SUMMARY

Minimally invasive surgery is the most important revolution in surgical technique. Its development was facilitated by the introduction of miniaturised video cameras with good image reproduction. Laparoscopic cholecystectomy was the first procedure to be widely accepted.

The use of minimally invasive approaches in the surgical management of colorectal diseases continues to gain popularity. Laparoscopy has clear advantages and can be performed in a majority of patients at surgical centers with experienced surgeons. As technology marches forward, newer techniques will continue to advance the quality of patient care.

The indications for laparoscopic colectomy are essentially the same as the indications for an open procedure, and can be subgrouped into colectomy for benign disease and for malignant disease.

Benign disease: This includes inflammatory bowel disease (ulcerative colitis and Crohn's disease), diverticular disease, rectal prolapse, and colonic dysmotility.

Malignant disease: This includes polyps not amenable to colonoscopic resection, colorectal cancers, and hereditary colon cancer syndromes such as familial adenomatous polyposis, hereditary nonpolyposis colorectal cancer (HNPCC).

Most studies have shown a decrease in both the dose and duration of parenteral analgesia required after laparoscopic surgery. Also the majority of trials show that on average, both time to flatus and bowel movement are a day earlier in laparoscopic surgery than open surgery. This also translates into earlier resumption of oral intake.

The overall hospital stay is decreased by 1 to 2 days for laparoscopic surgery for the reasons mentioned previously.

Laparoscopic procedures have to be safe and successful for the management of colorectal diseases. Laparoscopic surgery for Crohn's disease should be considered as preferred operative approach for primary resections.

The magnitude of benefits achieved with laparoscopic colectomy for diverticular disease in the hand of experienced laparoscopic colorectal surgeons may soon be sufficient to make laparoscopic colectomy as a routine procedure. However, complicated diverticular disease does present additional challenges, and should not be undertaken without considerable experience in laparoscopic assisted colectomy.

Laparoscopic surgery for total colectomy or proctocolectomy for ulcerative colitis seems to be safe with good long-term results. Whether or not there are advantages over the open method remains to be proven in larger prospective comparative studies.

There is now a wealth of evidence confirming the safety and feasibility of laparoscopic colorectal cancer surgery. In the vast majority of reports, postoperative mortality rates following laparoscopic colorectal cancer excision were low. Mortality rates were similar, and there was no increased overall morbidity when compared with open surgery in most comparative studies.

Local and distant recurrence rates are similar to those for open procedures, with no difference in the patterns of recurrence. Advanced disease can be a challenge laparoscopically; however, there are no differences in the patterns or frequency of recurrence when compared with open procedures.

Several studies evaluating the effect on cost with laparoscopic approach have

suggested that the higher cost is offset by the faster recovery. However, the results are inconsistent, primarily because of differences in perspective and methodology. Operating room costs were found to be higher in the laparoscopic group with no difference in overall hospital cost; others found that the higher operating room cost was offset by the overall lower hospitalization costs in laparoscopic group.

The laparoscopic approach is intolerant of cases that are difficult due to adhesions, obesity, or bulky or fixed tumours. There has to be a low threshold for conversion in these patients. Inability to identify the ureters, doubtful respectability, and equipment failure are other reasons to consider conversion.