Should General Surgery Residents be Taught Laparoscopic Pyloromyotomies? An Ethical Perspective

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OBJECTIVES: The authors examine the ethical implications of teaching general surgery residents laparoscopic pyloromyotomy.

DESIGN/PARTICIPANTS: Using the authors' previously presented ethical framework, and examining survey data of pediatric surgeons in the United States and Canada, a rigorous ethical argument is constructed to examine the question: should general surgery residents be taught laparoscopic pyloromyotomies?

RESULTS: A survey was constructed that contained 24 multiple-choice questions. The survey included questions pertaining to surgeon demographics, if pyloromyotomy was taught to general surgery and pediatric surgery residents, and management of complications encountered during pyloromyotomy. A total of 889 members of the American Pediatric Surgical Association and Canadian Association of Paediatric Surgeons were asked to participate. The response rate was 45% (401/889). The data were analyzed within the ethical model to address the question of whether general surgery residents should be taught laparoscopic pyloromyotomies.

CONCLUSIONS: From an ethical perspective, appealing to the ethical model of a physician as a fiduciary, the answer is *no.*

DEFINITIONS: We previously proposed an ethical model based on 2 fundamental ethical principles: the ethical concept of the physician as a fiduciary and the contractarian model of ethics.

- The *fiduciary physician* practices medicine competently with the patient's best interests in mind. The role of a fiduciary professional imposes ethical standards on all physicians, at the core of which is the virtue of integrity, which requires the physician to practice medicine to standards of intellectual and moral excellence. The American College of Surgeons recognizes the need for current and future surgeons to understand professionalism, which is one of the 6 core competencies specified by the Accreditation Council for Graduate Medical Education.
- *Contracts* are models of negotiation and ethically permissible compromise. Negotiated assent or consent is the core concept of contractarian bioethics.
- *Nonnegotiable goods* are goals for residency training that should never be sacrificed or negotiated away. Fiduciary responsibility to the patient, regardless of level of training, should never be compromised, because doing so violates the professional virtue of integrity. The education of the resident is paramount to afford him or her the opportunity to provide competent care without supervision to future patients. Such professional competence is the intellectual and clinical foundation of fiduciary responsibility, making achievement of educational goals during residency training another nonnegotiable good.

KEY WORDS: ethics, surgery resident education, work-hour restrictions, laparoscopic pyloromyotomy, minimally invasive surgery in infants and children

COMPETENCIES: Patient Care, Medical Knowledge, Professionalism, Practice-Based Learning and Improvement, Systems-Based Practice

INTRODUCTION

Pyloromyotomy, historically the most prevalent of the important pediatric surgical cases a general surgery resident

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  1931-7204/$30.00 http://dx.doi.org/10.1016/j.jsurg.2013.06.022

could perform, is now increasingly done laparoscopically at teaching institutions.[1] Laparoscopic pyloromyotomy provides pediatric surgery residents or "fellows" with valuable minimally invasive experience in operating infants. However, at one teaching institution, general surgery residents' participation as operating surgeons in these cases dropped from 81% in 1997 to 19% in 2000.[2] This transition to minimally invasive pediatric surgery harms the training of the general surgery resident because some pediatric surgeons have been reluctant to permit general surgery residents to take roles in laparoscopic procedures comparable to those in open ones.[3] As a consequence, general surgery residents are at risk of not gaining sufficient experience with this procedure. But should they? The purpose of this paper is to provide an ethical perspective on the question of whether general surgery residents should be trained in this procedure by analyzing survey data obtained from pediatric surgeons within an accepted ethical framework.[4]

METHODS

We constructed a survey that contained 24 multiple-choice questions. Institutional Review Board approval of the study design was obtained from the Women and Children's Hospital of Buffalo, University at Buffalo, The State University of New York (DB#2247). The survey included questions pertaining to surgeon demographics, if pyloromyotomy was taught to general surgery and pediatric surgery residents, and management of complications encountered during pyloromyotomy. The multiple-choice answers ranged from 2 to 5 choices with the option to add a narrative text response to 1 question. Respondents were not required to respond to all questions, and multiple answers for the same question were accepted. An introductory and explanatory cover letter was included.

A total of 889 members of the American Pediatric Surgical Association and Canadian Association of Paediatric Surgeons were asked to participate. Surveys returned as undeliverable or with no survey questions answered were excluded. Respondents were asked to complete only the online version or the paper copy. All results remained anonymous.

Respondents were divided into groups by years in practice, academic affiliation, and personal preference for laparoscopic vs open pyloromyotomy. Categories of years in practice were 0 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, and more than 20 years. Surgeons were asked whether they trained general surgery residents, pediatric surgery residents, or both.

Respondents were asked 2 questions to determine whether a difference existed between the teaching and training of general surgery residents and pediatric surgery residents. Did the surgeon change the technique according to the type of trainee present, and was the trainee allowed to perform the operation (i.e., were they the primary surgeon rather than the first assistant)? The responses were divided into groups by technique and trainee type.

Surgeons who trained only general surgery residents were compared with those who trained both pediatric surgery *and* general surgery residents to determine if the presence of a pediatric surgery resident influenced a general surgery resident's opportunity to learn either technique. When comparing groups, we used Fisher exact test to analyze the data with a p value <0.05 as significant.

Ethical Framework

Restrictions on resident work hours, dynamic treatment modalities, and acknowledgment of legitimate self-interests outside of surgical training represent a significant paradigm shift in surgical education, resulting in new ethical challenges to surgery residents, educators, and program leaders.[4] Surgery residents continue to experience the constant struggle in providing excellent patient care and service, fulfilling educational requirements, and developing technical skills, all while watching the clock to avoid violation. Furthermore, operations taught at the beginning of surgical residency and fellowship for certain conditions might not be the same as those taught at the end. We proposed an ethical framework to equip those with a vested interest in surgery residency training with the intellectual and practical ethical tools to responsibly address the ethical challenges in surgical education that these major structural changes have created.[4]

This ethical framework is based on the concept of the physician as a fiduciary of present and future patients and the contractarian model of ethics (please see definitions). The fiduciary physician practices medicine competently and with the patient's best interests in mind as the physician's primary concern and motivation. These synergistic commitments mark the surgeon as a professional. The role of a fiduciary professional imposes ethical standards on all physicians, at the core of which is the professional virtue of integrity, which requires the physician to practice medicine to standards of intellectual and moral excellence. Contracts are models of negotiation and ethically permissible compromise. Negotiated consent is the core concept of contractarian bioethics.[4]

The fiduciary responsibility to future patients of every general surgery and pediatric surgery residency program is to train technically competent, professional surgeons. The education of the resident or fellow is paramount to afford him or her the opportunity to become competent in the provision of care to future patients without supervision. In the contractarian model of ethics, professional formation and education therefore should be judged by residency educators to be nonnegotiable goods for surgery residents and fellows.[4] Nonnegotiable goods are goals of clinical training that should never be sacrificed or negotiated away.