The Current Status of Gynecological Laparoscopic Surgery in Educational Facilities in Japan

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MURAKAMI, T., KONNO, R., TERADA, Y., SUGAWARA, J., YAEGASHI, N. and OKAMURA, K. The Current Status of Gynecological Laparoscopic Surgery in Educational Facilities in Japan. Tohoku. J. Exp. Med., 2001, 193 (3), 175-180 — A questionnaire survey was administered by Tohoku University hospital to investigate the current status of gynecological laparoscopic operations in teaching hospitals in which residents were trained as obstetricians and gynecologists. Thirty-eight senior doctors in 18 hospitals were sent a postal questionnaire. The response rates of facilities and doctors were 94.4% and 76.3% respectively. Diagnostic and operative laparoscopy was performed in all of the hospitals surveyed, however only a few hospitals performed more than 100 laparoscopies per year, and many surgeons did not perform advanced laparoscopic operations including hysterectomy, myomectomy and lymphadenectomy. Half of the doctors performed minilaparotomy, which is a so-called “open” technique. The standard surgical style involved the use of a carbon dioxide (CO₂) pneumoperitoneum and an endoscope 10 mm in diameter. Unipolar endocoagulating instruments were generally used for hemostasis and incision. Most of the doctors surveyed thought that operative laparoscopy would become a necessary procedure in gynecological field, and half of them hoped to receive training in the technique. Instruction of expert endoscopic surgeons is necessary, especially in teaching hospitals, for the spread of safe and advanced laparoscopic surgery. An educational and training system for established surgeons as well as for young residents is urgently needed in Japan. ——— laparoscopy; questionnaire; senior doctors; teaching hospital

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Operative laparoscopy in the gynecological field has become widespread during the last decade in Japan. This procedure has proved a great boon to patients because it reduces postoperative pain, requires shorter recovery periods and results in smaller surgical scars. Gynecological laparoscopic surgery will hence be a customary procedure for all gynecologists in the future.

Laparoscopic operations, however, differ from open laparotomies in several ways; they involve two dimensional and one-way views, limited and difficult surgical manipulations, and they require special and unique instruments. Like any other surgical technique, this new technique involves a risk of characteristic complications (Harkki-Siren and Kurki 1997; Jansen et al. 1997; Chapron et al. 1998). The proper and safe spread of gynecological laparoscopic surgery is needed for both patients and doctors. Every surgeon, especially resident, had better gain rich experiences practically in order to make a good expert. In the Tohoku University-associated teaching hospitals, eighteen hospitals have residents in the field of obstetrics and gynecology (OB/GYN). We performed a questionnaire survey to investigate the current status of laparoscopic operations in educational facilities serving OB/GYN residents in the Tohoku region of Japan, and to help clarify the best means for a proper popularization of this procedure.

**Subjects and Methods**

Eighteen teaching hospitals in which residents were trained as obstetricians and gynecologists participated in the Tohoku University Hospital survey. Thirty-eight senior doctors in these facilities were selected, and were sent a postal questionnaire in July 2000 along with a self-addressed, stamped envelope. The questionnaire items concerned the actual practice, procedures, and problems of gynecological laparoscopy in each hospital.

The results of the survey are described using the occupancy rate of the number of valid answers.

**Results**

The response rate of facilities was 94.4%. Out of a total of 38 clinician surveyed, 29 responses were returned. The overall response rate of doctors was therefore 76.3%.

Table 1 shows a profile of the educational facilities surveyed. All of the hospitals surveyed had one or more OB/GYN residents, 152 to 1026 (median = 574) deliveries, and 108 to 613 (median = 291) operations per year.

Ninety-three percent of the doctors surveyed thought that laparoscopic surgery would become a general procedure in the gynecological field (data not shown).

Diagnostic and operative gynecological laparoscopy was performed in all hospitals. The number of laparoscopic operations per year was shown in Fig.1. Among the hospitals surveyed, 11.8% performed more than 100 operations laparoscopically per year.

Half of the doctors chose the “open” method in the approach into the abdominal cavity, and 60% used carbon dioxide (CO₂) pneumoperitoneum (Fig. 2A). A 10 mm in diameter endoscope was most often used, and unipolar endocoagulating instruments were

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<th>Table 1. The profiles of the Tohoku University-associated hospitals surveyed</th>
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<td>Number of OB/GYN residents</td>
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Fig. 1. The number of laparoscopic operations per year in hospitals surveyed. Four possible responses were given for this question.

used more frequently than bipolar units or ultrasonically activated shears for hemostasis and/or incision (Figs. 2B and 2C).

Most of the doctors carried out operations for diagnostic procedure, ectopic pregnancy, ovarian drilling or biopsy and benign ovarian cysts laparoscopically (Fig. 3). On the other hand, the number of doctors performing advanced laparoscopic surgery, including hysterectomy and myomectomy, decreased markedly.

Half of the doctors surveyed thought the most necessary prerequisite to performing diffuse operative laparoscopy was acquisition of the necessary surgical skills, and sufficiency of OB/GYN doctors was of secondary importance (Fig. 4).

