causing some serious problems because it carries with it the 'risks of inserting a sharp object into the patients abdomen without the margin of relative safety provided by established pneumoperitoneum."(White, 1991) The instruments are potentially dangerous and the surgeon must have a feel for the two dimensional video monitor. In laparoscopic surgery there is no depth perception.

Laparoscopic instruments are, by necessity, extremely long and thin and, therefore, can easily penetrate most abdominal organs. As long as the tip of an instrument can be seen by the surgeon, it's position can be easily adjusted. Loss of depth perception is a part of the difficulty the surgeon must overcome when learning the skill of laparoscopic surgery. The difficulties of working without the benefit of depth perception become apparent even when performing such simple tasks as dividing vessels. Endoscopic surgery is contraindicated in those patients with ascites, who are obese, or who have abdominal scarring.

The advantages of endoscopic surgery are many. The patent experiences a rapid disappearance of pain, less chance of wound infections, no would dehiscence, no incisional hernias, and a quicker return to their daily activity level. There is less overall cost to the health care system as hospital stays are shortened. In an evermore budget conscious system, this new technology will pave the way for future surgeries. Endoscopic surgical instruments are expensive. Hospitals increase that expense by using disposable instruments (Trocars). By using reusable instruments, the cost is approximately 50% less per procedure.

Conclusion

There are many up-to-date articles regarding new endoscopic surgical techniques. In this paper, I have explored the baseline techniques and there are, I am sure, many variances. Endoscopic surgery is obviously where medical and surgical technology is heading. The treatment mode of the future is outpatient care as much as possible. Because these procedures are new, not every surgeon may be willing to try them, or, not all who try may be skilled in the procedures. When successfully performed endoscopic surgery provides the surgical team with the means to eliminate the discomfort and the disability patients encounter while shortening surgical, anesthetic, and recovery time, and reducing overall patient costs.

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The Joys of Initiating Laparoscopic Surgery in a Small Rural Hospital

By Dianna Havin & Patricia Frayne

It all started with a phone call from our surgical supply representative regarding an upcoming seminar on laparoscopic cholecystectomy.

Our hospital is a 71-bed acute care facility in Peace River, a town of 7,000 with a catchment area of 16,000, situated 500 km north of Edmonton, Alberta. There are two operating theatres in our hospital and we operate each morning, doing three to five cases per day. There are three nursing positions, one full-time, one three-quarter time, and one half-time, and we rotate between circulating, scrub and recovery room duties. There are four other nurses working in the hospital who share on call duty and do relief work in the O.R. when necessary.

We had discussed doing laparoscopic surgery for several months, and after the phone call regarding the seminar, we consulted with our two surgeons and our Director of Patient Care. It was decided that the four of us, the two G.P. surgeons and ourselves, would attend the upcoming course in Vancouver in February, 1992.

The seminar included lectures for the surgeons and nurses, some together and others separately, and several presentations by our surgical supply representatives. There were also workshops on camera techniques, instruments, capital equipment, setting up the nurses tables, etc. We also attended a one day workshop in the animal lab for the nurses and doctors. The doctors rotated positions - surgeon, assistant and camera man - to gain experience with the equipment. We nurses were able to examine the instruments and handle them as well.

When we returned to Peace River, the real work began. Our physicians arranged their preceptor program with colleagues in Edmonton who were already performing laparoscopic cholecystectomies. They each spent two weeks in Edmonton learning and doing laparoscopic surgery.

A cost comparison of six companies dealing in laparoscopic cholecystectomy systems was undertaken and three different companies were invited to attend our preceptorship weekends to demonstrate their equipment and services. The physicians were able to use two different systems while on their in-service in Edmonton, thus providing them with a wide choice of systems from which, ultimately, to choose.

We organized two preceptorship weekends. The doctors, in order to obtain privileges to perform laparoscopic cholecystectomy as approved by the College of Physicians and Surgeons, were required to perform at least six laparoscopic cholecystectomies as primary surgeon in their own hospital, supervised by a preceptor, meaning a surgeon from a teaching hospital with vast experience in performing laparoscopic cholecystectomy. This involved a lot of planning and preparation on our part and also involved most of the hospital departments.

