CASE REPORT JSLS

External Illiac Vein Injury and Its Repair During Laparoscopic Radical Cystectomy

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ABSTRACT

We describe a case of external iliac vein injury, sustained during laparoscopic radical cystectomy, which was managed laparoscopically with intracorporeal suturing.

Key Words: Laparoscopy, Radical cystectomy, Complications.

INTRODUCTION

Vascular injury during laparoscopic surgery is a serious complication and usually requires emergent conversion of the procedure to control hemorrhage.[1,2] We report a case of external iliac vein injury that occurred during laparoscopic lymphadenectomy on the left side and was managed laparoscopically by intracorporeal suturing. The procedure of laparoscopic radical cystectomy with ileal conduit formation was completed without conversion to open surgery.

CASE REPORT

A 55-year-old male with invasive muscle carcinoma of the bladder underwent laparoscopic radical cystectomy and ileal conduit diversion. During pelvic lymphadenectomy on the left side, an inadvertent injury caused with laparoscopic scissors occurred to the external iliac vein **(Figure 1)**. The tear was repaired by applying continuous intracorporeal sutures with 5-0 prolene **(Figures 2 and 3)**. The subsequent laparoscopic radical cystectomy and ileal conduit diversion surgery was completed uneventfully with a total operating time of 5.5 hours and estimated blood loss of 550 mL.

DISCUSSION

Major vascular injuries during laparoscopy are a common cause of conversion[2-4] and are one of the most common intraoperative complications seen during pelvic lymphadenectomy;[5] however, they have not been reported in 3 small series of radical cystectomies until now.[6-8] In our series of 13 cases of laparoscopic radical cystectomy, this is the first case of injury occurring inadvertently while the base of the lymph node was being divided, which could be managed laparoscopically with intracorporeal suturing. The bleeding was controlled during the repair by maintaining intraabdominal pressure at 15 mm Hg, putting traction on the vein with a malleable retractor, and keeping the patient in a steep Trendelenburg position. The tear could thus be seen clearly and subsequently was properly repaired. The intraabdominal pressure was then reduced to check for bleeding. The entire laparoscopic radical cystectomy procedure could then be

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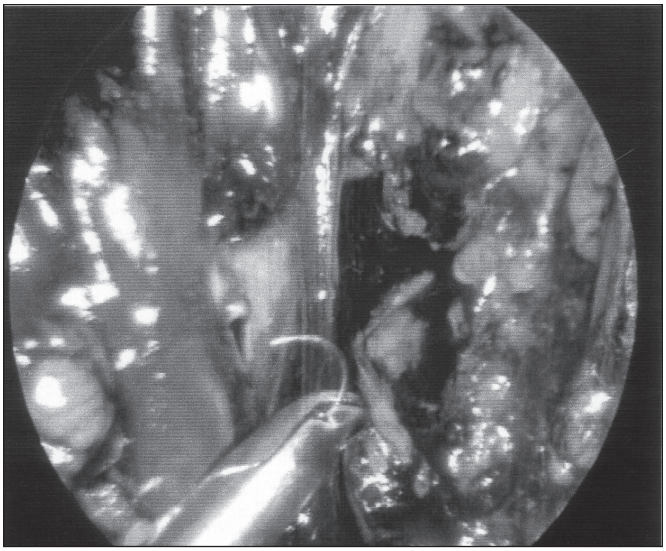

Figure 1. Injured external iliac vein.

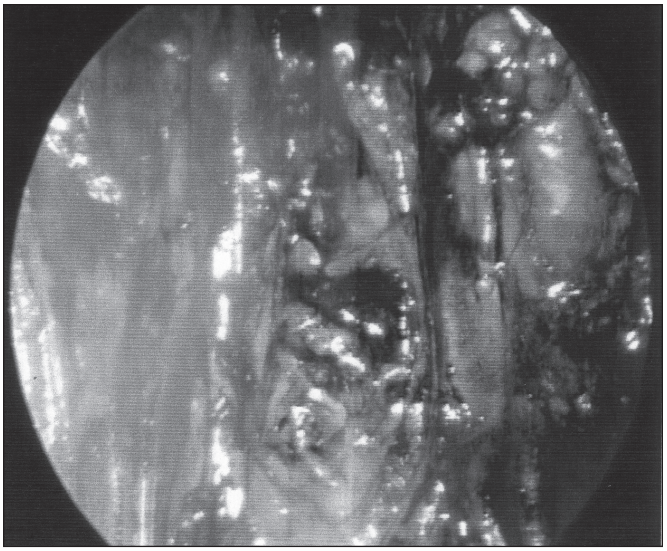

Figure 3. Suturing completed intracorporeally, final picture.

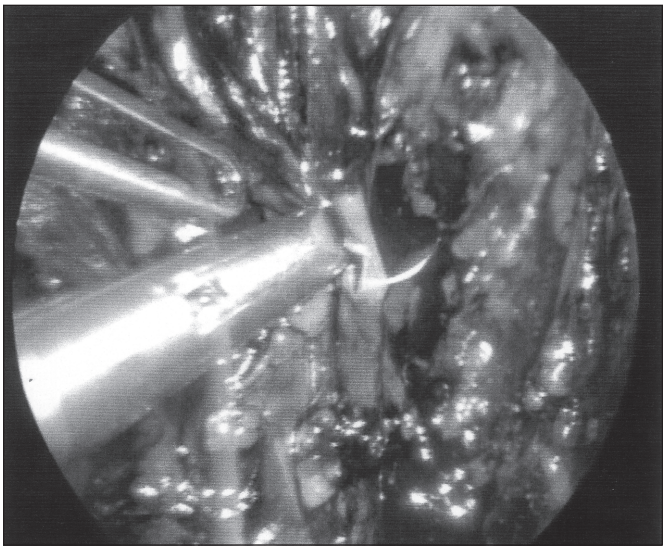

Figure 2. Laparoscopic repair by intracorporeal suturing.

completed without conversion. The concern about pneumoperitoneal pressure of 15 mm Hg is the possibility of an air embolus developing; however, this has not been described in the literature. Laparoscopic vascular clamps have been tried during experimental studies and have potential use in a clinical setting.[9] Laparoscopic repair with vascular suturing of an inferior vena caval injury, sustained during adrenalectomy, has also been reported.[2]

CONCLUSION

The management of a vascular injury depends on its severity, location, and the timing of its recognition. Any vascular injury that results in hypotension requires immediate open surgical control and repair. Attempts at laparoscopic control of vascular injuries should be limited to relatively small vessels that are directly visible, accessible, and not an immediate threat to the patient's hemodynamic stability.[10] In this case, external iliac vein injury occurred during the initial part of the procedure while left-sided pelvic lymphadenectomy was being performed, which was managed effectively and safely.

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