JOURNAL OF LAPAROENDOSCOPIC & ADVANCED SURGICAL TECHNIQUES
Volume 16, Number 2, 2006

Survey of Minimally Invasive Surgery Fellowship Programs

ATUL K. MADAN, MD, FACS,[1] CONSTANTINE T. FRANTZIDES, MD, PhD, FACS,[2] and DANIEL J. DEZIEL, MD, FACS[3]

ABSTRACT

***Introduction*: Since there was no accrediting body for minimally invasive surgery fellowships, this investigation was performed to characterize minimally invasive surgery fellowships.**

***Materials and Methods*: All minimally invasive surgery fellowships that were noted on the Society of American Gastrointestinal Endoscopic Surgeons website in July 2002 were sent a survey. Only those fellowships that had fellow(s) for the year 2001–2002 were included in the survey. All programs were contacted a second time if the survey was not returned. Incomplete responses were not included in the data.**

***Results*: There were 78 fellowships listed, of which 16 had no fellow in 2001–2002, one which was not a minimally invasive surgery fellowship, and one which was listed twice. Of the 19 (32%) programs that responded, there was an average of 1.3 clinical fellows per program (range, 1–3). All clinical fellowships were of one year duration. There was an average of 3.2 attendings for each program. Thirty-two percent of program directors had attended a laparoscopic fellowship. The average program received 50 applications and interviewed 12 applicants for the year 2001–2002. The average fellow had 14 (range, 0–42) manuscripts, abstracts, and/or presentations either completed or in progress. Average minimally invasive cases performed was bariatric 95, colon 33, solid organ (liver, spleen, kidney, adrenal) 32, antireflux 36, hernia 54, and endoscopy 48. However, the range of these cases varied and the lowest number of cases for each category was bariatric 5, colon 3, solid organ 8, antireflux 1, hernia 6, and endoscopy 0.**

***Conclusion*: Minimally invasive surgery fellowships seem to be competitive for surgical residents. These fellowships vary in both research and clinical experience.**

INTRODUCTION

MANY RESIDENTS FEEL THE NEED FOR FURTHER TRAINING after general surgery residency.[1] It has been suggested that fellowship training may help reduce the rate of complications and conversions of advanced laparoscopic procedures.[2,3] While the Minimally Invasive Surgery Fellowship Council has been established, there was no previous formal accreditation process for fellowships. Before the establishment of the Council, no official guidelines for fellowships existed; thus, it is difficult to determine the standard experience of minimally invasive surgery fellows. Documentation of the activities of laparoscopic fellows may be useful in order to have the baseline data to explore the effect of the Fellowship Council.

[1]Department of Surgery, University of Tennessee Health Science Center, Memphis, Tennessee.
[2]Department of Surgery, Evanston Northwestern, Evanston, Illinois.
[3]Department of Surgery, Rush University, Chicago, Illinois.

Presented in part at the Society of American Gastrointestinal Endoscopic Surgeons annual meeting, March 2004, Denver, Colorado.

The purpose of this investigation was to characterize minimally invasive surgery fellowships during the year 2001–2002, prior to the formal match program of the Minimally Invasive Surgery Fellowship Council.

MATERIALS AND METHODS

The Society for American Gastrointestinal Endoscopic Surgeons (SAGES) website was searched to identify all existing minimally invasive surgery fellowships. In July 2002, all fellowships were sent a survey (Appendix A). Only those fellowships that had fellow(s) during 2001–2002 were included in the study. The program directors were sent the survey via e-mail, fax, or regular mail (if the specific contact information was available). Those program directors who did not respond to the initial survey were contacted again. Programs were divided by their affiliation into three groups: university affiliated, residency affiliated, or private practice. Incomplete responses were not included in the data analysis.

RESULTS

There were 78 fellowships listed through the SAGES website. Of those, 16 did not have a fellow in the year 2001–2002. Of the remaining fellowships, one was not a minimally invasive surgery fellowship, and one fellowship was listed twice.

Of the 60 active fellowship programs, only 19 (32%) responded. No differences were noted between a program's affiliation and whether or not it responded (Table 1). There was an average of 1.3 (range, 1–3) clinical fellows per program. The clinical fellowships were all of one year duration, although some fellowships had both a clinical and a research year required. Each fellowship had an average of 3.2 attendings (range, 1–6). There were no significant differences in the type or number of cases between programs which had more or fewer attendings.

Thirty-two percent of the responding program directors themselves had attended a laparoscopic fellowship. The program directors started performing laparoscopic surgery on average 10 years before 2001 (range, 1987–1999). For the year 2001–2002, there was an average of 50 applications per program and 12 applicants were interviewed per program.

