



EUROPEAN COLORECTAL CONGRESS

Spotlight on the colon

1 – 5 December 2019, St.Gallen, Switzerland

Sunday, 1 Dec. 2019

MASTERCLASS

09.00
When the appendix plays nasty: intraoperative surprises, immediate solutions, and long-term treatment options
Justin Davies, Cambridge, UK

09.40
All the secrets of the pelvic floor - common disorders and proven solutions
Julie Cornish, Cardiff, UK

10.20
taTME in 2020 – when the dust settles: current and innovative indications, implementation, and practical advices
Roel Hompes, Amsterdam, NL

11.30
Complete mesocolic excision: indications, surgical approaches, and pitfalls
Paris Tekkis, London, UK

12.10
The views of an Editor and the wisdom of an Expert: contemporary publications with the potential to change and improve practice
Neil Mortensen, Oxford, UK

14.00
To ostomize or not and when? The value and downside of a diverting stoma versus virtual ileostomy versus no stoma
Gabriela Möslein, Wuppertal, DE

14.40
Extended lymph node dissection: indications, surgical anatomy, and technical approaches
Peter Sagar, Leeds, UK

15.20
Is the longer the new better - how to safely extend the interval after neoadjuvant chemoradiotherapy prior to surgery for rectal cancer
Ronan O'Connell, Dublin, IE

16.30
The colorectal anastomosis: time-proven wisdom, innovative configurations, and salvage techniques
André d'Hoore, Leuven BE

17.10
All you need to know about stomas but never dared to ask
Willem Bemelman, Amsterdam, NL

17.50
The EBSQ Coloproctology Examination
Michel Adamina, Winterthur, CH

18.00
Wrap-up
Michel Adamina, Winterthur, CH

Monday, 2 Dec. 2019

SCIENTIFIC PROGRAMME

09.45
Opening and welcome
Jochen Lange, St.Gallen, CH

10.00
Pathophysiology and non-operative management of symptomatic uncomplicated diverticular disease
Robin Spiller, Nottingham, UK

10.30
Surgery of acute diverticulitis – evidence, eminence and real life
Willem Bemelman, Amsterdam, NL

11.00
Management of atypical diverticulitis
Dieter Hahnloser, Lausanne, CH

11.30
Hartmann reversal: open, laparoscopic or transanal?
Roel Hompes, Amsterdam, NL

13.30
The surgeon personality – influence on decision making, risk-taking and outcomes
Desmond Winter, Dublin, IE

14.00
SATELLITE SYMPOSIUM Medtronic

15.00
Clinical applications of image-guided cancer surgery
Cornelis van de Velde, Leiden, NL

16.00
Volvulus of the colon – a treatment algorithm
Peter Sagar, Leeds, UK

16.30
Hereditary colorectal cancer syndromes: tailored surgical treatment
Gabriela Möslein, Wuppertal, DE

17.00
Lars Pahlman and Herand Abcarian (2015)
Herand Abcarian, Chicago, US



17.20
Lars Pahlman Lecture
Steven Wexner, Weston, US

Tuesday, 3 Dec. 2019

09.00
Robotic-assisted versus conventional laparoscopic surgery for rectal cancer
Amjad Parvaiz, Poole, UK

09.30
Robotic multivisceral resection
Paris Tekkis, London, UK

10.00
SATELLITE SYMPOSIUM Karl Storz

11.30
Neoadjuvant chemotherapy for advanced colon cancer: clinical and pathological Results
Dion Morton, Birmingham, UK
Philip Quirke, Leeds, UK

12.30
Cytoreductive surgery and hyperthermic intraoperative chemotherapy for intestinal and ovarian cancers: lessons learned from 2 decades of clinical trials
Vic Verwaal, Aarhus, DK

