Laparoscopic Colorectal Surgery

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History

- 1982 Semm performed first Laparoscopic Appendicectomy
- 1987 Mouret performed first Laparoscopic Cholecystectomy
- 1992 First UK Laparoscopic Training centres established

Operations Performed Laparoscopically

- **Ileo-colic resection**
- **Segmental colectomy/ anterior resection of the**
- **rectum for cancer**
- **Segmental colectomy for benign disease**
- **Rectopexy**

Advantages and disadvantages of the laparoscopic approach

- Smaller wounds
- Less pain
- Faster recovery

- Teaching/audit

- Port site recurrence
- Oncological margins
- Cost
- Longer operation
- Learning curve
- ‘Off camera’ injury
- Long term outcome data

Advantages – Immune Response

- Open surgery related immunosuppression was associated with increased tumour growth

  Allendorf JD et al. Increased tumour establishment and growth after open vs laparoscopic surgery in mice may be related to differences in post-operative T-cell function. Surg Endosc 1999;13:233-235

- Post operative plasma from patients undergoing open operations stimulated growth of the HT-29 human colon cancer cell line. The magnitude of the effect correlated with incision length and laparoscopic surgery was not associated with such changes

  Kirman et al. Plasma from patients undergoing major open surgery stimulates in vitro tumour growth: lower insulin-like growth factor binding protein 3 levels may, in part, account for this change. Surgery 2002;132:186-192

Port site recurrence – recent results

- 30 / 3547 (0.85%)

  Wittich P et al. (2000) Port site recurrences in laparoscopic surgery. In: Kockerling F. Port site and wound recurrences in cancer surgery. Heidelberg. Springer-Verlag pp 12-20

- 11/1114 (1%)

  Chapman AE et al. (2001) Laparoscopic assisted resection of colorectal malignancies a systemic review. Ann Surg 234:590-606

- Strasbourg series has 0% in 1000 cases
- Italian registry reported 0.9% in 1753 cases

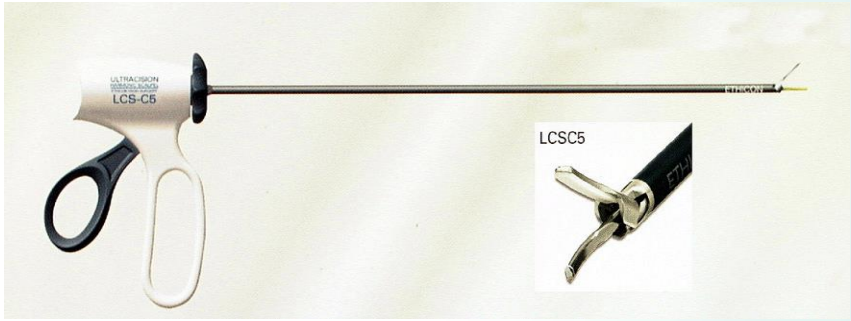
- Total in hospital costs $9811 vs $11,207

  Musser et al. Laparoscopic colectomy: at what cost? Surg Laparosc Endosc 1994 4:1-5

Takes longer

- 1055 patients (all randomised) showed increase of

  20 – 60% in time of operation



Abraham NS et al. (2004) Meta-analysis of short-term outcomes after laparoscopic resection for colorectal cancer.

- 12 RCT's 2512 patients
- Adequate clearance in both groups
- On average LR took more than 30% longer to perform but had an associated morbidity rate of at least 30% lower than that of COR.
- Haemorrhage / blood transfusion, reoperation, cardiorespiratory complications and anastomotic leaks favoured LR though not significant

