

ENDOUROLOGY & LAPAROSCOPY

Laparoscopic management of intraperitoneal bladder rupture secondary to blunt abdominal trauma using intracorporeal single layer suturing technique

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Background: Since Parra reported the first case of laparoscopic repair of bladder rupture caused by nonlaparoscopic injury to the bladder in 1994, several case reports have demonstrated the feasibility of this reconstructive surgical technique. We report the series of six patients that underwent laparoscopic repair of intraperitoneal bladder rupture (LRIB) because of blunt trauma using a single layer suturing technique. To our knowledge, this is the first series of LRIB reported secondary to blunt abdominal trauma.

Methods: From January of 2002 through June of 2006, a total of 139 patients were identified in our trauma registry with bladder ruptures secondary to abdominal blunt trauma. Among them 111 (79.8%) patients had associated pelvic injury. Seventy-one patients underwent surgical exploration and open bladder repair. Six cases were managed with laparoscopic technique. Patients were positioned in supine position and a three port-technique (5 mm, 10 mm, and 12 mm) was performed using the intracorporeal single layer suturing with a 3.0 Vycril (UR-6 needle). A close system Jackson-Pratt drain was placed in the retropubic space to monitor possible urine extravasation.

Results: The mean age of the patients was 47.3 years old (18-74 years). There were three female and three male patients. The average operation time was 43 minutes (31-75 minutes), mean length of bladder tear was 6.37 cm (5.3-7.7 cm), mean estimated blood loss was 16.6 cc (10-35 cc) and mean follow-up was 25.5 months (20-28 months). Two patients underwent combined orthopedic procedures. Computerized Tomography (CT) cystogram was performed between 5 days and 7 days after surgery with no signs of leakage in all patients.

Conclusion: LRIB perforation because of blunt abdominal trauma using single layer intracorporeal suturing technique is a minimally invasive alternative to open surgery in well selected patients with no other intrabdominal injuries or intracranial pressure issues, offering faster recovery and better cosmetic results.

Editorial Comment

The authors reported the largest case of laparoscopic repair of intraperitoneal bladder rupture (LRIB) because of blunt trauma using a single layer suturing technique. There are basically 2 pivotal points that should be mentioned. First, the indication of specific patients with isolated intraperitoneal bladder rupture with no concomitant increased in intra-cranial pressure. Secondly, the use of single absorbable suture to close the bladder defect with debridement of not viable tissue and no additional supra-pubic catheter.

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