In an emergency, such as an ectopic pregnancy or a torsion of the pedicle of a ovarian cyst, 57% of the doctors surveyed said that they could perform an emergent laparoscopic operation, but that the reason they did not was due to a shortage of operative instruments, insufficiently trained paramedical staff or a shortage of anesthesiologists in order (data not shown).

Fig. 2. A: The methods of approach into abdominal cavity and ensuring an operative view. B: The diameter of an endoscope in popular use in laparoscopy. C: The device for homeostasis and/or incision in common use in laparoscopy. Several possible answers were given for each question and respondents were instructed to take a first use.
Fig. 3. The portion of the operation used to be carried out by senior doctors surveyed.
Respondents were permitted to give more than one answer to this question.

Fig. 4. The necessary condition to increase the use of spreading laparoscopic surgery.
Six possible responses were given for this question and respondents were instructed to choose a most important one.

DISCUSSION

Each of the teaching hospitals surveyed is the main medical center for its area, and the number of staff members, deliveries and operations per year demonstrates that these institutions rank above the average in Japan. This survey therefore reflects the present standards of gynecological laparoscopic surgery in general hospitals in Japan. Currently, almost all gynecological intraabdominal surgery for treatment of benign diseases have been performed laparoscopically. Although this operation has been introduced to all hospitals surveyed, the number of laparoscopic operations per year is still unexpectedly low. Moreover, the number of the doctors performing advanced laparoscopies is less than the number of doctors carrying out emergent laparoscopies. The main obstacle to increased performance of active laparoscopy is insufficient acquisition of technical skills.

This survey also revealed the current standard style of laparoscopy in general hospitals. The standard procedures of approach into abdominal cavity and ensuring an operative view in these hospitals are the use of minilaparotomy and CO$_2$ pneumoperitoneum. The insertion of a Veress needle for establishing the pneumoperitoneum is faster, requires a smaller incision, and is not associated with leakage of CO$_2$ (Bonjer et al. 1997), but this “closed” method is performed by a minority. A French study revealed one-third of the complications occurred at the set-up phase for laparoscopy,
namely, creation of the pneumoperitoneum and installation of the trocars (Chapron et al. 1998). The surgeons surveyed choose the “open” technique to portion the first trocar safely in order to avoid such blind procedures. This “open” method for the introduction of laparoscopy decreases the risk of visceral and vascular injury certainly (Bonjer et al. 1997). Following minilaparotomy, 40% of clinicians surveyed perform the gasless method of laparoscopy. Gasless laparoscopy with the use of a mechanical lifting device has advantages in the point of intraoperative ventilatory and hemodynamic parameters (Johnson and Sibert 1997), however, many surgeons surveyed prefer pneumoperitoneum to the gasless method because of the better surgical view obtained. Optical trocar which can be safely positioned under direct visualization (Halffeldt et al. 1999) will be carried out more frequently for establishing pneumoperitoneum in the near future.

Advances in laparoscopic surgery have already been achieved with the use of an endoscope 3 mm in diameter and a laser device, however these new instruments have not been popular in general hospitals yet. A 3 mm diameter endoscope is inferior to a 10 mm one in the area and brightness of the field of view. The use of unipolar and bipolar instruments are popular, because these instruments are familiar to the clinicians in laparotomy, and these instruments are easy handling and inexpensive. But attention is needed by clinicians who use these devices because of complications induced by characteristics of electrocoagulating devices, especially unipolar ones (Tucker 1995). Bowel injuries, which decrease with added experience, often go unnoticed during the surgical procedure, and are only diagnosed subsequently (Chapron et al. 1998).

These results demonstrates that the many clinicians are conservative and circumspect with respect to a new technology. They have therefore preferred the “open” technique, which is similar to techniques they have already mastered, and have avoided the laparoscopically assisted vaginal hysterectomy (LAVH), although only total laparoscopic hysterectomy can be adequately performed with the unipolar and bipolar instruments they have already used. It is necessary for surgeons to train themselves how to operate all old and new devices and procedures. In fact, half of the doctors surveyed regard the learning and training of technical skills as necessary for active surgery.

Hopkins (2000) demonstrates that all laparoscopic surgeries, like other operations such as radical hysterectomy and microsurgery, may not be performable by everyone. In fact, advanced procedures such as laparoscopic myomectomy and paraaortic lymphadenectomy might be difficult for every gynecologist to perform. However, operations such as caesarean sections and dilation and curettage (D&C) are essential procedures for all OB/GYN clinicians. Similarly, some simple laparoscopic operations will be indispensable for the average gynecologist to learn. Diagnostic laparoscopies appear to be safe compared with more complex laparoscopies (Harkki-Siren and Kurki 1997), however, complications may occur and some surgical procedures may be required in only such cases. Every gynecologist should therefore train himself for operative laparoscopies at any rate. In gynecological endoscopy there are two different groups of physicians, established surgeons as well as young residents, requiring training (Chapron et al. 1997). There is an urgent need to construct an educational and training system for all gynecologists in Japan.

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References