Only 17% of the time allotted to the fellows was for research. However, the average fellow had 14 (range, 0–42) manuscripts, abstracts, or presentations either completed or in progress (average, 2.5 oral presentations and 1.4 publications as first author). For the number of minimally invasive cases performed by fellows, many of the program directors submitted a list, so it was not possible to break down the fellows' role (i.e., first assistant, surgeon, or teaching assistant) in the actual cases (Table 2). Most fellowships were funded from various sources, often multiple sources (Table 3). Fifty-six percent of the fellows went into private practice after fellowship while the others went into academic practice.

CONCLUSION

The majority of the minimally invasive surgery fellowship programs did not respond to our survey. This limited response is an obvious limitation of our study; however, our data did demonstrate some interesting results. All program directors were contacted at least twice by e-mail, fax, or telephone and were given time to fill out the survey. There are many possible reasons why the program directors may not have filled out the surveys: there may have been little interest in filling out the survey, the survey may have been too long, or some of the answers may not have been readily available to the program directors.

Table 1. Affiliation of Responders Versus Non-Responders to the Survey

	Medical school	*Residency only*	*Private*
Responders	15 (79%)	3 (16%)	1 (5%)
Non-responders	24 (59%)	13 (32%)	4 (10%)

P = not significant.

Table 2. Reported Number of Minimally Invasive Surgery Cases Performed

Type of procedure	*Average*	*Range*
Bariatric	95	5–121
Colon	33	3–195
Solid organ (liver, spleen, kidney, adrenal)	32	8–67
Anti-reflux	36	1–115
Hernia	54	6–252
Encoscopy	48	0–250

Table 3. Source of Funding for 19 Fellowship Programs

Source	*Number of programs*[a]
Institution (hospital, university, GME)	9
Industry	10
Collection for clinical work of fellows	3
Department/practice funds	2

[a]Total is greater than 19 due to multiple sources of funding.
GME, graduate medical education.

Our results indicate that minimally invasive surgery fellowship positions for the studied year were rather competitive. For the average 1.3 positions per program, there was an average of 50 applicants and 12 interviewees per program. This underscores the need many graduating general surgery residents feel to obtain further training.[1]

Second, minimally invasive surgery fellowships vary in research experience. This may be because many fellows' research experience is dependent almost solely on their faculty research. Some fellows had authored quite a number of manuscripts, abstracts, and presentations, while some programs had very little research. Of course, the amount of research that is performed is often dependant on the fellows, themselves not just the research environment.

The clinical experience of the fellows varied as well. For example, some fellows seemed to emphasize endoscopy while others emphasized bariatric procedures. Again, the experience of the fellow will mimic the experience of the faculty.[4] Some of the fellowships would have been better classified as laparoscopic bariatric fellowships.

While there was significant variation among the fellowship programs, the average fellow seemed to get an appropriate number of minimally invasive cases, as well as the opportunity to perform a significant amount of research during the fellowship. The concern that many fellowships are basically preceptorships with 1 or 2 faculty seems to be partially valid.[5] On the other hand, with an average of over 3 attendings per fellowship, there are programs with more faculty involved in the training of the fellows.

Some type of standardization may be useful to ensure a complete and appropriate experience for fellows. Formal minimum standards would help assure the quality of minimally invasive surgery fellowships. These data indicate that minimally invasive surgery fellowship programs offer diverse experience which provides graduating chief residents a choice in where they wish to focus their training.

REFERENCES

1. Rattner DW, Apelgren KN, Eubanks WS. The need for training opportunities in advanced laparoscopic surgery. Surg Endosc 2001;15:1066–1070.
2. Schlachta CM, Mamazza J, Gregoire R, Burpee SE, Pace KT, Poulin EC. Predicting conversion in laparoscopic colorectal surgery: fellowship training may be an advantage. Surg Endosc 2003;17:1288–1291.
3. Oliak D, Owens M, Schmidt HJ. Impact of fellowship training on the learning curve for laparoscopic gastric bypass. Obes Surg 2004;14:197–200.
4. Hunter JG. The case for fellowships in gastrointestinal and laparoendoscopic surgery. Surgery 2002;132:523–525.
5. Grosfeld JL. General surgery and fellowship training: mutually beneficial or competing entities? Surgery 2002;132:526–528.

Address reprint requests to:
Atul K. Madan, MD
University of Tennessee Health Science Center
956 Court Avenue
Room G210
Memphis, TN 38163

E-mail: amadan@utmem.edu