Audit

A 10-year serial, prospective study of laparoscopic cholecystectomy training in a single region

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Aim: To determine how surgical registrar training in laparoscopic cholecystectomy evolved in a single region in the 10 years since the introduction of this technique.

Methods: In 1993, 1996, and 2001, identical, standardised postal questionnaires were sent to all general surgical registrars in the Oxford region. The questionnaire enquired about the number of laparoscopic cholecystectomies performed, performed with supervision or simply assisted at within a set time period.

Results: There has been a significant increase in the number of procedures performed by trainees between 1993 and 2000, in comparison to the number purely assisted at.

Conclusions: After an initial learning period for the consultant trainers, laparoscopic cholecystectomy has been rapidly adopted, and is now a major training operation, much as open cholecystectomy was in the past.

Key words: Prospective study – Laparoscopic cholecystectomy training — Registrars

For more than a century, since the first description by Langenbuch in 1882, open cholecystectomy was the preferred procedure for the treatment of symptomatic gallstone disease. It is an excellent training operation, providing practice in tissue handling, tissue dissection, and operative decision-making. In the latter part of the 1980s, European surgeons performed the first laparoscopic cholecystectomy.¹ This has now become the 'gold standard' for the treatment of symptomatic gallstones, and is one of the commonest abdominal operations in this country. The aim of this study was to determine how surgical registrar training in laparoscopic cholecystectomy evolved in a single region in the 10 years since the introduction of this technique.

Methods

The study was performed in the Oxford region. In 1993, 1996, and 2001 identical, standardised postal questionnaires were sent to all general surgical registrars in the region (consisting of 9 hospitals), excluding those in full-time research. The questionnaire enquired about the number of laparoscopic cholecystectomies performed (P), performed with supervision (PA) or simply assisted at (A) within a set time period. It was anonymous; however the registrars were asked to state their year of training and there was space for individual comments. A single reminder was sent at 6 weeks. In 1993, 28 questionnaires were sent; in 1996, 34; and in 2001, 30.

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Figure 1 Trainee operative experience in laparoscopic cholecystectomy.

Results

The time periods covered were 1990-1993 (group 1), 1994-1996 (group 2), and 1999-2000 (group 3). Therefore, there were three serial surveys performed in the 10-year period following the introduction of laparoscopic cholecystectomy to our region. The response rate was 60% for group 1, 70% for group 2, and 60% for group 3.

The results for each group of trainees regarding the number of laparoscopic cholecystectomies performed alone, performed with supervision and purely assisted in each time period are shown in Figure 1.

In group 3 (1999-2000), registrars performed 73% ($n = 478$) of all procedures, and in the majority of cases they performed the procedure with supervision. In group 3, registrars assisted at 27% ($n = 180$) of procedures, by comparison to 57% ($n = 505$) in group 1 (1990-1993) and 47% ($n = 607$) in group 2 (1994-1996). There is a significant increase in the number of laparoscopic cholecystectomies either performed by the trainee alone, or performed with supervision, by comparison with the number purely assisted, between Group 1 and Group 3 ($P < 0.001$ Fisher's exact t -test).

In addition, a study was made of the registrars in each time period who performed the highest and the lowest number of procedures. In the latter group, to ensure parity, the registrar must have been on the training programme for at least 2 years in the time period to be included.

The results of the four registrars who performed the highest number of procedures in each time period is shown in Figure 2. Initially, these trainees either performed the procedure alone or assisted the consultant; this imbalance has been redressed in the later groups.

The results for the four registrars who performed the lowest number of procedures in each time period is shown in Figure 3. In groups 1 and 2, these registrars with the least experience who are most in need of supervised training assisted at 89% (group 1, $n = 157$; group 2, $n = 169$) of all laparoscopic cholecystectomies; however, in group 3 they

Figure 2 Data from the four registrars who had performed the highest number of laparoscopic cholecystectomies (LCs) in each time period.

Figure 3 Data from the four registrars who had performed the lowest number of laparoscopic cholecystectomies (LCs) in each time period.

assisted at 35% ($n = 87$) and performed with supervision in 47% ($n = 118$) of all laparoscopic cholecystectomies.

Discussion

Since the introduction of laparoscopic cholecystectomy to the UK, concerns have been raised regarding the training

of consultants and trainees in this new procedure.^{2,3} To determine how training in laparoscopic cholecystectomy in the Oxford region has evolved since its introduction, three sequential surveys were performed. They have been identical, carried out on registrars performing the same clinical jobs, often with the same consultants, and have had similar response rates.

This study has found that in the Oxford region there has been a significant increase in the number of procedures performed by trainees between 1993 and 2000, in comparison to the number purely assisted at. Registrars now perform 73% of all laparoscopic cholecystectomies. Particularly encouraging is the number being performed with consultant supervision, which may reflect the increased emphasis that has been placed on supervised training and operating by The Royal College of Surgeons of England and specialty associations. In addition, the 1999–2000 period is the only period to encompass specialist registrars only, and the increase in supervised training may also be a result of the training programme director monitoring the performance of individual trainees as well as that of each participating surgical department. This may also account for the increased opportunity that the least experienced registrars now have to perform laparoscopic cholecystectomy in comparison to 1990–1993, and 1994–1996.

Comparable studies over a similar time period have been performed in the USA. In 1998, Wu *et al.*⁴ showed that between 1991 and 1997, the proportion of laparoscopic cholecystectomies being performed by trainees increased from 37% to 93%. In 2000, Parsa *et al.*⁵ reported an increase of 64% in the number of laparoscopic

cholecystectomies performed by surgical residents on completion of their training programme in 1997 compared to those who completed their training in 1991. Our findings are consistent with the data from these studies.

Conclusions

After an initial learning period for the consultant trainers, laparoscopic cholecystectomy has been rapidly adopted, and is now a major training operation, much as open cholecystectomy was in the past.

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