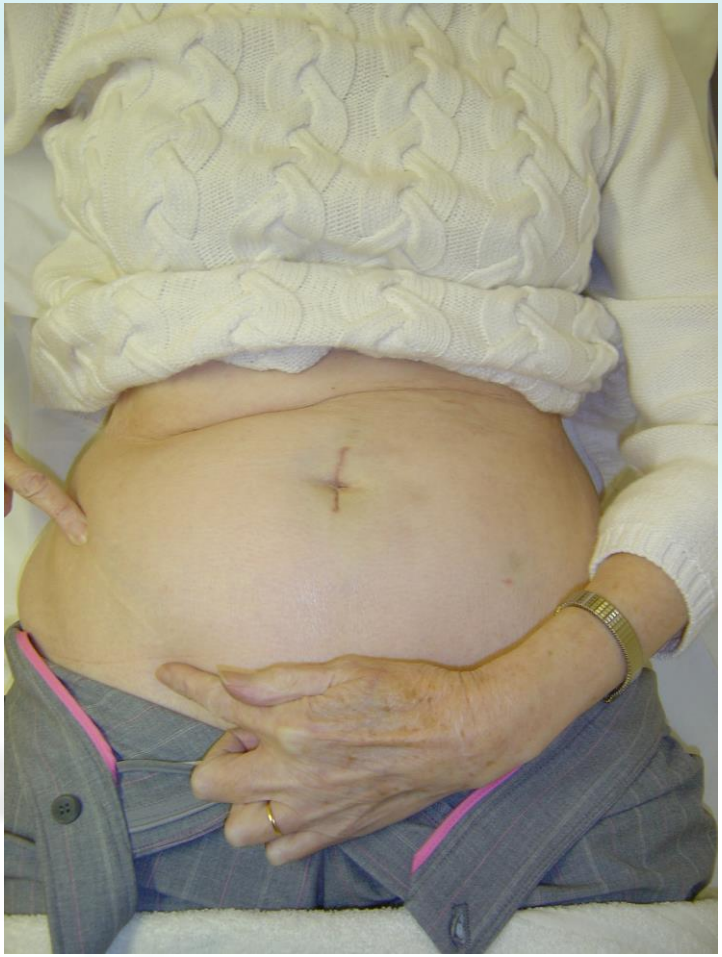
Benefits to the Surgeon

- Safe, better visualisation, improved dissection,
- reduced blood loss using harmonic scalpel
- Potential benefits for training
- Potential to improved quality
- Reduced post operative pain
- Reduced hospital stay
- Improved cosmesis
- ?? Improved survival

Benefits to the patient

- Less scaring both internal and external
- Less pain
- Shorter hospital stay
- Quicker return to activities

Laparoscopic Surgery



UK Perspective

Association of Endoscopic Surgeons of Great Britain & Ireland

Survey conducted by Professor Roger Motson & Mr Michael

Machesney in 2001

How many laparoscopic specialists in the UK are performing laparoscopic and laparoscopic assisted colorectal procedures ?

Questions:

Procedures performed regularly in 2001. Procedures intended to be started in the future. Awaiting evaluation of techniques

Respondents:

142 questionnaires returned out of 377 (37.7%) Colorectal procedures being performed:

Appendicectomy	**28.2%**
Rectopexy	**20.4%**
Colectomy for benign disease	**19.7%**
Colectomy for malignant disease	**11.3%**
Anterior resection	**9.9%**

AESGBI Survey 2001

Conclusions

Fewer than one in five of the members of the AESGBI were performing or planning to perform laparoscopic procedures for colorectal malignancy

One in 3 were performing or planning to perform laparoscopic procedures for benign disease

Advances In Treatment of Colorectal Cancer

Intensive care facilities & anaesthesiology

Adjuvant chemotherapy

Neoadjuvant radiotherapy for rectal cancer

Surgical technique -TME

-Laparoscopic approach

National Institute for Clinical Excellence (NICE)

NICE guidance 2000

- “Laparoscopic surgery for colorectal cancer should
- only be undertaken as part of a randomised clinical
- Trial.”

NICE Concerns regarding laparoscopic colorectal surgery

- Resection less complete
- Cannot control bleeding
- Port site recurrence

MRC CLASICC trial

Conventional vs Laparoscopic Assisted Surgery In Colorectal Cancer

Preliminary results presented to the Tripartite Colorectal Meeting (Melbourne, October 2002)

No difference in:

- Resection margins
- Lymph node yield
- Intra-operative morbidity
- 30 day morbidity & mortality

EVIDENCE FOR LAPAROASCOPIC APPROACH TO COLORECTAL CANCER

American COST Study Group trial *(Weeks et al JAMA Jan 2002)*

Laparoscopic approach is

- **-safe**
- **-shorter hospital stay**
- **-reduced post op analgesic requirement**

But

- **-average of 2 cases per centre per month**
- **-high conversion rate (26%)**
- **-high positive margin rate**

Barcelona RCT *(Lacy et al Lancet June 2002)*

Laparoscopic approach

- **-less morbidity**
- **-shorter hospital stay**
- **-lower rate of tumor recurrence**
- **-improved cancer related survival**

Conclusion

- Few experienced laparoscopic colorectal surgeons
- Few training opportunities
- NICE proposes deferring review until CLASICC trial final data is published

2002 – The Watershed Year

- Association of Coloproctology of Great Britain & Ireland has realised the potential
- Ethicon Endosurgery sponsored training fellowships in place

Enhanced recovery Programme for Laparoscopic Colorectal Surgery

Key principles

- Improved patient education
- High protein supplement drinks avoidance of insulin resistance.
- Patients up and mobilising early, vertical nursing.
- Enhanced patient motivation
- Sacred cows! Patients drink in recovery.