14.30
Mechanical bowel obstruction: rush to the OR or stent and dine
Neil Mortensen, Oxford, UK

15.00
Controversies in IBD surgery
André d'Hoore, Leuven, BE

16.00
How to deal with IBD and dysplasia
Janindra Warusavitarne, London, UK

16.30
Perianal Crohn – avoiding delay and best surgical practice
Justin Davies, Cambridge, UK

17.00
Perianal Crohn – stem cells therapy and current medical approach
Gerhard Rogler, Zürich, CH

Wednesday, 4 Dec. 2019

09.00
Is anastomotic leak an infectious disease
Ronan O'Connell, Dublin, IE

09.30
Is it time to invest in robotic surgery?
Antonino Spinelli, Milan, IT

10.00
SATELLITE SYMPOSIUM Intuitive

11.00
New developments in robotic systems
Alberto Arezzo, Torino, IT

12.00
Posterior component separation for abdominal wall reconstruction: evolution from open to minimal invasive using the robotic platform
Filip Muysoms, Gent, BE

14.00
Coloproctology 4.0 – the networked surgeon
Richard Brady, Newcastle upon Tyne, UK

14.30
SATELLITE SYMPOSIUM Olympus

15.30
The elderly colorectal patient – functional outcomes and patient reported outcomes
Isacco Montroni, Faenza, IT

16.30
The microbiome and colorectal cancer
Philip Quirke, Leeds, UK

17.00
Surgical management of rectal endometriosis
Eric Rullier, Bordeaux, FR



17.30
EAES Presidential Lecture 3D printing for the general surgeon
Andrea Pietrabissa, Pavia, IT

Thursday, 5 Dec. 2019

09.00
Management of locoregionally advanced colon cancer
Torbjörn Holm, Stockholm, SE

09.30
ROUNDTABLE
Herand Abcarian, Chicago, US
Bill Heald, Basingstoke, UK

10.30
Artificial intelligence in colorectal surgery
Michele Diana, Strasbourg, FR

11.30
The mesentery in colonic diseases
Calvin Coffey, Luimneach, IE

12.00
Technical pearls and typical mistakes in minimal invasive colectomy
Antonio Lacy, Barcelona, ES

12.30
Choosing the right anastomotic technique in colon surgery
Roberto Persiani, Rom, IT

13.00
Precision surgery: past, present and future
Brendan Moran, Basingstoke, UK

13.30
Poster award
Michel Adamina, Winterthur, CH

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Initial experience of restorative proctocolectomy for ulcerative colitis by transanal total mesorectal rectal excision and single-incision abdominal laparoscopic surgery

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Abstract

Aim Laparoscopic surgery is well established for colon cancer, with defined benefits. Use of laparoscopy for the performance of restorative proctocolectomy (RPC) with ileoanal anastomosis is more controversial. Technical aspects include difficult dissection of the distal rectum and a potentially increased risk of anastomotic leakage through multiple firings of the stapler. In an attempt to overcome these difficulties we have used the technique of transanal rectal excision to perform the proctectomy. This paper describes the technique, which is combined with an abdominal approach using a single-incision platform (SIP).

Method Data were collected prospectively for consecutive operations between May 2013 and October 2015, including all cases of restorative proctocolectomy with ileoanal pouch anastomosis performed laparoscopically. Only patients having a transanal total mesorectal excision (TaTME) assisted by SIP were included. The indication for RPC was ulcerative colitis (UC) refractory to medical treatment.

Results The procedure was performed on 16 patients with a median age of 46 (26–70) years. The male:

female ratio was 5:3 and the median hospital stay was 6 (3–20) days. The median operation time was 247 (185–470) min and the overall conversion rate to open surgery was 18.7%. The 30-day surgical complication rate was 37.5% (Clavien–Dindo 1 in four patients, 2 in one patient and 3 in one patient). One patient developed anastomotic leakage 2 weeks postoperatively.

Conclusion This initial study has demonstrated the feasibility and safety of TaTME combined with SIP when performing RPC with ileal pouch–anal anastomosis for UC.

Keywords Ulcerative colitis, RPC, laparoscopy, single incision laparoscopic surgery, IBD, IPAA

What does this paper add to the literature?

The paper reports the novel approach of combining single-incision surgery and transanal rectal excision for restorative proctocolectomy. The technique has the ability to minimize surgical trauma and allow safe distal rectal dissection, especially in men with a narrow pelvis.

