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Editorial

Variability in Surgical Practice. An Unresolved Problem☆

Variabilidad en la práctica quirúrgica. Un problema por resolver

The issue of variability in surgery has been the object of debate for decades, especially following the publication of papers by Wennberg and Gittelsohn showing important differences in tonsillectomy and hysterectomy rates (between 8% and 70%) as well as dissimilarities among other procedures conducted in adjacent geographic areas of the states of Maine and Vermont.[1] Although years have passed, the variability in surgical practice is still an unresolved problem. These variations occur not only in the rates of certain surgical interventions but throughout the entire healthcare process. In colorectal surgery, for example, there are currently very important variations in the percentages of use of neoadjuvant chemoradiotherapy in patients with rectal cancer,[2] minimally invasive surgery[3] or mechanical bowel preparation.[4] In addition, the differences in the care we provide our patients occur not only among different geographic areas and hospitals but also among surgeons within the same surgical service.

The participation of the patient in decision-making after considering the risks and benefits of the various therapeutic options may the cause of a certain variability, which has been defined as positive variability,[5] but its influence on the variations of surgical practice is still minimum in our setting. On the other hand, what are responsible for variations that in most cases are inexplicable and unjustified include factors dependent on the population, structure, services offered and, especially, surgeon-related factors.[5] This variability has a negative impact and is associated with problems in terms of effectiveness, less efficient use of resources, and problems of accessibility and equality. In short, the outcome is a loss of value in the care we provide our patients.[6] In this context, important variations in the surgical practice consequently lead to important variations in the results. Hence, great variability has been observed in the rates of surgical site infection,[7] readmissions[8] and 30-day mortality,[9] among other outcome indicators, following colorectal cancer surgery.

Variability in surgical practice may be due to the uncertain value of different therapeutic options, as occurs with the surgical treatment of hemorrhoids, in keeping with the example of colorectal surgery.[10] Sometimes, even though there is sufficient evidence on the best form of treatment, the lack of knowledge limits its application; such is the case of fast-track protocols for perioperative care.[11] Finally, lack of training or technical skills may also explain variations in surgical results among hospitals and among surgeons. Although the influence of surgeons on variability has been researched much less, several studies have demonstrated significant differences in the percentages of anastomotic dehiscence, definitive stomata and tumor recurrence after colorectal cancer surgery among surgeons of the same service.[12,13]

Different strategies have been proposed to reduce unwarranted variability in surgical practice and its negative consequences.[5] First, the creation, dissemination and application of clinical practice guidelines and protocols, which is compatible with the necessary participation of patients in decision making. Secondly, it is necessary to measure, analyze and publish the results and related variations. The Atlas of Variations in Medical Practice is a good example.[14] The positive effect of audits and results research has been extensively demonstrated. The national program for the implementation of total mesorectal excision, developed in Norway in the 1990s[15] and which served as a model for our later Viking Project,[16] is an example of how the creation of a national registry with its corresponding audits, together with

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standardized surgical technique, is able to decrease variability and improve outcomes in the treatment of rectal cancer. In a more recent study, we have evaluated the results over time of a cohort of hospitals participating in the National Surgical Quality Improvement Program of the American College of Surgeons.[17] The participation of the hospitals is voluntary and their results are audited periodically. It has been observed that hospitals that commit to staying in the program for at least 3 years improve their surgical results and present progressive reductions in mortality, morbidity and infection of the surgical site.

This evaluation of surgical practice and its results should be conducted not only in the hospital as a whole, but also individually. Recently, initial experiences have been published with the use of surgeon-specific outcome reports, which provide for individualized evaluation and corresponding feedback.[18,19] Although they have some limitations, these reports, when adjusted for patient risk and confidential in nature, provide surgeons with benchmarking information on different quality indicators that can be used to improve individual outcomes and also reduce variability.[20]

It has been suggested that surgeons, when merely observed, improve their results. This concept is known as the Hawthorne effect, the name of the Chicago electric company where this phenomenon was first described during experiments conducted by sociologists.[21] However, many believe that the evaluation of results is not sufficient to stimulate improvement and that additional strategies are needed, such as the communication of best practices and positive deviance, which will likewise reduce variability.[22] The main idea of a positive deviance approach is that solutions to the problems faced by a group often originate within that group, and that certain members have knowledge and skills that can be generalized to improve the performance of the rest. In other words, there are individuals whose practices produce better results than those of their peers, and the implementation of these practices should be promoted through group discussion.

In conclusion, although the variability in surgery related to patients' preferences and their participation in decision making should be considered good, in most cases these variations in the care process are not justified and may reflect inappropriate practices. The application of strategies aimed at reducing such variability will not only improve efficiency and equality, but also the value of the care we provide our patients.

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