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Continent ileocolonic urinary diversion (Rome pouch) for gynecologic malignancies: Technique and feasibility

Pierluigi Benedetti Panici [a,*], Roberto Angioli [b], Francesco Plotti [a], Ludovico Muzii [b], Marzio Angelo Zullo [b], Natalina Manci [a], Innocenza Palaia [a], Michele Galluci [c]

[a] Department of Obstetrics and Gynecology, La Sapienza University of Rome, Viale del Policlinico 155, 00161 Rome, Italy
[b] Department of Obstetrics and Gynecology, Campus Bio Medico University of Rome, Italy
[c] Department of Urology, Regina Elena Cancer Institute of Rome, Italy

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Abstract

Objective. To describe the technique, feasibility and early complications of "Rome pouch" urinary diversion.

Methods. Thirty-five consecutive patients affected by advanced or recurrent gynecological cancers who required anterior or total pelvectomy entered the study. Rome pouch technique starts with the transection of terminal ileum about 12 cm from the ileocecal valve; the large colon is transected 15–20 cm distal to the hepatic flexure. The intestinal wall tension and internal pressure are reduced using 5–8 transverse teniamyotomies of the cecum. The efferent segment of the pouch is created either with the appendix or with the distal ileum. Operative data, intra- and early postoperative complications were recorded.

Results. Between February 2000 and March 2006, an ileocolonic urinary diversion (Rome pouch) was carried out in 35 patients affected by advanced or recurrent gynecologic malignancies. The average operative time to complete the anterior and total exenteration including reconstruction procedure was 285 (range, 230–350) and 320 (range 280–415) min, respectively. The average time in performing the Rome pouch technique was 60 min (range, 45–90). Overall postoperative complication rate (major and minor complications) was 82% (29 patients). Febrile morbidity occurred in 26 patients (74%). Wound complications and pelvic collection were found in 7 (20%) and 6 (17%) patients, respectively.

Conclusion. Our experience demonstrated that Rome pouch technique represents a valid alternative in gynecology oncology for continent urinary diversion. This technique showed low rate of medical and early urologic complications. The simplicity of performing the procedure and the reduced operating time are the best goals reached by Rome pouch technique. Future comparative trials will better define the role that the Rome pouch will have in these patients.

Keywords: Urinary diversion; Pelvic exenteration; Neobladder; Cervical cancer

Introduction

Pelvic exenteration represents the best potentially curative options for selected patients affected by advanced/recurrent gynecologic malignancies and it is considered one of the most destructive surgical procedures to be performed on elective basis with potential detrimental long-term effects on the quality of life [1,2]. During the last 15 years, reconstructive surgery has significantly improved with a benefit on the quality of life of women. The reconstruction of the pelvic floor and various organs is still one of the most challenging procedures for a pelvic surgeon. Mortality rate for total pelvic exenteration (TPE) has been decreasing in the last decades to actual range of 8–11% [3–5]. Moreover the use of peri-operative procedures such as advances in anesthesiology, outstanding intensive care facilities, specialized personnel (specialized nurses), new broad coverage antibiotics, systems monitoring and training in pelvic surgery (fellowship in Gynaecologic Oncology) has contributed in a drastically decrease the rate of perioperative complications. Quality of life of these patients has been improving thanks to the use of low colorectal anastomosis to reconstitute bowel

* Corresponding author. Fax: +39 06 49972615.
E-mail address: pierluigi.benedettipanici@niroma1.it (P.B. Panici).

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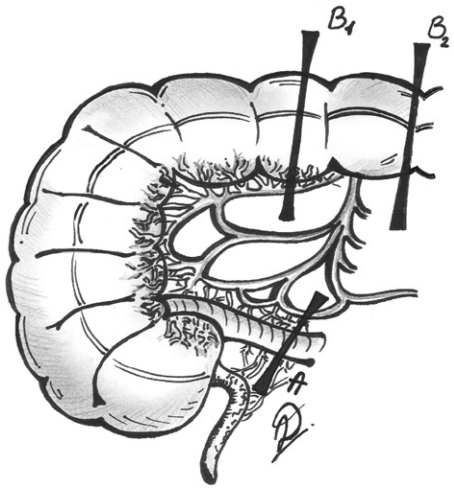

Fig. 1. Terminal ileum with caecum, ascendent and proximal portion of transverse colon used to create the reservoir and the efferent segment of the pouch. Line A shows transection site of the ileum. Line B shows transection site of transverse colon, either before (B_1) or after (B_2) the middle colonic artery.

continuity avoiding the use of stoma. In addition, the reconstruction of urinary tract after bladder resection has had an important evolution during the last 50 years.