Introduction

Laparoscopic surgery is now the preferred surgical technique for most patients with colon cancer [1–3]. Several studies have shown that laparoscopic pelvic dissection in rectal cancer is safe [4]. The opponents of laparoscopic rectal dissection emphasize the difficulty of dissecting the last few centimetres of the rectum and the need for more than one firing of the stapler to divide the rectum, thereby increasing the risk of anastomotic leakage

[5]. To overcome this, some authors have proposed a combined procedure in which the abdominal dissection is performed laparoscopically followed by a rectal dissection via a perineal approach [6]. In restorative proctocolectomy (RPC) it is important to mobilize the rectum to the pelvic floor to reduce the risk of a retained rectum. This can be difficult laparoscopically and can result in an increased operating time. When performing RPC for ulcerative colitis (UC) the main argument for a purely laparoscopic approach is to diminish the fall in fecundity experienced by female patients of child-bearing age who have had open surgery [7,8]. Most patients who require surgery for UC are young and prefer a

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laparoscopic approach as the cosmetic results are superior to those of open surgery [9–11].

Single-incision surgery for RPC has been described, but its uptake has been limited owing to the long operation time and the associated learning curve. Transanal total mesorectal excision (TaTME) is gaining wide acceptance as an adjunct to laparoscopy and its safety and feasibility have been well described [12–14]. A recent report shows that combination of laparoscopic surgery with TaTME in RPC is safe and feasible [15]. The present short report and accompanying video describe the technique of combined single-incision laparoscopic surgery and TaTME in RPC and assesses its early safety and feasibility.

Method

Patient information was collected prospectively and entered into an international registry database for TaTME (LOREC Low Rectal Cancer Development Program, <http://www.lorec.nhs.uk>) [12]. The records of these patients were also reviewed retrospectively to ensure completeness of data collection.

Technique

A video of the technique is available in the Supporting Information (Video S1). A GelPoint Port (Applied Medical, Rancho Santo Margarita, California, USA) was used for the abdominal procedure and a GelPoint Path (Applied Medical) was used for the transanal procedure. In order to establish a pneumoperitoneum, a single incision was made at the stoma site, generally in the right iliac fossa. If the patient had a previous colectomy with mucous fistula, the fistula was mobilized and released into the abdominal cavity, after which the GelPoint was inserted. This has a ring to secure it to the abdominal wall and a lid through which ports are inserted. The GelPoint device had with three working ports and a standard 10-mm 30° laparoscopic camera (Karl Storz, Tuttlingen, Germany) was used, which can be inserted into any of the ports. An additional 5-mm port was placed in the left iliac fossa to allow better triangulation and retraction. This site was used to place the pelvic drain at the end of surgery. Pneumoperitoneum was maintained at a pressure of 12 mmHg.

The rectal dissection is commenced in the TME plane from the abdomen. The superior rectal artery is divided. The rectal phase of the operation is commenced concurrently and a purse-string suture is placed approximately 3 to 4 cm from the dentate line with the aid of a Lonestar retractor (CooperSurgical, Trumbull, Connecticut, USA). The amount of rectal mucosa that

is left behind after the initial distal rectal division is based on the degree of proctitis and the presence or absence of dysplasia. When dysplasia is not the indication for surgery or when the distal proctitis is not severe a 1–2-cm rectal cuff is left to reduce the risk of continence disturbance. The GelPoint Path transanal device is placed in the anal canal. Carbon dioxide is insufflated to a pressure of 12 mmHg. The dissection is started laterally using a diathermy hook with a coupled suction device with the aim of removing smoke, which can hamper vision. We prefer to use a hook rather than a harmonic scalpel as it helps to reduce smoke. Total mesorectal dissection is continued such that the abdominal and rectal operators approach the mid rectum from opposite directions. During this the two operators can assist each other to ensure safety and adequate retraction. Simultaneous dissection also reduces the operation time and can make the operation easier. Once the proctectomy is completed the specimen is brought out through the stoma site. The J-pouch is created by standard stapling after bringing the ileum out through the stoma site. The anastomosis was performed manually in the first two cases, following which the technique was changed using a circular stapler (CDH 29-mm stapler, Ethicon Endo-Surgery, Cincinnati, Ohio, USA) guided by a drain as described by Bracey *et al.* [16]. A loop ileostomy is always created. A Robinson drain is placed in the pelvis through the 5-mm port site in the left iliac fossa.

