



Energizing trials in thoracic surgery

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Comment on: Goudie E, Oliveira RL, Thiffault V, *et al.* Phase 1 Trial Evaluating Safety of Pulmonary Artery Sealing With Ultrasonic Energy in VATS Lobectomy. *Ann Thorac Surg* 2018;105:214-20.

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The paper by Goudie *et al.* (1) on the safety of energy devices for the ligation of pulmonary artery (PA) branches during VATS lobectomy should leave us all energized. It's not because the authors have discovered something new. As a matter of fact, the authors adequately point out that energy devices have been previously demonstrated to be safe and effective tools for the ligation of PA branches (2). However, this paper stands out by the methods that this group chose to utilize in order to prove their hypothesis. Instead of going the easy way of performing a retrospective analysis of a large database, with perhaps some complex statistics to eliminate bias, leading to a conclusion that is, at best, hypothesis generating; the authors decided to perform a real clinical trial which will lead to solid, unbiased, and interpretable evidence. Such trials are rare breed in modern thoracic surgery, and this is wherein lies the value of this work.

In a multi-year project, this group was able to perform *ex-vivo* laboratory studies to evaluate PA burst pressures (3), followed by experimental evidence in an animal model (4), followed by first human trials in patients undergoing thoracotomy (5), leading to a Phase I trial in VATS lobectomy (1), and culminating in a multi-centre clinical trial that will most likely generate undisputable evidence. Will this trial lead to a change in practice? The authors argue that staples are bulky instruments that require extensive dissection around small PA branches in order to be applied. A counter-argument would be that such dissection is necessary in order to mobilize enough length on the PA to be able to safely control it in the event of a massive hemorrhage. Will it lead to a decrease in the cost of VATS lobectomy? Perhaps, as cost is institution dependent.

However, in most institutions, stapler loads come at a hefty price, which is responsible for the largest share of the costs associated with VATS lobectomy.

Whether you are a proponent of stapling the PA or burning the PA, this trial is important for you as a thoracic surgeon. A fine handmade bespoke suit requires the concerted effort of multiple groups of people, over multiple phases, to produce the best possible product. Similarly, clinical trials like this one come at high cost of time and money, but also lead to the best possible evidence. As surgeons, we have mastered the art of being meticulous, patient, and detail oriented, as we strive for excellence in the operating room. As researchers, we can learn from this trial how apply those concepts to our research.

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Footnote

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Ethical Statement: The author is accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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