

The Continuum of Coaching: Opportunities for Surgical Improvement at All Levels

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In this issue of *Annals of Surgery* appear 2 important articles to advance our understanding of surgical coaching. Bonrath et al report on their randomized controlled trial comparing surgical coaching to standard surgical training for residents on a minimally invasive surgery rotation, using Roux-en-Y gastric bypass as the index procedure.¹ In the second study, a survey of attending surgeons by Mutabdzic et al explored perceptions of surgical coaching as an approach to performance improvement.² These 2 articles highlight a number of key points about the current state of surgical coaching. They identify defining characteristics to help clarify the concept and offer steps to operationalize coaching, including barriers and facilitators of success that must be considered.

Surgical coaching offers an approach to performance improvement that can be effective throughout the continuum of one's surgical career. The International Coaching Federation describes coaching as "providing objective and constructive feedback to help someone recognize what works and what can be improved and inspire them to maximize their potential" (<http://coachfederation.org/>). The basic principles of facilitated learning, autonomous and individualized goal setting and constructive feedback can apply to trainees or surgeons in practice. Interventions aimed at improving performance for surgeons in practice are best facilitated by a peer coaching approach, although surgeons who aim to develop a new skill or adopt a new procedure are most likely to benefit from expert coaching. The difference between peer and expert coaching is (as the names imply) whether the 2 parties are similar in their level of experience and knowledge or the coach has a particular skill or knowledge they are imparting to the surgeon.

The conceptual framework of experiential learning theory which is central to the way that adults learn and a cornerstone of coaching is presented in Bonrath et al's article.¹ Experiential learning requires the active involvement of the surgeon in an experience with subsequent reflection and critical analysis. The learning is individualized and seeks to identify new strategies or approaches through reflection that can be applied in future cases. The authors go on to point out that in the current training paradigm, residents are actively involved in operating but do not have the opportunity to engage in analytic reflection and have notoriously poor self-awareness and inaccurate self-assessments. The goal of surgical coaching is to provide a structured approach to teach self-reflection through facilitated analysis, feedback, and debriefing.

COACHING FOR RESIDENTS: IMPARTING A NEW SKILL SET

The primary outcome in this study was technical performance as judged by the general Objective Structured Assessment of Technical Skills (OSATS), a bariatric-specific version (BOSATS), and an error count. Residents assigned to the coaching arm showed significant improvement in OSATS, BOSATS, and error scores when compared with the control arm. Equally important however was the remarkable improvement in self-assessment observed in the coaching arm relative to the control arm. The correlation between blinded video review scoring on OSATS and BOSATS and resident self-assessment on those same instruments was strong for coached residents but not significant for controls (OSATS $\rho = 0.78$, $P = 0.013$ vs $\rho = -0.45$, $P = 0.27$; BOSATS $\rho = 0.85$, $P = 0.004$ vs $\rho = 0.46$, $P = 0.25$). The authors also noted that over the course of the program, residents who were being coached required less direction and feedback as they developed the capacity for self-assessment and self-directed learning. In other words, the coach transitioned from an expert coach to a peer coach or facilitator. Although the ability for self-assessment and self-directed learning is assumed in

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TABLE 1. Surgeon Identified Barriers to Surgical Coaching

Concern	Description	Approach/Principle
Value of technical skill	Surgeons in academic practice feel that they have sufficient technical skill in their defined set of procedures and would rather concentrate on other areas of their career given limited time and energy for self-improvement	(1) Coaching may offer efficient approaches that can replace current ineffective approaches ¹ (2) Coaching may be applicable to all aspects of surgical performance (technical, nontechnical) in the OR or any other clinical or academic setting ¹⁰
Concerns about image and authority	The appearance of competence and expertise is critical given the responsibility and gravity associated with performing an operation	(1) Remove coaching from clinical setting as private, confidential interaction with a coach ¹ (2) Nonpunitive programs open to participants at all levels
Loss of autonomy	Surgeons desire to maintain control over their learning agenda	(1) Adherence to well-developed coaching principles of choice and voice, self-directed learning ⁶ (2) Develops capacity for self-assessment ¹