In 1851 Lloyd first described the ureterosigmoidostomy, which remains the diversion of choice until the 1950s [3]. Subsequently, some authors have reported the ureters-transverse colon anastomosis [6–8] and in 1950 Bricker popularized the ileal conduit which has been the most widely used technique of urinary diversion during the last decades (still used by many urologists) [9].

The continuous attention of physicians to quality of life (QOL) of patients has been the reason to encourage gynecologic oncologist to consider continent forms of urinary diversion.

In order to improve QOL of these patients, many techniques of continent urinary diversion have been developed in the last decades. Kock introduced the continent ileal reservoir into clinical practice in 1975 [10]. Since that time, numerous techniques have been described incorporating portions of terminal ileum and the ascending, transverse or descending colon. The most popular forms of continent urinary diversions are (a) Mainz pouch, (b) Indiana pouch and (c) Miami pouch. The latest described, Miami pouch, is probably the most commonly continent form of urinary diversion adopted by gynecologic oncologist in the USA. This technique uses a low-pressure detubularized colonic reservoir with a tapered ileum and pursestring suture to reinforce the ileocecal valve as its continent mechanism [11,12].

Successively, Penalver et al. [3] have been responsible in adopting and defending this continent form of urinary diversion at the University of Miami and later on in the United States and other foreign countries. Advances in specialized care and in conservative management of complications have led to an easier diffusion of this procedure. Moreover the advancements in surgical technique are in continuous evolution with the goal of reduction of operative time, simplification of surgical technique and reduction of perioperative complications.

With this intent, we have adopted a simplified technique of continent urinary diversion. In 1997 Alcini et al. [13] first described an ileocecal urethrostomy with multiple transverse teniamyotomies for bladder replacement. The method allowed an ileocecal segment to be used with no detubularization using transverse teniamyotomies of the bowel in order to improve the reservoir capacity of the pouch and reduce internal pressure.

We have adopted this tenotomies technique without detubularization to create a low pressure reservoir using the caecum, ascending colon and proximal part of the transverse colon, adapting the orthotopic form of urinary diversion described by Alcini et al. [13] to an etherotopic form of urinary diversion. The ureteral anastomoses and the efferent segment of continent pouch are similar to previously described continent forms of urinary diversion.

We described in this paper the details of the technique utilized, the feasibility and perioperative complications of this form of urinary diversion which we have named Rome pouch.

Materials and methods

Consecutive patients affected by advanced or recurrent gynecological cancers who required anterior or total pelvectomy were evaluable for the study protocol. Internal Review Board approved the study. The patients were offered to receive continent neobladder (Rome pouch) or incontinent conduits.

Eligibility criteria were recurrent or advanced gynecologic cancer with positive vesical biopsy or intraoperative detection (confirmed by frozen section) of infiltration of vesico-vaginal septum, age ≤ 70 years, WHO performance status ≤ 1, adequate renal, hepatic and cardiac function, BMI <40, signed informed consent.

The pre-treatment evaluation consisted in: complete history, physical and gynecologic examination, laboratory work-up, EKG, chest X-ray, hepatic and pelvic ultrasonography and computed tomography or magnetic resonance imaging.

Before surgery all patients were submitted to mechanical bowel preparation, deep venous thrombosis prophylaxis with low molecular weight heparin (2 h before the operation and postoperatively until complete ambulation) and antibiotic prophylaxis.

In patients who underwent anterior or total pelvectomy, continent urinary diversion “Rome pouch” was performed.

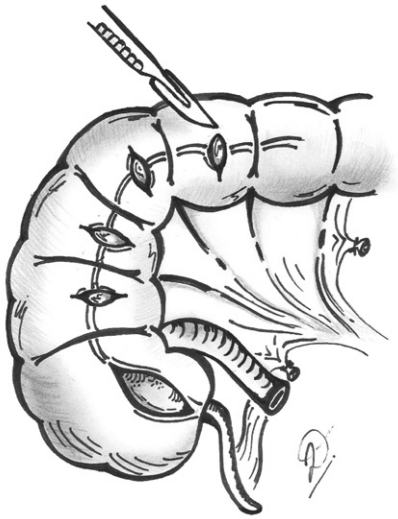

Fig. 2. Multiple teniamyotomies applied to the segment of bowel performed by cold knife.