

**Laparoscopic Colorectal Surgery: A Radical Change to Local DGH Practice.**

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**Abstract**

**Introduction:** Laparoscopic colorectal resections(LCR) has been on the scene for more than twenty years, but the rate of uptake among colorectal surgeons is still very low especially in the local District General Hospitals (DGH). This is despite the well known short term benefits and comparable long term oncological outcome to open resections. The aim of this study is to analyse the effect of introducing LCR to a local DGH practice during the initial learning curve.

**Method:** The outcomes of patients who had LCR between October 2009 and December 2010 (Grp LCR) were compared with patients who had open resection during the same period (Open A) and those who had open resection during a 14month period prior to this (Open B). The outcome parameters were length of hospital stay and complications.

**Results:** 111 patients aged 24 to 88 (mean 65.4) who had colorectal resections between July 2008 and December 2010 were analysed in three groups (A-n31, B-n41, and C-n39). The age, indication for surgery and staging were similar in all groups. The mean length of stay was 6days in Grp A, 10days in B and 9.6 in C. The complication rate was 9.6% in A, 24.3% in B and 38.4% in C. The mean laparoscopic operative time was 155min and there were 4 conversions.

**Conclusion:** It can be safely deduced that during the initial learning phase of LCR in a local DGH, there is a marked improvement in patient outcome.

**Introduction**

Laparoscopic colorectal resection has been on the scene for about two decades<sup>1</sup>, but the uptake among colorectal surgeons have been at a very slow pace<sup>2,3</sup>. The National Institute for Health and Clinical Excellence (NICE) implementation uptake report for laparoscopic colorectal surgery<sup>4</sup> shows that in the 2008/2009 year, there were 22% finished consultant episode (FCE) for the laparoscopic approach to colorectal cancer resection. Although this is a marked improvement on the preceding year (8.8%), it still lags behind the practice in Australia where 27.5% of resections were performed laparoscopically<sup>5</sup> during the same period. However there has been a gradual increase in uptake over the last ten years with current levels at 57.8% for 2017<sup>6</sup>.

This slow rate of uptake is most stark in the local DGHs, due to various factors. Although the short term benefit of LCR is well known and the concern about the long term oncological outcome has been adequately addressed in various studies<sup>7-9</sup>, the issue of patient safety is still a sore point in the early stages of the learning curve<sup>10</sup>. This concern is more pronounced in the DGH setting which is a peculiar practise environment where the core specialisation and high volume numbers in the larger

specialist setting is absent. There is also the disadvantage of not having an onsite mentor to provide guidance during the initial learning phase of laparoscopic colorectal resection. It is therefore a challenge to most colorectal surgeons in this unit whose laparoscopic experience is limited to laparoscopic cholecystectomy to decide when to launch out into the deep.

The aim of this study is to measure the effect on patient outcome during the initial learning phase of laparoscopic colorectal resection in a local DGH.

### **Method**

All patients requiring elective colorectal resection (benign and malignant) between July 2008 and December 2010 under a single consultant colorectal surgeon (Phillip Burgess) were reviewed retrospectively. Excluded were patients who had abdominoperineal resection, as this was done mainly as an open procedure. Laparoscopic colorectal surgery was introduced into the surgeon's practice in October 2009 after a six months period of training and mentorship under the UK National training programme for laparoscopic surgery (LAPCO)<sup>11</sup>. For the purposes of this study, the patients were divided into three groups: LCR Group were patients who had laparoscopic colorectal resection, group Open A had open colorectal resections, post laparoscopic colorectal resection training and Open B group had colorectal resection prior to the introduction of laparoscopic surgery. The outcomes for the three groups were then compared.

### **Findings**

A total of one hundred and eleven patients aged between 24 and 88 were involved in this study, the demographic factors, indication for surgery and tumour staging were similar in all three groups. There were 31 patients in the LCR group, 41 in Open A and 39 in Open B. There were four conversions from laparoscopic to open surgery, and

about 38% of resections were successfully completed using the laparoscopic approach in this study. The mean operating time for laparoscopic resection was 155min. The mean LOS was 6days, 10days and 9.6days for LCR, Open A and Open B respectively. The complication rates were 9.6%, 24.3% and 38.4% respectively for the three groups. The ratio of resections i.e anterior resection to right hemicolectomy was similar in all groups. There was no mortality in the laparoscopic group.

### **Discussion and Conclusion**

Laparoscopic colorectal resection was recommended by NICE in 2006 as an alternative to open surgery for people with colorectal cancer in whom both procedures were suitable<sup>3</sup>. It is therefore imperative that colorectal surgeons are able to offer this option to patients in their practice.

The department of health data for 2008/2009 showed that only 22% of FCE for colorectal resections were performed using the laparoscopic approach. Although there is no data to support this, it is reasonable to assume that the majority of these resections would have been carried out in the larger tertiary centres rather than the local DGHs. It is therefore important to highlight the importance of surgeons in these DGHs becoming proficient in the laparoscopic approach.

The National training programme in laparoscopic colorectal surgery (LAPCO)<sup>11</sup> was designed in 2007 to provide laparoscopic colorectal surgery training for colorectal consultants in England. This is to fulfil the requirement by NICE that laparoscopic colorectal surgery should be performed by surgeons who had completed appropriate training in the technique and who perform the technique often enough to maintain competence.

The second author is a vastly experienced colorectal surgeon of almost twenty years, with a substantial

experience of laparoscopic cholecystectomy. He had a six months preceptorship under the LAPCO programme in addition to attending wet lab courses in laparoscopic colorectal resections.

The aim of this study was to determine the safety of laparoscopic colorectal resection during the initial learning phase, and as far as we are aware this is the first study to assess this parameter after the LAPCO training programme in a DGH setting. The study showed that there is a marked improvement in complication rate and the LOS was markedly reduced with the laparoscopic approach. Although the patients were a selected group, 38% of patients still had their resections completed with the laparoscopic approach during the first year and this has been increasing as we became more experienced and proficient.

It can therefore be concluded that during the initial learning phase of laparoscopic colorectal resection on completing the LAPCO training programme in a DGH, there is a significant improvement in patient outcome with no adverse event documented.

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