

LAPAROSCOPIC SURGERY : INDIAN ASSOCIATION OF GYNAECOLOGICAL ENDOSCOPISTS' (IAGE) MEMBERSHIP SURVEY

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SUMMARY

This is a survey of 6945 Laparoscopic Surgeries reported by 5% of the members of Indian Association of Gynaecological Endoscopists.

Basic laparoscopic surgeries were performed in 59.5% cases; Intermediate in 25.8% and Advanced in only 14.7% cases. Majority of cases were done under general anaesthesia (68.6%). Air for pneumoperitoneum was used in almost half cases (46.1%). Electrosurgery was used by 80% members. 85.7% members used improvised irrigation suction cannulas such as 'PEPSI'.

Major complications were reported in 22 cases (3.16 per 1000). There were 4 bowel injuries, 17 haemorrhages and 1 bladder injury needing laparotomies in 14 cases (2 per 1000).

There were no deaths.

A survey of laparoscopic surgery performed by the Members of the Indian Association of Gynaecological Endoscopists' was carried out in October, 1993 and is reported herewith :

Only 35 (5%) members out of a total membership of 716 answered the ques-

tionnaire sent out. These 35 members have performed 6945 laparoscopic surgeries. 17 out of 35 members, i.e. 48.5% have performed 50 or less surgeries.

BASIC LAPAROSCOPIC SURGERY

These were performed by all members and accounted for 4133 (59.5%) of 6945 cases. Ovarian and other biopsy was the commonest procedure done in 1062

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(25.7%) cases. Electrocoagulation of endometriotic foci (Stage I) was carried out in 1029 (24.9%) cases. Aspiration of functional ovarian cysts less than 5 cm was performed in 951 (23%) cases. Hydratid cysts of Morgagni were excised in 95 (2.3%) cases. While mild adhesiolysis, salpingo-ovariolysis/pelvic, was done in 996 (24.1%) cases.

INTERMEDIATE LAPAROSCOPIC SURGERY

These were performed by 17 (48.6%) of 35 members reporting and accounted for 1792 (25.8%) of 6945 cases. Moderate degree of pelvic adhesiolysis and salpingo-ovariolysis was the most frequently performed surgery in this group accounting for 887 (49.5%) cases. Surgery for endometriosis stage II and III was done in 527 (29.4%) cases. While benign ovarian cysts of about 5 to 6 cm were excised in 260 (14.5%) cases, and salpingectomy was carried out in 118 (6.6%) cases only.

ADVANCED LAPAROSCOPIC SURGERY

These were reported by 17 (48.6%) of 35 members and accounted for 1020 (14.7%) of 6945 cases. Extensive pelvic adhesiolysis and salpingo-ovariolysis was performed in 118 (11.6%) cases. Salpingostomy for hydrosalpinx was performed in 156 (15.3%) cases. Conservative surgery for ectopic tubal pregnancy was carried out in 173 (17%) cases. Myomectomy was done in 155 (15.2%) cases. While, Laparoscopic Assisted Vaginal Hysterectomy (L.A.V.H.) was performed in as many as 222 (21.8%) cases. Laparoscopic Surgery for Stage

IV Endometriosis was carried out in 76 (7.7%) cases. Ovarian cystectomy was performed in 116 (11.4%) cases.

ANAESTHESIA

Majority of members (68.6%) used general anaesthesia. 10 members (28.6%) used both general as well as regional anaesthesia, while only 1 member (2.8%) used regional anaesthesia exclusively.

GAS FOR PNEUMOPERITONEUM

Carbon Dioxide : This was used in only half the cases, viz., 3740 (53.9%) by 25 (71.4%) members. 13 (52%) used medical grade carbon dioxide in 34% cases, while 9 (36%) used industrial in 45% cases and 3 (12%) used mineral water carbon dioxide in 11% cases. Electronic Carbon dioxide laproflators were used by only 6 (24%) members while the rest 19 (76%) used older pneumoinsufflator. Monitoring by electro-cardiograph was done by only 6 (24%) members while pCO₂ levels were monitored in a few cases by only 2 (8%) members.

Air : This was used in almost half the cases, viz., 3205 (46.1%) by 18 (51.4%) members.

Air pneumoperitoneum was created using an electrical pump with pressure gauges by the vast majority of members using air, viz., 16 (88.9%) while 2 (11.1%) members used mechanical air insufflators with clinical monitoring.

ELECTROSURGERY

28 (80%) members used electrosurgery for laparoscopic surgery. 21 (60%) members used both monopolar and bipolar electrosurgical techniques,

6 (17.2%) used only bipolar and 1 (2.8%) used only monopolar electrosurgical techniques.

ENDOCOAGULATION

11 (31.4%) members used endocoagulator for laparoscopic surgery.

ENDOSUTURING

This was performed by only 9 (25.7%) members.

VIDEO LAPAROSCOPIC SURGERY

This was performed by 14 (40%) members using a videocamera and monitor regularly as a routine in most of their cases. While 8 (22.8%) members have performed it occasionally.

IRRIGATION/SUCTION

This was carried out by all the members. However, most of them viz., 30 (85.7%) used regular operation theatre suction machine, while only 5 (14.3%) used a Pelvicleaner.

