

Incidence and Risk Factors of Parastomal Hernia in Patients Undergoing Radical Cystectomy and Ileal Conduit Diversion

Nick W. Liu,* Jeromy T. Hackney,* Paul T. Gellhaus,* M. Francesca Monn,* Timothy A. Masterson,* Richard Bihrlé,* Thomas A. Gardner,† Michael G. House* and Michael O. Koch‡,§

From the Department of Urology (NWL, JTH, PTG, MFM, TAM, RB, TAG, MOK) and Department of Surgery (MGH), Indiana University School of Medicine, Indianapolis, Indiana

Purpose: We evaluate the incidence and risk factors of parastomal hernia formation in patients undergoing radical cystectomy and ileal conduit urinary diversion.

Materials and Methods: We retrospectively reviewed the Indiana University cystectomy database between 2001 and 2011, and identified 516 patients who underwent radical cystectomy and ileal conduit diversion. Overall 199 patients had a clinical followup of at least 12 months and all underwent postoperative staging computerized tomography to confirm the presence of parastomal hernia. The incidence of parastomal hernia is reported with correlations made to demographic, patient level and perioperative risk factors.

Results: A parastomal hernia developed in 58 patients (29%) at a median followup of 27 months (range 12 to 125). Of these patients 26 (45%) underwent surgical repair due to abdominal discomfort (58%), acute strangulation or obstruction of the small bowel (15%), partial small bowel obstructions (15%) and elective repair for other intra-abdominal procedures (12%). Prior exploratory laparotomy (adjusted HR 1.98, 95% CI 1.97–3.36, $p = 0.011$) and severe obesity (adjusted HR 4.26, 95% CI 1.52–11.93, $p = 0.006$) were predictive of parastomal herniation. The cumulative risk of parastomal hernia formation at 1 and 2 years after cystectomy was 12.2% and 22.5%, respectively.

Conclusions: We demonstrated that parastomal hernia will develop in nearly a third of patients after radical cystectomy with ileal conduit diversion. Prior laparotomy and severe obesity are independent risk factors. Preoperative counseling and preventative measures regarding parastomal hernia formation should be emphasized, particularly in these at risk patients.

Key Words: urinary bladder neoplasms; urinary diversion; hernia, abdominal; cystectomy

ILEAL conduit formation is the simplest and most prevalent type of urinary diversion performed at the time of radical cystectomy. Parastomal hernia, defined as an incisional hernia secondary to a fascial defect surrounding the conduit, is the

most prevalent complication, occurring in 4.5% to 18% after ileal conduit diversion.^{1–3} This complication adversely affects the quality of life and well-being of patients undergoing cystectomy.⁴ These patients often experience pain and abdominal

Abbreviations and Acronyms

BMI = body mass index
CT = computerized tomography
EBL = estimated blood loss
PH = parastomal hernia

Accepted for publication December 3, 2013.
Study received institutional review board approval.

* Nothing to disclose.

† Financial interest and/or other relationship with Dendreon.

‡ Correspondence: Department of Urology, Indiana University Health, 535 Barnhill Drive, Suite 420, Indianapolis, Indiana 46202 (telephone: 317-944-7338; FAX: 317-948-2619; e-mail: mkoch2@iuhealth.org).

§ Financial interest and/or other relationship with Myriad and Sonocare.

Editor's Note: This article is the fourth of 5 published in this issue for which category 1 CME credits can be earned. Instructions for obtaining credits are given with the questions on pages 1480 and 1481.

distortion resulting in poorly fitting ostomy appliances and urine leakage.⁵ Furthermore, surgical repair is associated with a high morbidity and failure rate. There are few studies examining the incidence and risk factors associated with PH in urological patients. Therefore, we evaluate the incidence and modifiable risk factors of PH formation in patients undergoing radical cystectomy and ileal conduit urinary diversion.

MATERIALS AND METHODS

After institutional board approval a retrospective review of the Indiana University cystectomy database between 2001 and 2011 was conducted to identify patients treated with radical cystectomy and ileal conduit urinary diversion for bladder cancer. Of the 516 patients identified 199 had at least 12 months of followup.

All patients undergoing urinary diversion were marked for a stoma site by an enterostomal nurse based on patient skin crease, belt line and bony prominences, and located within the belly of the rectus muscle. The urostomy was created using a segment of ileum approximately 15 to 20 cm in length. The ureteroenteric anastomosis was accomplished using the Bricker technique with 5-zero polydioxanone sutures.

