Many large series of laparoscopic colectomy have been reported in the literature. Most of them agreed with its efficacy in dealing with cancer adequately. Most series either have no or very few cases of port site recurrence commensurate with that of open surgery.

FURTHER DEVELOPMENTS

Due to the maturation and increased experience of laparoscopic colectomy in some centers, some surgeons have pushed the limit of the approach to technically more difficult operations such as total mesorectal excision for rectal cancer. It is found that in experienced hands, the operation is not just feasible, it can achieve more accurate dissection leveraging on the advantage of laparoscopic vision. However, there are other approaches to solving the technical problems in dealing with low rectal cancer such as the hybrid open-laparoscopic approach, laparoscopic and transanal approach and the hand assisted laparoscopic approach.

Hand assisted laparoscopic operations have been taken up in a big way in order to alleviate some technical problems faced by pure laparoscopic surgery, especially for highly complicated operations such as liver, pancreatic, stomach and kidney resections. This approach has also been used in colorectal resections. Our center has started investigating with this approach for colectomies, excluding sigmoid and rectal excisions, and we have found good results in terms of shortening operating time and cost savings. It might also have a role in the process of training for laparoscopic surgery for beginners because it can be thought of as a mid way procedure to bridge open and laparoscopic operations.

CONCLUSIONS

Laparoscopic colectomy is both feasible and safe. There is good evidence showing the advantages of the laparoscopic approach especially in the early postoperative results. There is also evidence of adequate clearance of tumour and lymph nodes in laparoscopic cancer surgery. However, long-term effectiveness in terms of survival and recurrence rates awaits results of large-scale randomised studies.

REFERENCES


LAPAROSCOPIC TOTAL MesoRECTAL EXCISION

Michael Li

Chief of Service, Department of Surgery, Pamela Youde Nethersole Eastern Hospital, Hong Kong

Short term benefits such as reduced postoperative pain and respiratory complication, earlier return of bowel function and earlier ambulation are evident from studies in laparoscopic colorectal surgery. Oncological clearance and port site metastasis remain the main controversies that are hovering the application of laparoscopic surgery in colorectal cancer. However, a number of recent prospective studies have revealed encouraging figures in terms of early survival and recurrence rates.

PATIENT SELECTION

Although the operation is slightly easier in the female pelvis, male gender is by no means a contraindication to the laparoscopic approach. When we started off the operation in 1999 we excluded patients with previous abdominal surgery and those with a high body mass index. As our experience accumulated, we realized that adhesions need not be contraindication to laparoscopic approach, and we have subsequently included patients with previous abdominal surgery and those with obese body build into our study.

On the other hand, patients with locally advanced tumour should be evaluated and selected with caution. In these cases not only oncological safety might be compromised by the laparoscopic approach but also many at times palpation is necessary to guide the correct plane of cleavage. Thus we include endorectal ultrasound or CT scan (if the tumour is stenotic) in the assessment of patients with mid or low rectal carcinoma, and those with possible perirectal involvement.

THE OPERA TION

We have previously reported our technique and initial results. 1. Mobilization of the Sigmoid Colon and Rectum

The lateral peritoneal attachment of the sigmoid is first divided. After the sigmoid colon has been mobilized, two mesenteric windows are created at the sigmoid mesentery, one at the level of rectosigmoid junction and the other at mid-sigmoid level. Two
cotton tapes are then tied around the bowel through the windows. By grasping the lower cotton tape to and fro, the assistant could provide the necessary counter-traction and exposure for subsequent mesenteric division and rectal mobilization. The inferior mesenteric artery and vein are then separately divided with staples near the aorta. To ensure a subsequent tension-free colo-anal anastomosis low down in the pelvis, it is important that division of the inferior mesenteric vessels should be as close to the aorta as possible (i.e. high ligation).

Attention is now turned to the pelvis. The right and left hypogastric nerves should now be clearly visualized on the presacral fascia as two structures going downward and diverging outward in the pelvis. The presacral plane is dissected anterior to the nerves and followed as far as is comfortable. The anterior peritoneal reflection is then incised. In the male, the plane is developed between the anterior mesorectum and the seminal vesicles and in the female between the anterior mesorectum and the upper vagina. Following this, the lateral ligaments on either side of the rectum are divided, and the whole rectum (and mesorectum within the fascia propria) is mobilized down to the pelvic floor muscles. By this stage the rectum should consist of a denuded muscle tube relatively free of mesorectum. An atrumatic forceps is then used to occlude the rectal lumen just below the tumour to allow distal cytocidal washout from below; after that the rectum is divided with the rectal lumen just above the pelvic floor.

2. Mobilization of the Distant Transverse Colon and Splenic Flexure
The second surgeon continues to provide counter-traction using the left iliac fossa ports by holding the proximal cotton tape. Starting from the mid-transverse colon, the greater omentum is gradually peeled off from the transverse mesocolon. The splenic flexure is then gradually taken down and mobilized off the Gerota’s fascia. Mobilization is considered adequate if: (1) the splenic flexure could be swung to the midline; and (2) the sigmoid-descending junction could go to the true pelvis without undue tension.

3. Exteriorization and Resection of the Specimen, and Creation of the Colonic J Pouch
An approximately 4-6cm gridiron incision is made in the left iliac fossa. The wound is protected with plastic bag, and the specimen is extracted and excised. A 5-6cm long colonic J pouch was fashioned with a 80mm linear cutter using either the descending or the proximal sigmoid colon.

4. Intracorporeal anastomosis and Creation of Covering Ileostomy
Intracorporeal pouch-anal anastomosis is performed with the circular stapler under laparoscopic view, extreme caution being exercised to avoid inadvertent stapling of the levator muscles or adjacent structures. A point in the terminal ileum some 20cm from the ileoaeceleal valve is then identified for the formation of covering loop ileostomy, which we routinely perform for all our patients after TME and colonic J pouch-anal anastomosis.

RESULTS OF LAPAROSCOPIC TME
As the operation was reported only recently, long terms results of laparoscopic TME are not yet available. We have previously reported our results in 5 patients, with a mean operation time of 208 minutes. Since then we have attempted laparoscopic TME in 30 patients up to May 2001. We were able to bring down the mean operation time to 180 minutes, with a median blood loss of 80ml. There was neither conversion nor procedure-related mortality. Half of the patient had Dukes’ C disease. The median follow-up period was 12.5 months. There was no local or port-site recurrence. Four patients (13%) with Dukes’ C diseases developed distant metastases: two patients died of the metastatic disease while one died of an unrelated cause. Cancer-related death was 6.7%. Bowel function was precisely. Just like other surgery, experience counts and remains to be the most important factor governing success.
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CONCLUSION

With maturation in laparoscopic skills and advances in camera technology and instrumentation, laparoscopic surgery for mid and low rectal cancer is feasible in well selected patients. In our experience, paying attention to details of laparoscopic techniques allows one to perform total mesorectal excision safely and precisely. Just like other surgery, experience counts and remains to be the most important factor governing success.

REFERENCE