Results

Between May 2013 and October 2015, 16 patients had hybrid single-incision surgery combined with TaTME for ileoanal pouch construction. Their median age was 46 (26–70), with 10 male and 6 female patients. The 10 men had a median body mass index (BMI) of 27 (17–30) kg/m², and the 6 women had a median BMI of 21 (16–25) kg/m². All patients had a diagnosis of UC confirmed at previous biopsy or at the previous operation (previous subtotal colectomy). Thirteen patients had a previous subtotal colectomy (three-stage ileal pouch–anal anastomosis, IPAA), three of which were performed in other hospitals. Two patients had had open surgery and one standard laparoscopic surgery. The other 10 patients had had a subtotal colectomy using the hybrid single-incision technique in our institute by the same operator. The remaining three patients underwent total panproctocolectomy with IPAA (two-stage). Fifteen patients were American Society of Anesthesiologists (ASA) grade 2 and one patient was ASA grade 3. None of the patients had any biological treatment for the 6 months before the IPAA

surgery. Two patients were on steroids at the time of surgery (maximum dose 10 mg) (Table 1).

All patients underwent rectal dissection as described above. The first two patients had a hand-sewn anastomosis and the subsequent 14 had a stapled anastomosis as described above. The stoma site was always the location of GelPoint port placement and all patients received a defunctioning loop ileostomy. The median operating time was 247 min (4 h). The median hospital stay was 6 (3–20) days. One patient was converted to an open procedure for safety reasons due to the loss of the right lateral mesorectal plane during the TaTME dissection. Two patients (both three-stage IPAA) had a conversion from laparoscopy to open surgery owing to difficulty in dissection because of adhesions.

In our institution we tend to follow an enhanced recovery programme, which allows patients to commence oral liquids immediately postoperatively and begin feeding from day 1 [17,18]. Patient-controlled analgesia was used as the preferred method of pain relief and was stopped at an average of 2.3 [1–5] days following surgery. The mean time to the commencement of stoma function was 1.8 days.

The 30-day surgical complication rate, recorded according to the description by Clavien and Dindo [19] was as follows: grade 1, four patients; grade 2, one patient; grade 3, one patient. Five (31.25%) patients had minor complications and one (6.25%) had a major

complication (Table 1). The latter was anastomotic leakage 2 weeks postoperatively, which was treated with Endo-Sponge (Aesculap AG, Tuttlingen, Germany). Histology identified three patients with low-grade and one with high-grade dysplasia. There was no compromise of the TME plane in any of the patients. Closure of the loop ileostomy was performed at a median of 6 (5–12) months after RPC.

Discussion

The study has shown that the combination of single-incision surgery and TaTME to perform restorative proctocolectomy is feasible and safe. The technique allows a stapled ileoanal anastomosis to be performed with the added advantage of easier dissection of the distal 5 cm of the rectum. It also avoids the use of multiple applications of the stapler. As this is a preliminary report we are unable to report bowel function after closure of the ileostomy; this is currently being studied prospectively in the same patients.

Single-incision surgery is a laparoscopic approach that has been introduced in the last few years and is becoming more widely used as it is less invasive than standard multiport laparoscopy. Many studies have shown it to be effective and safe in colorectal surgery but there may be technical difficulties, including loss of triangulation and a decreased field of view and depth of

Table 1 Clinical details of 16 patients who underwent single incision surgery and transanal total mesorectal excision (TaTME) with restorative proctocolectomy (RPC) for ulcerative colitis

Patient	Gender	Operation*	ASA score	Medication	Conversion	Anastomosis	Complication
1	M	A	2	None	N	Hand-sewn	Ileus
2	M	A	2	None	N	Hand-sewn	None
3	F	A	2	None	SIP	Stapler	None
4	M	A	2	None	N	Stapler	None
5	F	A	2	None	TaTME	Stapler	Ileus
6	M	A	2	None	N	Stapler	Ileus
7	M	A	2	Steroids	N	Stapler	None
8	M	B	2	None	N	Stapler	Pneumonia
9	F	A	2	None	N	Stapler	None
10	F	B	2	None	N	Stapler	Anastomotic leakage
11	F	A	3	None	SIP	Stapler	None
12	M	A	2	None	N	Stapler	None
13	M	B	2	None	N	Stapler	None
14	M	A	2	Steroids	N	Stapler	None
15	F	A	2	None	N	Stapler	Ileus
16	M	A	2	None	N	Stapler	None

M, male; F, female; ASA, American Society of Anesthesiologists; SIP, single-incision platform.