After the creation of the urostomy a circular skin incision was made and dissection was carried down to the level of the abdominal wall fascia. A cruciate fascial incision was made with muscle splitting dissection through the rectus muscle to allow 2 fingerbreadths. The ileal conduit was then brought through this incision. The serosa of the conduit was secured to the rectus fascia to prevent PH formation using 1 of the 3 methods of 1) 4, 3-zero polyglactin quadrant sutures on the anterior rectus fascia, 2) 4, 3-zero polyglactin quadrant sutures to the posterior rectus sheath, or 3) no stomal fixation sutures placed. The stoma was then matured in a 4-quadrant rosebud fashion using 3-zero polyglactin sutures.

PH was defined as protrusion of abdominal contents, including bowel and/or fat herniation, through the abdominal defect created for the urostomy. At least 1 postoperative staging CT of the abdomen and pelvis was obtained in all patients to confirm the presence of PH. The method of PH diagnosis (CT vs physical examination vs both) was reported in relation to subsequent PH repair.

Descriptive statistics were performed using univariate logistic regression. A life table for survival analysis was used to analyze the cumulative risk of PH formation. To assess which characteristics were risk factors for PH we performed forward and backward stepwise Cox proportional hazards regressions using $p \leq 0.1$ as the significance level required for inclusion. Variables identified as significant in the stepwise model were used in the final multivariate Cox proportional hazards model to examine the increased risk of PH. Proportional hazards assumptions were verified using Schoenfeld residuals.

Demographic, patient and operative variables were included for analysis. Demographic variables included age, gender and BMI, which was categorized into the 4 categories of normal, overweight, obese (BMI

greater than 30 kg/m²) and severely obese (BMI greater than 40 kg/m²). Patient risk factors included a history of exploratory laparotomy, herniorrhaphy, neoadjuvant chemotherapy and radiation therapy, smoking history, diabetes and insulin dependence, preoperative laboratory values (creatinine, hemoglobin, albumin, total protein) and steroid use. Patients with prior laparoscopic surgery, open appendectomy using a McBurney incision and flank incision for retroperitoneal surgery were not recorded as having prior laparotomy. The type of abdominal surgery and laparotomy incisions were reported. Surgical risk factors included ileal conduit fixation method, operative time, EBL, length of hospitalization, postoperative wound infection and postoperative intra-abdominal abscess. Statistical analyses were performed using Stata® version 12.1.

RESULTS

Parastomal hernia developed in 58 patients (29%) at a median followup of 27 months (range 12 to 125). Median time to PH was 14 months (range 1 to 105) and the method of PH diagnosis is shown in table 1. CT confirmed the presence of PH in 53 patients (91.3%). Table 2 shows the demographic characteristics and potential risk factors for the development of PH.

A total of 26 patients with PH (45%) underwent repair. Due to the complexity associated with PH repair in this cohort 21 (81%) underwent repair by general surgeons. Indications for surgical repair included 15 (58%) cases of abdominal discomfort or poorly fitting ostomy appliance from a bulging hernia, 4 (15%) with acute intestinal strangulation/incarceration requiring urgent exploration, 4 (15%) with partial small bowel obstructions and 3 (12%) elected for repair while undergoing another abdominal procedure. Twenty patients (77%) had hernia repair with mesh, 3 (12%) had relocation of the urostomy without mesh and 4 (15%) underwent laparoscopic repair. There were 7 patients (27%) who had PH recurrence and 4 (57%) underwent at least a second surgical repair.

Univariate regression demonstrated that longer operative time, prior laparotomy and severe obesity may predict PH development. Of the 62 patients with prior laparotomy 16 (26%) had total abdominal hysterectomy, 7 (11%) nephroureterectomy, 4 (6%) open abdominal aortic aneurysm repair, 30 (48%) intra-abdominal bowel surgery (exploratory laparotomy for bowel injury, small and large bowel

Table 1. Method of PH diagnosis and subsequent repair

	No. (%)	No. PH Repair (%)
CT only	12 (20.6)	0 (0)
Physical examination only	5 (8.6)	2 (7.6)
CT + physical examination	41 (70.6)	24 (92.3)

Download English Version:

<https://daneshyari.com/en/article/3860650>

Download Persian Version:

<https://daneshyari.com/article/3860650>

[Daneshyari.com](https://daneshyari.com)