

Research Letter

# Strangulated small intestinal hernia through infraumbilical port site following laparoscopic myomectomy

Ching-Fen Hu<sup>a</sup>, Shun-Yu Chi<sup>b</sup>, Kuan-Hui Huang<sup>a</sup>, Fei-Chi Chuang<sup>a</sup>, Fu-Tsai Kung<sup>a,\*</sup>

<sup>a</sup> Department of Obstetrics and Gynecology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, College of Medicine, Kaohsiung, Taiwan

<sup>b</sup> Department of Surgery, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, College of Medicine, Kaohsiung, Taiwan

Accepted 16 January 2012

A 38-year-old parous woman with a body mass index of 22.6 kg/m<sup>2</sup> and a history of progressive menorrhagia and urinary frequency underwent laparoscopic myomectomy and uterine artery ligation for uterine fundal intramural leiomyoma measuring 10 cm × 8 cm [1,2]. The Veress needle technique was used to create the pneumoperitoneum and then a 12-mm infraumbilical vertical skin incision for a main trocar and sleeve was made to allow placement of the 10-mm laparoscope. We used an electromechanical morcellator to retrieve the specimen through a 15-mm lateral port across the lower abdomen. The intraoperative course was smooth and the infraumbilical fascia and subcutaneous layer were separately closed by 3-0 Vicryl suture (Polyglactin 910; Ethicon, Somerville, NJ, USA).

Fifteen hours after the procedure, in the early morning of the 1st day postoperatively, she presented with symptoms of painful abdomen and nausea. After removing the covering gauze, an incarcerated loop of small bowel with gangrene was noted in the umbilical trocar site (Fig. 1A and B). Hence, an emergency reoperation was done by a general surgeon for the evaluation of unreducible intestinal gangrenous change. The fascial sutures were found to be almost loosening. An 8-cm segment of the necrotic jejunum (Fig. 2) had to be resected, with reconstruction by end-to-end anastomosis, which was located 90 cm proximal to the ileocecal valve through laparotomy. The patient recovered uneventfully and was discharged 8 days after her second operation, tolerating a regular diet.

This case illustrates a rare complication of laparoscopic port insertion. The timing of the occurrence of herniation of

abdominal content varies from as early as a few hours to several years after laparoscopy. Tonouchi et al [3] have classified port site hernia into three types as follows. The early onset type is within 2 weeks, most commonly with small bowel obstruction. The late onset type occurs several months after the operation and involves dehiscence of the fascial plane with a peritoneal sac. The special type that occurred in the present case indicated protrusion of the small intestine. Our case demonstrated that early onset of port site hernia could cause irreducible small bowel strangulation without obvious prodromal symptoms until the occurrence of gangrenous change of the bowel during progression of herniation.

With regard to the size of the port site, Kadar et al [4] have reported that incidence of port site hernia was 0.23% at a 10-mm port site and 3.1% at a 12-mm port site, and Mayol et al [5] have reported umbilical port site hernia with an incidence of 1.6%. The clinical presentation and course of port site hernia can vary and depend on the extent and nature of the herniated content. If a patient complains of nonspecific symptoms including nausea, vomiting, and vague abdominal pain, clinical imaging (i.e., plain radiography or computed tomography) may be helpful to diagnose port site herniation in some cases.

Various factors can precipitate the development of trocar site hernias [3], such as large trocar size, incomplete closure of fascia, midline trocars, stretching the port site for specimen retrieval, coughing movements at the time of too early reversal of general anesthesia [6], obesity, poor nutrition, or post-operative port site infection. It is known that a port site >10 mm in diameter usually causes hernia, whereas a 5-mm port site rarely does [7]. Hence, it is necessary to repair the fascial and peritoneal layers to prevent port site hernia. Although port site hernia is rare, surgeons should keep this

\* Corresponding author. Department of Obstetrics and Gynecology, Kaohsiung Chang Gung Memorial Hospital, 123, Ta-Pei Road, Niao Sung Hsiang, Kaohsiung Hsien 833, Taiwan.

