Can Reoperative Surgery Be Profitable? Maximizing Reimbursement

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ABSTRACT

It is interesting to review the topic of reoperative surgery from the aspect of cost-effectiveness or, worse yet, profitability for either the institution or surgeon. The majority of the published material focuses on indications, risk factors, and short- and long-term outcomes. The context of the discussion is framed by the question "Can you make money doing reoperative surgery?" The short answer is that if this is all you do, probably not. Few, if any, publications assess the impact a redo procedure has on the factors that directly affect the fee schedule: surgeon time consumption (intraoperative and postoperative), stress (physical and psychological), and malpractice effects. Far more work needs to be done to understand the cost and resource consumption effects of major reoperative surgery.

KEYWORDS: Reoperative surgery, cost, resource consumption

Objectives: Upon completion of this article, the reader should be able to define the sources of cost and resource consumption in reoperative colorectal surgery; define the role and limitations of the Current Procedural TerminologyTM (CPT) code system in describing reoperative colorectal surgery; and define the limitations of peer review literature in accurately defining the specific costs and resource consumption in reoperative colorectal surgery.

It is interesting to review the topic of reoperative surgery from the aspect of cost-effectiveness or, worse yet, profitability for either the institution or surgeon. The majority of the available published material focuses on indications, risk factors, and short- and long-term outcomes. In fact, cost or, more important, profit margin is rarely discussed. Even more important from the surgeon's perspective, there are few data that confirm the impact reoperative surgery has on physicians' work, time consumption, or stress. This discussion focuses on a description of how hospitals and physicians are reimbursed for their activities, followed by a review of certain specific procedures as examples. The context of the discussion is framed by the question "Can you make money doing reoperative surgery?" The short answer is that it depends, but if that is all you do, probably not.

DIAGNOSIS-RELATED GROUPS AND HOSPITAL REIMBURSEMENT

The Health Care Financing Administration (Medicare) implemented the prospective payment system in 1983 in the United States. The purpose of the system was to ensure access to care for beneficiaries while simultaneously providing a mechanism to control increases in health care costs for the program. The payment system is based on a system that incorporates one or more operative procedures on an organ system into a single grouping for payment. Many of these groupings are paired into groups designated with and without complications. The former are usually compensated at a considerably higher rate. As an example, diagnosis-related group (DRG) 149 (colectomy without complications) is reimbursed at \$8310 compared with DRG 148 (colec-

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tomy with complications), which is reimbursed at \$18,400. It is interesting that a reoperative colectomy could fall into either category depending on comorbidities and postoperative complications. Therefore, a healthy patient with a locally recurrent colon cancer with abdominal wall involvement might be admitted as a DRG 149. It is likely that the patient would require an extensive resection; however, in the absence of blood transfusions, a prolonged ileus, a significant surgical site infection, or some other postoperative misadventure, the case might not rise to the level of DRG 148. This would be in spite of the fact that a prolonged operative time will be required and considerably more operative resources will be consumed compared with a routine first-time colectomy.

We have looked at the cost structure of a variety of techniques for colectomy and defined the components of cost. The major components of cost remain intraoperative resources and length of stay-related issues. The latter are primarily related to complications and cost to manage those complications.¹⁻⁵

Another example is the report of Pessaux et al regarding reoperative hepatic resection.⁶ They reviewed 42 patients submitted to 55 repeated hepatectomies (42 second, 11 third, and 2 fourth hepatectomies). There was no intraoperative or postoperative mortality; however, the morbidity rates doubled from first to third hepatectomy (9.5 to 18.2%). Operative duration was considerably longer after a second or third hepatectomy compared with the first hepatectomy. Therefore, the implication is that resource consumption would be higher. Of the three largest series on reoperative ileoanal pouch surgery, only the paper by MacLean et al describes resource utilization with a mean operative time of 4 hours (± 1.1), an average blood loss of 500 mL (± 400), and an average length of stay of 10.3 days (± 4.6).⁷

Taheri et al assessed the variation in costs and the financial risk associated with patients treated at an academic health center with high-end DRGs.⁸ They found that low-volume DRGs (< 75 annual admissions) had the highest coefficient of variation relative to each of the three other DRG classifications (moderate to high volume, groups 2, 3, and 4). In addition, the institution was accurately reimbursed in only 43.9% of cases. It was not clear what percentage of these cases were reoperative; however, the potential risk is obvious in any low-volume, high-variation DRGs. Delaney et al did look at the role of "fast track" care in complex colorectal cases and determined a benefit in terms of reductions in length of stay and cost compared with using a standard care plan.⁹ However, the benefits were not equivalent to those for patients undergoing an initial surgical procedure.

