Robot Assisted Laparoscopic Repair of Sciatic Hernia (RASH): A Case Report

Iqbal Singh · Jon E. Hudson · Kyle A. Richards ·
Ashok K. Hemal

Received: 15 March 2009 / Accepted: 19 June 2009 / Published online: 15 April 2011
© Association of Surgeons of India 2011

Abstract Sciatic hernia is a surgical rarity. One such hernia was incidentally diagnosed in a 79-year-old woman who underwent Robot assisted laparoscopic radical cystectomy for locally invasive bladder cancer. Intra-operatively, a patent hernia sac was noted in the sciatic notch. The hernia was successfully repaired during the same operation by using robot assisted laparoscopic technique. This appears to be the first robot assisted sciatic hernia repair in the world literature although it was done incidentally during another procedure. The technical descriptions of the operation are also applicable when isolated sciatic hernia repair is intended. A robot assisted laparoscopic repair is safe, feasible and well suited to the repair of sciatic hernias in women. The surgeon needs to be aware of this uncommon surgical pathology that may occur in women presenting with persistent chronic pelvic discomfort.

Keywords Robotics · Laparoscopy · Sciatic hernia · Sacrosiatic hernia · Ischiatic hernia · Gluteal hernia · Ishiocele

Introduction

Sciatic hernia is an uncommonly described and rarely reported entity [1–3]. It is also a rare cause of chronic pelvic pain. They are often difficult to diagnose and are generally asymptomatic.[4] We report and describe the successful robotic management of a case of sciatic hernia in an elderly woman undergoing a robotic radical cystectomy

for locally invasive bladder cancer. To the best of our knowledge robot assisted laparoscopic repair of sciatic hernia (RASH) that contained perivesical tissue has not been reported before.

A 79 year old woman, presented to us with pelvic pain and discomfort associated with gross total intermittent hematuria with a prior history of hysterectomy and chronic pelvic pain. The general and local physical examination was unremarkable. CT evaluation confirmed a large left posterior bladder wall mass with left renal hydronephrosis without any other pelvic/abdominal abnormality. A staging transurethral resection confirmed high grade locally invasive bladder urothelial cancer. She elected to undergo a robot assisted laparoscopic radical cystectomy (RALRC) with an ileal conduit. The procedure was initiated under general endotracheal anesthesia, Foleys catheterization, with the arms tucked securely by the sides, in a supine position. Pneumoperitoneum was achieved with a Veress needle, a 12 mm primary camera port was inserted just superior to the umbilicus, and initial laparoscopy was performed to rule out any intra-abdominal injury. The patient was then placed in a 45° head down steep Trendelenberg position. Under laparoscopic vision two 8 mm robotic ports were placed on either side of the first port at the lateral border of the rectus muscle slightly below the level of the umbilicus so as to triangulate the three robotic ports. Two 12 mm assistant ports were placed just above the right and left anterior superior iliac spines and 5 mm port for suction placed between the right 12 mm and the right 8 mm robotic port. Figure 1 depicts the placement of the ports used by us in the present case. The robot (da Vinci™ surgical robotic system) cart was then docked. Thus we used a total of 6 ports for the RALRC. However for a purely ‘RASH’ procedure we suggest that 4 ports will suffice (3 robotic and one assistant). ‘RASH’ was performed using a right robotic monopolar scissors and a left robotic bipolar scissors/alternated with a

I. Singh · J. E. Hudson · K. A. Richards · A. K. Hemal (✉)
Department of Urology (Robotics & Minimally Invasive Urology),
Wake Forest University Health Sciences & Baptist Medical Centre,
Winston-Salem, NC, USA
e-mail: ahemal@wfubmc.edu

I. Singh
e-mail: iqbalsinghp@yahoo.co.uk

Fig. 1 A diagrammatic sketch showing the placement of the ports in the present case. 1, denotes the position of the 12 mm primary camera robotic port, 2 and 3 denote the positions of the right and left 8 mm robotic ports. 4 and 5 denote the site of the assistant 12 mm ports, while 6 denotes the position of the 5 mm suction port

left robotic needle driver when suturing was needed. During the RALRC, we identified peritoneal tissue (pre-peritoneal fat and perivesical fat) herniating in to the right sciatic notch, that suggested the diagnosis of a right sciatic hernia. We opted to repair it with robotic assistance at the same sitting. After removal of the contents (robotic assisted reduction of hernia) by gentle traction, herniorraphy (RASH) was performed by over sewing the sciatic hernia with a running suture of 3–0 polypropylene. This was reinforced by suturing a local peritoneal flap to buttress the obliterated defect (Fig. 2). The robot cart was then undocked and all the port sites were closed at the level of fascia with a 1–0 polygalactin (Vicryl™) suture, and the skin was closed with 3–0 Monocryl™ (polyglecaprone) subcuticular suture covered with Dermabond™ (2-octyl cyanoacrylate-Ethicon, Inc., Somerville, N.J.) adhesive. The patient made a quick and uneventful recovery, short hospital stay, early discharge with a normal initial follow up.