HOSPITAL STAY

The average hospital stay was only 1 to 2 days in vast majority of cases viz., 6923 (99.68%). Only 22 (0.32%) cases with major complications required to stay for 3 to 10 days.

COMPLICATIONS

Minor complications such as pain, surgical emphysema, wound infection, etc., were reported by almost all the members in about 24.2% of all cases. Major complications were reported in 22 (3.16 per 1000) cases. They were 4 cases (0.57/1000) of bowel injuries, 17 (2.4 per 1000) of haemorrhage and 1 (0.14/1000)

of bladder injury. Laparotomy was necessary in 14 (2/1000) of these 22 cases.

MORTALITY

There were no deaths reported.

DISCUSSION

Laparoscopic surgery is the most recent addition in the expanding scope of laparoscopic procedures. It needs special indepth training and sophisticated expensive equipment. Thus, only 35 (5%) members of Indian Association of Gynaecological Endoscopists (IAGE) have reported performing 6945 operative laparoscopy procedures. Peterson et al (1988) reports 880 (24%) American Association of Gynaecological Laparoscopists (AAGL) members performing 36,928 operative laparoscopy procedures.

Obviously, basic laparoscopic surgeries constituted the majority 4133 (59.5%) of all cases performed as most of the members are at the beginning of their learning curve. 17 (48.5%) members have performed less than 50 cases. Peterson et al (1988) also reports 75% of respondents performing 47 or less cases.

Intermediate and advanced laparoscopic surgeries were performed by less than half viz., 17 (48.6%) members and in almost half of the total cases viz., 2812 (40.5%).

Infertility was the indication in 2117 (60.5%) cases and in 40% of AAGL cases while pelvic pain was the indication in 384 (11%) cases, and in 41% of AAGL cases (Peterson et al 1988).

Air was used for pneumoperitoneum in almost half the cases, viz., 3205 (46.1%) quite safely without any compli-

cations of air embolism or explosion with electrosurgery. Intraabdominal pressures of 15 mm of Hg are lower than arterial pressure but higher than venous pressure. However, the veins and smaller blood vessels are compressed by the positive pressure and that is why the bleeding is surprisingly less at laparoscopic surgery. If air could enter the veins, then carbon dioxide also would enter the veins and cause hypercarbia and death at the high flow rate of insufflation used for laparoscopic surgery. This does not occur, proving that the positive pressure compresses the veins and gas or air cannot enter the circulation. Further, clinical evidence about safety of air is provided by the Indian Association of Gynaecological Endoscopists' survey reporting mortality from air embolism in only 4 out of 494, 319 laparoscopic sterilizations i.e. 0.8 per 100,000 (Khandwala, 1993).

While Chamberlain Carson (1978) reports much higher mortality of 2.6 per 100,000 from hypercarbia due to carbon dioxide in RCOG survey of 29,661 laparoscopic sterilizations. In developing countries like India, the use of air for pneumoperitoneum was the most important single factor responsible for diagnostic laparoscopies and laparoscopic sterilizations to be performed on an extensive scale. Carbon dioxide, especially medical grade is not readily available being used by 13 (37.1%) members. Also, the sophisticated electronic carbon dioxide machines are very expensive and have been used by only a few viz. 6 (17.1%) members. Apart from this, pCO₂ monitoring facilities are rare. Thus, the use of carbon dioxide gas is

not possible on a practical basis, while air has proved to be quite safe, popular and practical.

Electrosurgery was used by almost 80% of the members as it is readily available. The safety points especially for monopolar electrosurgery are instruments with fine tips (2-3 mm), low wattage and short bursts. Laser is not practical because of its cost and not much substantial advantages.

Irrigation/Suction is carried out by using regular suction machine and indigenously devised all purpose cannulae such as 'PEPSI' Cannula devised by Khandwala (1991) by majority of the members (85.7%). Several of these improvisations and innovation are necessary, if laparoscopic surgery is to become popular and feasible on an extensive scale in developing countries.

Major complications have been reported in only 22 (3.16/1000) cases viz., 4 (0.57/1000) bowel injuries, 17 (2.4/1000) haemorrhages and 1 (0.14/1000) bladder injury, necessitating a laparotomy in 14 (2/1000) cases. Peterson et al (1988) report major complications in 15.4 per 1000 cases, viz., haemorrhage in 2.6 per 1000, bowel or urinary tract injury in 1.6 per 1000, nerve injury in 0.5 per 1000. Laparotomy was required in 4.2 per 1000 case. Hospitalisation for more than 72 hours was required in 4.2 per 1000 and rehospitalisation in 3.1 per 1000.

MORTALITY

There was no mortality in our series. Peterson et al (1988) report 2 deaths following bowel injuries giving a mortality rate of 5.4 per 100,000.

CONCLUSION

Laparoscopic surgery is in its infancy in India. Adequate training is an important component in its dissemination. Several improvisations and innovations are necessary to make it feasible for its more extensive usage with full safety to the woman. The advantages of laparoscopic surgery and their low complication rates should make it as popular as laparoscopic sterilization. This IAGE survey gives a realistic picture of the status of laparoscopic surgery today in developing countries.

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