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# Clinical THYROIDOLOGY

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## EDITORIAL

### Surgeon Performance in Thyroidectomy: Older Is Not Necessarily Better

In the January 2012 issue of the *British Medical Journal*, Duclos and associates reported the findings of a prospective, multicenter trial examining the influence of a surgeon's experience on the outcomes of thyroid surgery (1). The study examined 28 high-volume thyroid surgeons at various points in their careers across five centers in France over a 1.5-year period. Rates of two complications, recurrent laryngeal-nerve palsy and hypoparathyroidism, were the primary end points. Using a mixed-model analysis, the authors determined that surgeons with 5 to 19 years of experience had the best outcomes, with complication rates of less than 1%. After adjustment for patient- and hospital-centered variables, surgeon experience in excess of 20 years emerged as the sole predictor of higher complication rates, carrying an odds ratio of 3.06 for recurrent laryngeal-nerve palsy and 7.56 for hypoparathyroidism.

Prior studies have demonstrated that high-volume surgeons have superior outcomes in thyroidectomy (2,3). However, the study by Duclos et al. is the first to compare individual surgeons at different stages in their careers. Their somewhat arbitrary experience categories, likely chosen to divide the study participants into rough quartiles, describe a rather broad "phase of excellence" for midcareer surgeons, between the ages of 30 and 50 years. Thyroidectomy is a procedure that lends itself to this type of study because it is a very pure test of technical skill. The complications are very well defined and can be measured objectively.

The concept of expert performance is not new. It has been previously described in violinists, pilots, ballerinas, athletes, surgeons, and other similar professions that require coordination of advanced cognitive function with completion of a complex physical task (4). Expert performance arises after a dedicated period (generally more than 10 years) of deliberate practice, that is, practice purposefully focused on improving performance (5). Performance improvement is closely linked to timely feedback, frequent repetition, and the presence of well-defined goals. The practice of medicine is generally lacking in these three features, which may explain the observation that the quality of care delivered tends to decline with increasing physician experience (6). In contrast, surgery, replete with daily opportunities for performance improvement, was thought to be an exception to that rule—at least until now.

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Manual dexterity, strength, visuospatial ability, hearing, attention, memory, and cognitive skills decline with age. All these factors may adversely affect surgeon performance and contribute to higher operative mortality rates among patients of surgeons over age 60 for certain complex procedures (7). Adding increased thyroidectomy complications to this list creates a potentially worrisome picture with regard to patient safety, especially when one considers that: (a) surgeons' reputations (and hence their ability to attract new patients) tend to grow with time, (b) no defined system exists to monitor or ensure surgical quality as practitioners age, and (c) the decision to retire is left to the individual surgeon rather than to any type of oversight body. In contrast, commercial airline pilots are not permitted to act as the pilot in command past the age of 65 in Europe and the United States (8). Given that one in five Americans undergoes elective surgery each year (9), some degree of parity might be expected in the treatment of surgeons and pilots.

Having said that, knowledge and experience count for a great deal in surgery. Older surgeons play a crucial role in mentoring their less experienced colleagues; hence, they must stay active profession-

ally. The contributions of Duclos et al. do not call for regulation of surgeon retirement. Rather, the paper represents just one voice in a growing chorus that is actively calling for transparent reporting of surgical outcomes. What health care consumers (patients and insurers) currently have are surrogate indicators for surgical quality: hospital volume, surgeon volume, surgeon subspecialization, and now surgeon age. But these surrogates are a poor substitute for the individual outcome data that are sorely needed to create a value-based health care delivery system (10). Transparency would pave the way for virtuoso surgeons of all experience levels to be rewarded according to the same single criterion that determines the salaries of superstar athletes, perhaps the only factor that patients really care about: current performance.

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