A pre-admission program was set up, so that part of the admission process could be done ahead of time. The admitting department started the documentation and the charts the day before surgery, but the patients would sleep at home and return the following day, thus

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saving a night's stay in hospital. Consultations were conducted with the ward managers, then a preoperative instruction sheet was drawn-up to be given to the patients when they were preadmitted.

The Lab was required to do a liver profile, as well as the routine preoperative work-up. This was also done on a pre-admission basis, the day before surgery.

Central Supply had to be staffed for each weekend, and their staff had to be instructed in the special care and cleaning of the equipment. Trays were prepared for the trocars, tubings and instruments. We had to set up a whole new "Lap Incision Tray." We had a suggested set up from the surgical supply reps which was adapted to suit our doctors' preferences and our available equipment and space. (We have made a couple of minor changes since first organizing it, but that's been part of the fun.)

The First Patient

Our very first patient was one of our full time ladies from CSR (there are two full time and two casual staff in CSR). She had her surgery on Friday and was back to work on Monday!

The Maintenance Department supplied tanks of $C0_2$ to use with the insufflator. They also helped us set up a temporary stand for the capital equipment using a video stand and an inverted laundry tub. We also had to remember to have them leave the steam on for CSR to use during the weekend (it's usually turned off at 3:00 each day and left off over each weekend).

The hospital seamstress made new laparotomy sheets for us with a larger opening to accommodate the four ports necessary for the surgery.

The laundry department had to be staffed for the weekend, too. They also made-up seven special gown packs with an extra gown for the preceptor, and four laparoscopic cholecystectomy linen bundles.

The Dietary Department was also involved. We operated all day and into the evening on Friday, and then on Saturday into the afternoon. They supplied lunches and snacks for the doctors between cases, and the nurses whenever we could grab a bite.

Both the surgical and medical wings had extra nursing personnel on duty and rooms set aside for our laparoscopic cholecystectomy patients. The pre-admission program helped a bit, as these staffs were able to do their nursing histories the day before surgery.

A schedule was drawn up for the weekend with spaces for the doctors to sign up for assistant or anaesthetist for each case, and nurses to sign up for scrub, circulating or recovery duties. The nurse manager had done laparoscopic surgery while working in Australia before moving to the Peace River Country, and so was able to instruct the rest of the staff on the use and set-up of the equipment.

The equipment all comes apart for cleaning and the nurse has to assemble it before each case. The doctors call it our "clock maker's shop" because there are so many springs, washers, and bits to put together.

First Preceptorship Weekend

For our first preceptorship weekend, we booked eight laparoscopic cholecystectomies - five on Friday and three on Saturday. We started at 0730 a.m. doing two dental surgeries before the Preceptor's plane arrived from Edmonton, then started the laparoscopic cholecystectomies at 1000 and finished at 2300 on Friday. We worked from 0700 to 1600 on Saturday.

There was also one emergency case, an appendectomy which turned out to be a mass in the colon. We ended up doing a bowel resection! These are not done on a routine basis in our theatre, so we were very glad of the visiting surgeon's expertise. During this weekend, sales representatives from companies selling reusable and disposable instruments were invited to show us their equipment. We alternated reusable and disposable systems, which gave us all a chance to try both and gave CSR the time to clean and sterilize the reusable equipment. This worked very well.

During our second weekend, eight cases were lined up, but two patient's were unable to make it. This still gave our physician the mandatory six cases needed for his preceptorship. This was another long two day weekend and again we alternated reusable and disposable set-ups.

Based on our surgeons' preference, a final decision was made on which system to go with. They chose the completely reusable system, but disposable instruments are kept on hand as well, for infected cases, patients with metal allergies, or if extra instruments are needed.

Our equipment arrived in August, 1992. At that time, we also purchased a new electrocautery machine, and since then, another telescope has been purchased so that we can perform two laparoscopic surgeries per day.

