

Urinary bladder injury during laparoscopic orchiopexy: A case report

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Abstract

Laparoscopic orchiopexy is the well-accepted procedure for non-palpable testis. Herein we present a case of a 20-yr-old male who was operated for laparoscopic orchiopexy for bilateral undescended testis. Intraoperatively he sustained an injury to the urinary bladder which remained unrecognized till he presented with gross ascites, decrease in urine output and high serum creatinine. In this case, we aim to highlight this rarely reported complication of laparoscopic orchiopexy, its prevention, and management.

Keywords: Iatrogenic disease, Laparoscopic orchiopexy, Urinary bladder

Introduction

Advancement in laparoscopic instrumentation and refined techniques has allowed laparoscopic orchiopexy to become the treatment of choice for impalpable testes, with a success rate of 85-95%.¹ In spite of being a simple and effective procedure for securing testicles in the scrotum, laparoscopic-assisted orchiopexy may lead to very rare and serious complication in form of urinary bladder injury. This mishap can occur notably during creation of transperitoneal tunnel for testis to deliver in the scrotum. Our case focuses on the technical aspect of procedure, precautionary measures, and management of this rare complication.

Case Report

A 20-yr-old unmarried male presented to us with complaints of bilateral non-palpable testes since childhood and pain in right groin area from last few months. He was normal, vaginal, prematurely (30 weeks) delivered baby. Clinical examination revealed right testis lying in inguinal canal, left testis was not palpable and scrotal sacs were underdeveloped. These findings were confirmed on imaging; right inguinal testis left intra abdominal testis. He also had low serum testosterone levels (1.08 ng/ml) and severe oligospermia. After thorough counseling regarding no improvement in future fertility, laparoscopic orchiopexy was performed. Per urethral catheter (PUC) was placed and

laparoscopic mobilization of right gonadal vessels was done followed by orchiopexy while on left side testis was mobilized and placed in scrotum by creating neo-tunnel [Fig. 1 A, B]. Intraoperatively and postoperatively urine was clear. Urethral catheter was removed on 1st postoperative day (POD) and he was discharged on POD-2 uneventfully. On POD-5 he presented with complaints of abdominal pain and distension, swollen genitalia and port site discharge of clear fluid. Examination revealed gross ascites and deranged renal function (urea: 267 mg/dl, creatinine: 7.66 mg/dl). Ultrasound revealed moderate inter-bowel free fluid without any internal echoes suggestive of serous fluid. Based on suspicion of bladder injury, per urethral catheter and a drain was placed through one of the port sites. To further identify site of injury a Computed tomogram urogram was done which revealed intra-peritoneal leakage of urine from bladder through the focal defect (size 3x3.2mm in anterior wall of urinary bladder on left side) [Figure 2A]. Drain output gradually decreased with normalization of renal function test and drain was removed when there was no evidence of peritoneal fluid on Ultrasound. PUC removed after 2 weeks following a cystogram which revealed no leakage of contrast [Fig. 2B]. At 1-month follow-up patient is doing well without any complaints.

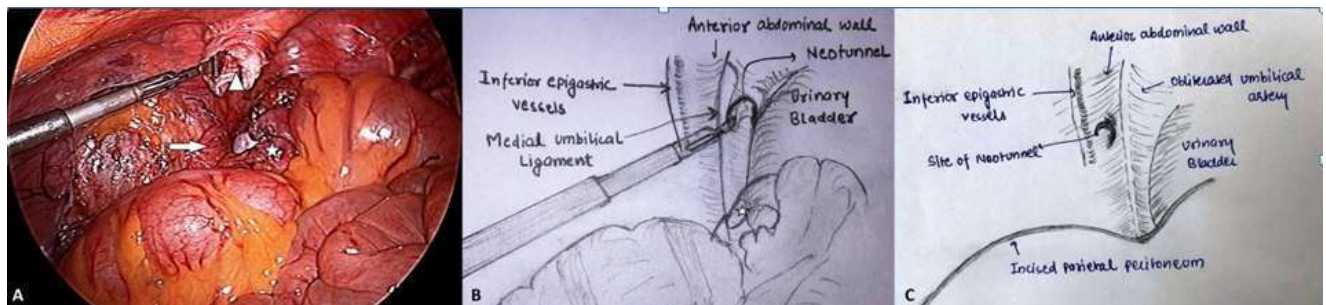


Fig. 1A: Intraoperative image showing creation of transperitoneal tunnel (arrowhead) just medial to medial umbilical ligament (arrow) resulting in bladder injury; **B:** Diagrammatic representation of creation of neo-tunnel medial to the medial umbilical ligament; **C:** Image showing correct method of creation of neo-tunnel lateral to medial umbilical ligament and medial to inferior epigastric vessels (Prentiss manoeuvre).