*A, three-stage RPC [subtotal colectomy + proctectomy and ileal pouch-anal anastomosis (IPAA) + closure of ileostomy]; B, two-stage RPC (total proctocolectomy and IPAA + closure of ileostomy).

perception. Appropriate training in multiport laparoscopy is required before attempting SIP [12,20].

The first successful use of SIP in colorectal surgery was reported by Remzi *et al.* in 2008 [21]. The first case of restorative proctocolectomy and formation of an ileoanal pouch using a SIP technique was reported by Geisler *et al.* [22] in a patient with polyposis. A systematic review [23] has described the advantages and disadvantages of SIP in colorectal surgery. SIP was found to be feasible with the same operation time as multiport laparoscopic surgery. SIP should, however, be performed only by experienced surgeons and should be restricted to a highly selected patient group [23]. A case-control study comparing single-port with multiport laparoscopic surgery showed the former to have a significantly shorter operation time and hospital stay. Postoperative complication rates were similar in both groups [24]. SIP has been shown to be feasible for pouch surgery in children, again with reduced operation time and length of stay with no significant difference in complications [25]. It has been shown that postoperative pain is less with single-incision laparoscopic surgery [26], although this is controversial. Single-incision laparoscopic surgery also has the potential for good cosmetic results, particularly if the main port is placed at the site selected for the stoma.

TaTME allows dissection of the rectum from below and can circumvent many of the difficulties associated with abdominal laparoscopy [27,28]. In the first series of 140 patients with colorectal cancer undergoing TaTME with multiport laparoscopy, Lacy *et al.* [14] reported a mean operation time of 166 min with no conversions or intra-operative complications. Clavien-Dindo grade 1 and 2 complications were seen in 24.2%, and grade 3 and 4 in 10% of patients. A complete mesorectal dissection was reported by the histopathologist in 97.1% [14]. TaTME combined with SIP for low rectal cancer has recently been reported in six patients with negative histological margins and a complete excision of the mesorectum in all cases, with no major complications. It was concluded that the technique was safe and reliable [28]. The transanal approach for benign rectal disease was described in twelve patients, nine with inflammatory bowel disease, who underwent the new technique of perineal proctectomy using transanal endoscopic microsurgery (TEMS). The technique was advocated as being safe and a valid alternative to transabdominal rectal excision [29]. In another small series of 14 patients undergoing transanal minimally invasive rectal excision with a standard transabdominal laparoscopic approach the procedure as also described as being safe despite some intra-operative difficulties, including inadequate exposure, fibrosis due to

radiotherapy and a single case of rectal perforation [30]. Other variations of technique including transanal endoscopic microsurgery (TEM) [31], hybrid robotic and laparoscopic approaches [32,33] have also been reported.

In the present series we have shown the technical feasibility and safety of single-incision surgery combined with TaTME for restorative proctocolectomy. The technique allows all the benefits of laparoscopic surgery and is able to overcome some of the difficulties of laparoscopic dissection of the distal rectum. Although the procedure requires further evaluation, especially with regard to function and pelvic sepsis, only one of the 16 patients developed anastomotic leakage. A cost analysis should also be carried out in any future evaluation.

The results of the present study show that TaTME combined with single-port laparoscopic abdominal surgery is a feasible alternative to open or multiport laparoscopic surgery for RPC performed for ulcerative colitis. TaTME avoids the repeated application of staplers and dissection of the low rectum can be performed more safely. Combining this technique with a single-incision laparoscopic surgery abdominal approach results in fewer scars with improved cosmetic results and may lead to less postoperative pain and a decreased incidence of incisional hernia, although this requires further evaluation.

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Supporting Information

Additional Supporting Information is available at: <http://www.stmarksacademicinstitute.org.uk/resources/trans-anal-total-mesorectal-excision-alex-leo-janindra-warusavitarne/>

Video S1. The operative technique described in this paper.