Team Approach

Challenges

- Training staff both nursing and medical
- Challenging “the old ways” and pushing the boundaries.
- Learning from the experience and implementation of change.
- Keeping the momentum
- Application to other specialities

Multi-modal Rehabilitation

- Intensive pre/post operative education
- Empowering patients to participate in their own care-time lines.
- Comprehensive nutrition
- Laparoscopic surgery
- Improved pain control
- Removal of drips and drains early.

Discharge Planning

- Commenced on the Preoperative visit
- Key point - involve carers
- Identify any problems, ie patient lives alone, toilet on the second floor etc
- Patient given time lines to work with

Factors Affecting Discharge

- Recovery from surgery depends on several factors.
- The trend for “fast track surgery” is set to increase.
- Our aim is to discharge patients when they are ready to go in a shorter time frame.

Leaving Ward

- On leaving ward: names on white board
- Patient given strict instructions not to phone GP !
- Contact numbers given
- Daytime
- On call

Stoma Care

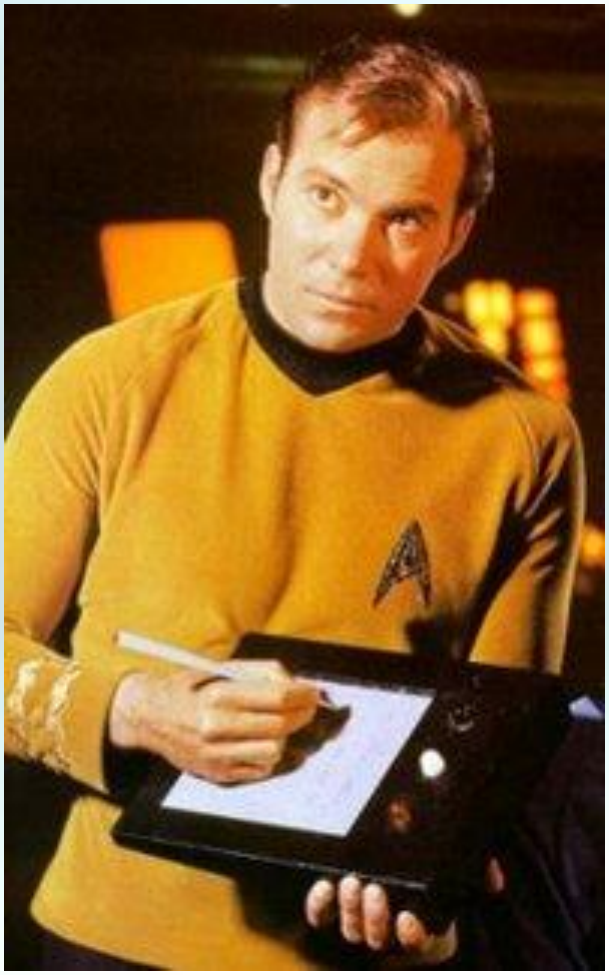
- Stoma care team available for domiciliary visit should it be necessary.
- One piece appliance
- Teaching begins at the preadmission visit

Discharge Information Leaflet

- Anastomotic leaks.
- Information about what is normal abdominal pain and what is abnormal
- When to seek advice
- Treatment room on ward: will be used as a triage room to bypass A&E.

Future Plans for Change

- Move away from Picolax to enema pre op for anterior resections.
- Admit on day of surgery
- Review of epidural protocol ie not necessarily for every case.
- Research project
- Setting up of study days.



“My God, Jim, we can’t leave him in the hands of 20th century medicine. Those butchers will use needles and knives and cut open his belly and chest. It is still the dark ages. You have no idea what those barbarians will do.”

Dr. James McCoy
Starship Enterprise
Star Date 2394.3

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Questions