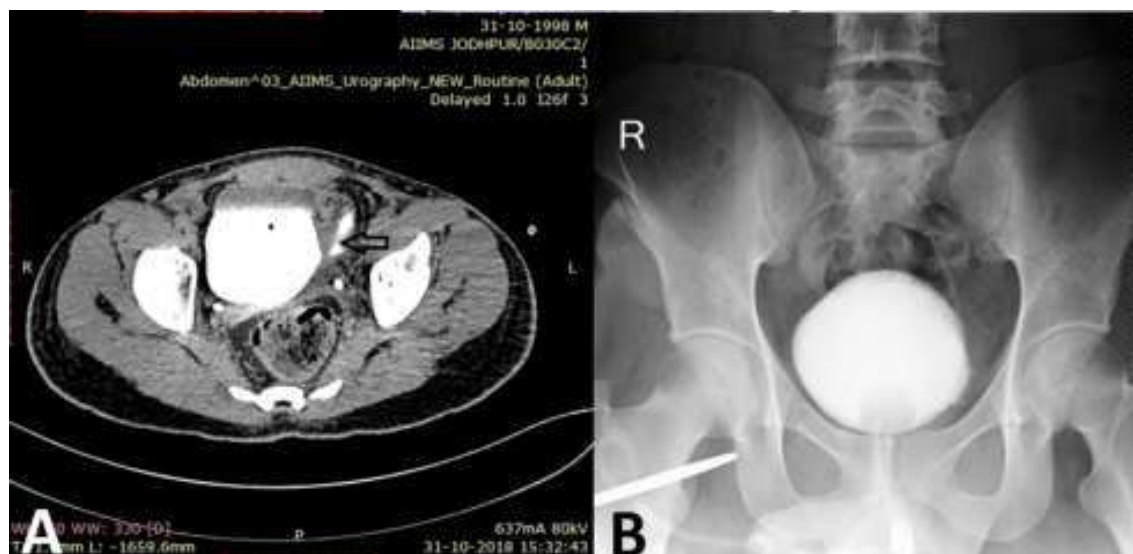


Fig. 2A: CT urogram image depicting leakage of contrast through a defect in anterior wall of bladder on left side suggestive of intraperitoneal bladder injury (arrow). **B:** Cystogram image in follow-up showing no leakage of contrast.

Discussion

Laparoscopic orchiopexy technique is a well-known procedure for undescended intra-abdominal testes. The incidence of bladder injury during laparoscopic procedures ranges from 0.02% to 8.3%.² Creation of neo-tunnel during laparoscopic orchiopexy may lead to iatrogenic bladder injury as this tunnel is created in perivesical area. Bladder injury during laparoscopic surgery may be detected by intraperitoneal bleeding, clear liquid in the operation field, haematuria, gaseous distension of the urinary bag, etc.³ Bladder injury in our case was detected postoperatively when patient presented to us with urinary ascites and leakage of urine from port site. This late presentation might be due to the fact that injury was small which may have been plugged by a clot or cautery associated injury which usually presents late. Methods to decrease such incidence during lap orchiopexy includes preoperative catheterization, filling and emptying of the bladder, careful perivesical dissection, and creation of tunnel lateral to medial umbilical ligament and medial to inferior epigastric vessels (Prentiss manoeuvre) [Fig. 1c].⁴ Whenever possible it is better to place cryptorchid testis along the native inguinal canal when the internal ring is open and the spermatic cord is sufficiently long. In cases of suspicion, bladder filling with saline or in rare case intraoperative cystoscopy can be performed. In our case, although catheter was placed bladder injury occurred during neo-tunnel creation as tunnel was created just medial to medial umbilical ligament which might have resulted in injury to bladder. Intravesical instillation of methylene blue or indigo carmine may help identify small, full-thickness bladder injuries. A high index of suspicion should be maintained for laparoscopic orchiopexy associated bladder injury when intraoperative

hematuria or postoperative abdominal distension is observed. Early diagnosis of bladder injury has advantages of successful repair, decreased morbidity and fewer legal risks. Most cases of bladder injury require surgical repair however we were able to manage our case by placement of large bore urethral catheter only.

Conclusion

Urinary bladder injury can occur during laparoscopic orchiopexy especially during initial few cases. A high level of suspicion and measures that can decrease such incidence would help in intercepting further morbidity associated with such injuries.

Conflict of Interest: None.

References

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