic-assisted total laparoscopic hysterectomy; abdominal surgery; frequent low volume exchanges.

Concerns with wound infection, peritoneal fluid leakage, poor wound healing, fistula formation, wound dehiscence, and abdominal wall hernia formation (1,2) have driven peritoneal dialysis (PD) patients undergoing abdominal surgery to be treated with interim hemodialysis while the abdominal wounds heal. The literature illustrating PD usage after abdominal surgery remains limited (3). We report uninterrupted PD after robotic-assisted laparoscopic hysterectomy (RALH) and bilateral salpingo-oophorectomy (BSO).

CASE REPORT

A female PD patient with endometrial cancer underwent an uncomplicated RALH and BSO, lysis of adhesions, and peritoneal washings. The PD catheter was avoided and untouched during the procedure. The gynecologic oncologist repaired each tissue layer of each incision. Dermabond was placed on top as a skin sealant.

Frequent low-volume PD exchanges were started on post-operative day (POD) 3 using a cyclor. The initial prescription of 2 cycles (1 L/exchange, 6 exchanges, 10-hour period while in a supine position, with 200 mL last fill) was changed on POD 7 to 1 cycle (1.5 L/exchange, 6 exchanges, 12 hours, with 300 mL last fill and no day exchange). In theory, she could have been discharged at this time, but she remained hospitalized until POD 11. On POD 14, she resumed her pre-admission prescription. Peritoneal dialysis fluid dextrose content was adjusted as needed for ultrafiltration to maintain euvolemia.

She did not encounter any metabolic or wound complications. However, the hospital course was complicated by opiate-associated constipation and peritonitis. She was given intraperitoneal antibiotics for 14 days for culture-negative peritonitis.

DISCUSSION

Peritoneal dialysis can be continued immediately after abdominal surgery without using interim hemodialysis. By using frequent low-volume exchanges in the supine position to reduce intra-abdominal pressure, the patient receives adequate dialysis with sufficient ultrafiltration to prevent volume overload and avoids wound complications.

The laparoscopy approach for comprehensive surgical staging of uterine cancer produces several small abdominal wounds (4,5). The vaginal cuff poses another potential source for wound complications. This surgical site, residing in a dependent portion of the abdomen, has constant exposure to and pressure from PD fluid even in the supine position compared to abdominal wall surgical sites, which have minimal to no PD fluid contact when the patient reclines in the supine position.

Major advantages to continuing PD comprise avoiding a hemodialysis catheter and in-center hemodialysis. Shortcomings of hospitalization and prolonged bed rest in the supine position consist of exposure to drug-resistant organisms and predisposition to thromboembolic disorders and pneumonia, respectively.

Post-operative care can be simplified if the patient has residual renal function and optimizes the internal milieu by performing additional dialysis, i.e. extra manual exchange or repeating the cyclor prescription, several days prior to surgery.

In summary, PD can be restarted immediately after abdominal surgery without using hemodialysis. Frequent low-volume exchanges and the supine position to decrease intra-abdominal pressure provide adequate clearance and ultrafiltration without wound complications.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

Susie Q. Lew^{1*}
Mildred R. Chernofsky²

Division of Renal Diseases and Hypertension¹
Department of Medicine, The George Washington University
Washington, DC, USA
Division of Gynecologic Oncology²
Department of Obstetrics and Gynecology
The George Washington University
Washington, DC, USA

*email: sqlew@gwu.edu

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