E-mail address: [ftkung@adm.cgmh.org.tw](mailto:ftkung@adm.cgmh.org.tw) (F.-T. Kung).

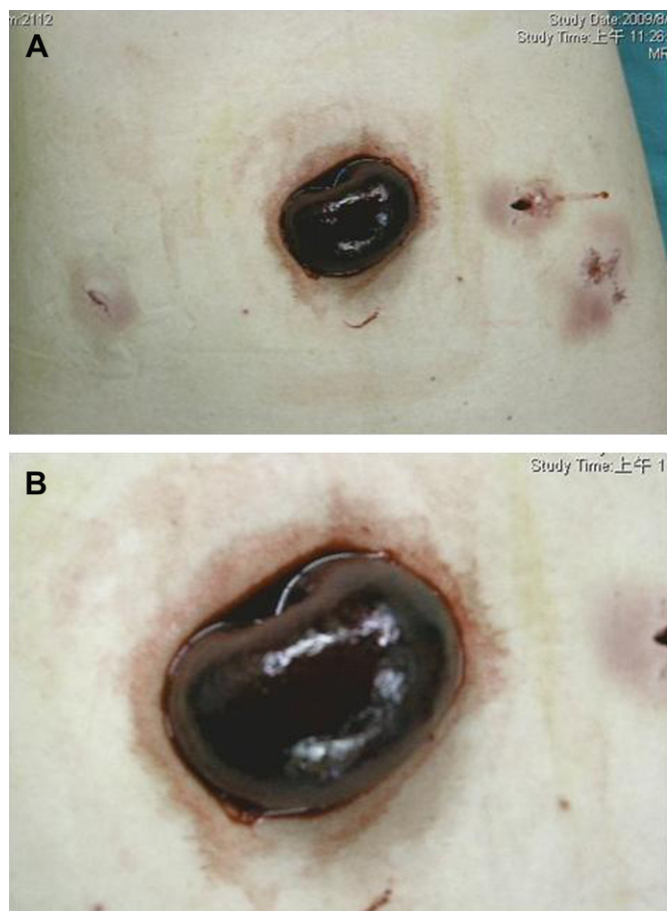


Fig. 1. (A) Incarcerated small bowel herniation with gangrenous change at the infraumbilical port site. (B) Close-up view.

possibility in mind. Prompt intervention may reduce unfavorable events if a port site hernia is suspected.



Fig. 2. An 8-cm segment of necrotic jejunum.

## References

- [1] Kung FT, Lin H, Hsu TY, Chang CY, Huang HW, Huang LY, et al. Differential diagnosis of suspected cervical pregnancy and conservative treatment with combination of laparoscopy-assisted uterine artery ligation and hysteroscopic endocervical resection. *Fertil Steril* 2004;81:1642–9.
- [2] Lee CL, Wang CJ. Laparoscopic myomectomy. *Taiwan J Obstet Gynecol* 2009;48:335–41.
- [3] Tonouchi H, Ohmori Y, Kobayashi M, Kusunoki M. Trocar site hernia. *Arch Surg* 2004;139:1248–56.
- [4] Kadar N, Reich H, Liu CY, Manko GF, Gimpelson R. Incisional hernias after major laparoscopic gynecologic procedures. *Am J Obstet Gynecol* 1993;168:1493–5.
- [5] Mayol J, Garcia-Aguilar J, Ortiz-Oshiro E, De-Diego Carmona JA, Fernandez-Repra JA. Risks of the minimal access approach for laparoscopic surgery: multivariate analysis of morbidity related to umbilical trocar insertion. *World J Surg* 1997;21:529–33.
- [6] Moreaux G, Estrade-Huchon S, Bader G, Guyot B, Heitz D, Fauconnier A, et al. Five-millimeter trocar site small bowel eviscerations after gynecologic laparoscopic surgery. *J Minim Invasive Gynecol* 2009;16:643–5.
- [7] Reardon PR, Preciado A, Scarborough T, Matthews B, Marti JL. Hernia at 5-mm laparoscopic port site presenting as early postoperative small bowel obstruction. *J Laparoendosc Adv Surg Tech A* 1999;9:523–5.