The focus of the majority of reoperative procedures is salvage of a difficult disease state (i.e., recurrent

cancer or Crohn's disease). Therefore, the focus is appropriately on issues such as quality of life, improved survival, or symptom control. It is not clear that there are high-quality data available capable of determining the impact of reoperative surgery on the consumption of hospital resources. The purpose of this focus at the hospital level should be to define the differences in cost structure (if true) between initial and reoperative interventions. This would allow a determination of the relative role of medical or other nonoperative treatment alternatives in terms of both costs and patient-related benefits. It would also allow hospitals to advocate for indicated changes in reimbursement protocols for types of reoperative surgery that truly consume greater resources. The impact on tertiary care facilities is obvious.

PHYSICIAN REIMBURSEMENT

The system used to define physician work and allow this to be transformed into compensation is the Current Procedural TerminologyTM (CPT) code system. These codes are developed by the American Medical Association (AMA) in conjunction with representatives from virtually all medical specialties. There are several steps in the process of establishing the CPT for each encounter. First, the initial task of the CPT committee of the AMA is to define accurately the components of a procedure or an evaluation and management encounter. This code is then submitted to the Relative Value Units Update Committee (RUC) of the AMA, which evaluates the CPT committee's findings and description of the activity and then makes recommendations on valuation and application of relative value units (RVUs). Third, the recommendations from the RUC are submitted to the Center for Medicare and Medicaid Services (CMS) for inclusion in the Medicare fee schedule.

Although the CPT system is very well accepted and accurate, it is not realistic that each operative code would be able to have a "redo" counterpart. The result is that a colectomy is a colectomy whether it is the first or third resection. There are mechanisms to attempt to capture complexity, such as the 22 modifier. This modifier is variably accepted and is not consistently transformed into additional compensation. There have been several attempts to add granularity to the CPT system for operating through hostile fields (e.g., irradiated tissue, redo procedures). These modifications have not been accepted by CPT, RUC, or CMS because of inability to quantify the additional work in these situations.

Few, if any, publications assess the impact that a redo procedure has on the factors that directly affect the fee schedule: surgeon time consumption (intraoperative and postoperative), stress (physical and psychological), and malpractice effects. The most robust data set currently available is the National Surgical Quality

Improvement Program (NSQIP). A recent publication by Aust et al discussed the role of operative complexity from the perspective of both patient and operative characteristics.¹⁰ However, the specific of reoperative surgery was not addressed in the paper. Operative complexity was graded by operative type and not specifically if it was a reoperation, although the emergency nature of an operation was captured.

SUMMARY

It is clear that reoperative surgery adds a layer of complexity and financial risk that is difficult to assess given currently available data. Equally clear is the fact that in expert hands many of these difficult cases can provide significant quality of life benefits for patients. The reality remains, however, that much of this reoperative surgery is shifted to academic centers. This fact further skews the ability to compensate hospitals and surgeons truly using a resource-based methodology. The current concept of a bell-shaped curve, based upon the “typical” patient, does not fit with practice patterns in the United States. It also raises the specter of “transferring” care of these difficult clinical issues to the “university” as a means of decreasing financial risks under a pay-for-performance system.

It will be important to begin to capture the effects of elective and urgent reoperation, with particular attention paid to the associated physiology and resource factors that affect cost and quality of care. This may allow modification of both the DRG and CPT systems to capture accurately the work and cost inputs in this very important area of patient care. As we move to a pay-for-performance system, these data will be requisite to allow institutions to accept a higher percentage of such cases without fear of negative financial impact. Equally, this will avoid access issues for patients with difficult but correctable clinical problems.

DISCLOSURE

The author has no conflicts to disclose relative to this article.

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