Column 1 shows the barriers that are perceived through a survey of attending surgeons.² Column 2 provides a brief description and Column 3 matches them with approaches or principles utilized in the resident trial or other coaching literature.¹

our approach to CME, studies suggest that surgeons often lack the self-awareness and skillset necessary.^{3–5} Surgical coaching of trainees as described by Bonrath et al appears to not only improve performance relative to traditional training, but also develops a new skill set in residents that can serve them well throughout their career, namely an openness for ongoing performance improvement and the capacity for self-assessment. This represents a fundamental shift in our approach to surgical education, one that will require a major cultural shift for surgeons in practice. However, exposing residents to principles of coaching during their training can help with this transition.

COACHING FOR SURGEONS IN PRACTICE: THE ROLE OF CULTURE AND PERCEPTIONS

The article by Mutabdzic et al addresses this very issue as implied by their title “Coaching Surgeons: Is Culture Limiting our Ability to Improve?”. The authors interviewed surgeons in practice about their perceptions and potential concerns about surgical coaching. Not surprising, they found that surgeons highly value competence and autonomy in practice. Surgeons felt that this was threatened by surgical coaching, at least in the way they currently perceive coaching. The authors defined coaching as “a social interaction that aims to develop expertise by setting specific goals and providing feedback in order to achieve those goals.” The authors identified 3 main areas of concern: (1) the value of technical improvement (at least in academic surgery); (2) concerns about image and authority; and (3) loss of regulatory self-control. These 3 concerns are actually very congruent with the basic principles of coaching and demonstrate the importance of education within the surgical community about this novel but potentially transformative approach to performance improvement (Table 1).

The Value of Technical Improvement

Mutabdzic et al discuss several important differences between surgery and other disciplines that traditionally utilize coaching. Surgeons tend to conceptualize “mastery” or “expertise” as having conquered a specific set of skills, although in other disciplines these terms are equated with a continual learning state or perpetual devotion to improvement. In medicine, we tend to prioritize and strive for competence rather than continued improvement regardless of level. This is a cultural difference and one that we will need to sort through in the upcoming years. It represents the single greatest threat to the success and widespread acceptance of surgical coaching.

Concerns About Image and Authority

Similar to the approach utilized in the Bonrath et al study, many disciplines employ coaching to reflect “on practice” rather than

“in practice.”⁶ The perceived criticality of appearing competent and knowledgeable in clinical settings is important for our patients and colleagues to trust in our ability to perform an operation. However, coaching activities do not need to take place in real-time and in fact there are a variety of advantages to video-based coaching.^{4,7,8} As our ability to capture video in the operating room improves, the capacity for this type of coaching will only increase.⁹ This underscores the importance of timely introduction of surgical coaching by surgeons themselves. This can help ensure that it is not introduced as a punitive intervention but rather as a broadly applicable approach to continued improvement for surgeons at all levels, much as it is employed in sports, chess, and music.

Loss of Regulatory Self-control

Interestingly, this is in direct conflict with the fundamental principles of coaching. As very well-described in the Bonrath et al article, autonomy is perhaps the single most important aspect of coaching. In fact, coaching is far superior to traditional approaches to continuous professional development in the ability of the learner to define and control their own learning goals and objectives. Coaching only works if the participant is willing to participate and motivated for self-improvement. The role of the coach is to help the surgeon to identify the areas of improvement that are most germane to his/her individual practice and only the surgeon can truly know what these are. This underscores the care with which surgical coaching must be introduced and the need for education of our discipline about the core principles.

CONCLUSIONS

These 2 articles are among the first publications providing data on the effectiveness and perceptions of surgical coaching. The article by Bonrath et al suggests that the anticipated effectiveness of coaching is likely to bear out in future research; however, the article by Mutabdzic et al tempers enthusiasm by pointing out the important work that will need to be done to ensure such an approach is acceptable to surgeons, much of which may involve correcting misperceptions.

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