There is a high incidence of TB in our area, which means the telescopes have to be soaked for ninety minutes instead of just the routine twenty minutes. The telescopes are soaked for ninety minutes after use for the tuberculocidal effect, and then only need to be soaked for twenty minutes before using them again the next day. We have also purchased the necessary equipment to perform Laparoscopic Bilateral Tubal Ligations. Again, a cost comparison was done before we chose to buy reusable instruments.

Since starting up, we have done 52 Laparoscopic Cholecystectomies, 56 Laparoscopic Bilateral Tubal Ligations, and five Diagnostic Laparoscopies between April of 1992 and February, 1993.

This has been a worthwhile learning experience and we are still discovering ways of improving our technique. One thing we had problems with was the telescope frequently fogging. Although the telescope was warmed ahead of time, after attaching the light source and camera it was kept ready by the surgeon. Now, we bring up a tray with a K-basin with hot water and keep the end of the telescope in the bath until it is inserted into the port. There has been no further problems with fogging.

This has been a most exciting time for all of us and we are proud to have been part of it. We hope the describing of our experiences will be helpful to our nursing colleagues, especially those in other small, rural hospitals. ■

New surgical technique for breast implant surgery

"Now there is good news for women seeking breast enlargement," says plastic surgeon, Dr. Hugh McLean of the McLean Clinic, Toronto and Mississauga. He is the first Canadian to employ a "belly-button surgery" technique developed in the U.S. for scar-free breast augmentation which uses a safe, saline implant.

Through an incision in the navel, McLean manipulates an access tube under the skin to the breast area. An endoscopic fitted with a telescopic camera allows the doctor to check his progress on a television monitor. McLean manoeuvres the empty implant into place and then fills it with sterile salt water.

"I call this breast enlargement by remote access," explains McLean. "It is the leading edge in breast augmentation technology. It has a high margin for safety and leaves no visible scars - essentially 'seamless surgery'."

Tens of thousands of women have breast enlargement implants each year, says McLean. He believes this new technique will provide a much safer operation for women wanting this procedure in the '90s.

Hearing loss may signify a brain tumor

Irreversible nerve damage can result from the delayed diagnosis of a possible cause of one-sided hearing loss, ear noise, loss of balance and other unexplained problems.

These symptoms may be early warning signals of acoustic neuroma, a slow growing tumor which attaches itself to a nerve of the inner ear. If allowed to grow it can have severe consequences, however, if diagnosed early the effects usually are minimal.

Dr. Charles Tator, one of Canada's leading surgeons, states in a recent article, "All too often patients are referred to the neurosurgeon only when their tumor has become large and has already involved the delicate surrounding nerve fibres. As a neurosurgeon with special interest in this condition I cannot stress too strongly the importance of early diagnosis."

Such marvellous advances have been made in modern surgery that this tumor, if diagnosed in an early stage, can be removed with little or no damage to surrounding nerves. The facial nerve can be monitored during surgery, sparing the dreaded loss of facial animation. Even the ear nerve can be monitored and hearing saved in some cases.

For medium to large tumors, recovery from the necessary surgery can be longterm. Complications can be almost insurmountable-severe balance problems, dry eye requiring constant eye care, difficulty talking and swallowing, headaches, total loss of hearing on the affected side and worst of all a paralysed face with resulting emotional and psychological trauma.

The Acoustic Neuroma Association of Canada is most interested in the number of patients who, in many cases, have been ten or more years receiving an accurate diagnosis. Acoustic neuroma has, until recently, been considered rare and difficult to diagnose and symptoms are often attributed to other causes. Now, however, there is an extremely accurate non-invasive test known as brainstem auditory evoked responses (BAER) which, coupled with magnetic resonance imaging (MRI), can detect even the smallest obstruction. Persons having these symptoms should insist on having this test done.

Further information may be obtained by writing to: **Acoustic Neuroma Association of Canada, Box 369, Edmonton, AB TSJ 2J6. Phone: (403) 428-3384.**