Discussion

Anatomically speaking a sciatic hernia (SH) is the protrusion of the peritoneal sac and its contents through the sciatic notch. The sacrospinous and sacrotuberous

Fig. 2 An intra-operative view of the patient showing the robotically repaired sciatic hernia with a reinforcing peritoneal flap sutured robotically in place

ligaments divide the sciatic notch in to a greater sciatic and lesser sciatic (subspinous) foramen. The greater sciatic foramen is sub-divided by the piriformis in to a supra and infra piriformis compartment. A SH may therefore occur through any of these potential spaces. It usually occurs through a well defined acquired anatomical defect caused by atrophy of the piriformis muscle [1] or due to prior surgery or inflammatory pathology in this region (that may weaken the sciatic fascia covering the sciatic notch). However it is still uncertain whether a SH is congenital [2] or acquired. The hernia sac may contain the small bowel, ureter, ovary, colon or bladder. [1] SH is the rarest type of pelvic hernia, others being obturator and perineal hernias.[3] Patients with SH may present with diverse symptoms and signs ranging from flank, abdominal, pelvic, lower back or thigh pain to a gluteal mass[5] or with complications due to incarceration of their contents such as ureteric [6] or bowel obstruction [7]. Occasionally they may also present with symptoms of sciatica-due to sciatic nerve compression and irritation [8] and or obstructive uropathy due to ureteric herniation. [3, 9]. More commonly SH tend to occur in women with an underlying history of vague pelvic or lower abdominal pain.[10] The presence of an expansible or reducible gluteal mass with bowel obstruction and or chronic pelvic pain should raise the clinical suspicion of a SH.

SH rarely exhibit subtle signs (pain, pressure, bulge, or pulling sensation) due the small size of the hernial sac, that is masked by the much larger overlying gluteus maximus muscle.[11] In clinically apparent and symptomatic SH a pre-operative diagnosis with a CT/MRI of the pelvis may be possible.[12] In the present case a preoperative diagnosis of sciatic hernia was not apparent on the CT scan due to (a) the relatively small size of the hernia; (b)

due to the presence of a large bladder tumor with a distended bladder occupying the pelvis that may have masked the hernia from within and by the large gluteus muscle from without.

Symptomatic SH should generally be explored, reduced and repaired, however some surgeons recommend leaving the sac in situ and filling it with omentum, muscle (local tissue) or mesh. Various surgical approaches have been reported in the literature, from open laparotomy, abdominoperineal/trans-gluteal approach, to laparoscopy and minimally invasive approach to repair of SH [13]. The hernial defect can be repaired with a mesh, non-absorbable sutures, and reinforced with a peritoneal flap [14] or omentum [5]. Milkos et al also successfully reported their successful experience with the laparoscopic treatment of sciatic hernia in their female patients [11]. A transperitoneal approach should be attempted if bowel obstruction occurs (SH contents are reducible with gentle traction) and mesh repair is preferable and for reducible SH with a clear cut diagnosis alternatively a trans-gluteal approach can be used [4, 7].

In summary a high index of suspicion should be entertained in women presenting with chronic pelvic pain and a diagnosis of sciatic hernia should be included in the differential diagnosis of women with pelvic pain and or thigh and back pain for which no obvious cause can be ascertained. The present case of sciatic hernia containing perivesical tissue was successfully managed by a robotic technique; this has not been reported in the published English literature till date.

References

1. Touloupidis S, Kalaitzis C, Schneider A, Patris E, Kolias A (2006) Ureterosciatic hernia with compression of the sciatic nerve. *Int Urol Nephrol* 38:457–458
2. Attah M, Jibril JA, Yakubu A, Kalayi GD (1992) Nmadu PT () Congenital sciatic hernia. *J Pediatr Surg* 27:1603–1604
3. Epner SL, Lautin EM (1994) Case report: intermittent sciatic herniation of the ureter. *Clin Radiol* 49:832–833
4. Townsend: In: Sabiston Textbook of Surgery, Hernias. 18th ed. Copyright © 2007 Saunders, an Imprint of Elsevier. Section X, Ch 44
5. Skipworth RJ, Smith GH, Stewart KJ, Anderson DN (2006) The tip of the iceberg: a giant pelvic atypical lipoma presenting as a sciatic hernia. *World J Surg Oncol* 21:33
6. Witney-Smith C, Undre S, Salter V, Al-Akraa M (2007) An unusual case of a ureteric hernia into the sciatic foramen causing urinary sepsis: successfully treated laparoscopically. *Ann R Coll Surg Engl* 89:W10–W12
7. Tokunaga M, Shirabe K, Yamashita N, Hiki N, Yamaguchi T (2008) Bowel obstruction due to sciatic hernia. *Dig Surg* 25:185–186
8. Servant CT (1998) An unusual cause of sciatica. A case report. *Spine* 23:2134–2136
9. Ritschel S, Heimbach D, Schoeneich G (1996) Ureterosciatic hernia. *Scand J Urol Nephrol* 30:423–424
10. Carter JE (1998) Surgical treatment for chronic pelvic pain. *JSLs* 2:129–139
11. Miklos JR, O'Reilly MJ, Saye WB (1998) Sciatic hernia as a cause of chronic pelvic pain in women. *Obstet Gynecol* 91:998–1001
12. Lebowitz RL (1973) Ureteral sciatic hernia. *Pediatr Radiol* 1:178182
13. Bernard AC, Lee C, Hoskins J, Lee J, Patel S, Ginn G, Maley B (2009) Sciatic hernia: laparoscopic transabdominal extraperitoneal repair with plug and patch. *Hernia*. May 6. Epub ahead of print. (PubMed™)
14. Hayashi N, Suwa T, Kimura F, Okuno A, Ishizuka M, Kakizaki S, Kawakami H (1995) Radiographic diagnosis and surgical repair of a sciatic hernia: report of a case. *Surg Today* 25:1066–1068