factors. PA pressure was not measured in the study, but the inference is that PA enlargement occurred as a consequence of underlying, undefined PH. Major complications increased with larger ssPADs and ranged from 8.3% for patients with ssPAD <20 mm to 17.3% for patients with ssPAD $\geq$ 25 mm.

Their review raises important questions that require more in-depth study: What PA size or PA:Ao ratio should trigger further assessment by echocardiography or right heart catheterization? What specific PA (main, right, left) diameters and pressures are independent variables of low, moderate, and high risk? What patients with PH can undergo lobectomy, and how can these patients be optimally managed perioperatively?

I commend Kneuert and colleagues for their work. These results provide further evidence of PH-associated

morbidity in pulmonary surgery and highlight an underused and simple screening tool for identifying patients at potential operative risk. Surgeons should consider CT-directed PA measurements more often in their decision making process. Comparing apples to oranges can indeed bear fruit.

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See Article page 1521.

Commentary: Measures of relevance from relevant measurements: Pulmonary artery size on computed tomography as predictor of postlobectomy complications

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Outside of revolutionary developments in treatment paradigms, improvements in surgical outcomes stem from 3 domains. First, there are incremental steps conferred by experience (of surgeons, perioperative teams, and

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CENTRAL MESSAGE

Pulmonary artery luminal diameter is a potential factor in preoperative risk stratification for patients undergoing lobectomy for lung cancer.

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institutions) that accrue over time.¹ Second, there are small but significant advances made via the widespread adoption of “best practices” (which includes preoperative optimization and appropriate adjunctive therapies).² Third, and most subtly, is the gains from accurate risk-stratification and patient selection.^{3,4} It is in this last domain that Kneuert and colleagues⁵ highlight a particular opportunity for thoracic surgeons treating patients with lung cancer.

They report on a series of 736 patients undergoing lobectomy for cancer in their institution's Society for Thoracic Surgeons General Thoracic Surgery Database and examine the relationship between pulmonary artery (PA) diameter and postoperative course, specifically the occurrence of major complications. They found that enlargement of the PA diameter ipsilateral to the surgical side increased the odds of major complications. Unsurprisingly, in their multivariable analysis, major complications were also associated with previous coronary artery bypass, peripheral vascular disease, and undergoing lower/middle lobectomy (vs an upper lobectomy). Perhaps unsurprisingly, the estimated increase in odds of major complications was greater for all of these compared with PA diameter.

The modesty of the finding for their primary variable of interest, however, should not overshadow its ultimate usefulness. Surgeons training or practicing in an era of routine computed tomography may take preoperative estimates of postoperative cardiopulmonary function for granted, but the diagnosis of pulmonary hypertension is nontrivial. The association between pulmonary hypertension and postoperative morbidity after lobectomy is well documented,^{6,7} but the benefits of measuring PA pressures invasively is offset by the risks of procedures to do.⁸ The authors provide a reasonable and responsible alternative and, given the relative rarity of pulmonary hypertension, a way to do so that can be enveloped in routine preoperative imaging. The authors also take care to indicate how their imaging biomarker tracks with other correlates of pulmonary hypertension, including echocardiography, and outline steps for reproducing measurements for the technical reader.

Therefore, there is ample reason to update risk-assessment methodology, and the present study lays the foundation for thoracic surgeons to move forward with this refinement. First, it serves as the scientific rationale for including PA diameter in a risk calculator. Second, inclusion of PA diameter in routine reporting of preoperative comorbidities allows for better characterization of

pulmonary hypertension in epidemiologic studies. Finally, and most importantly, these data motivate studies examining the benefit of invasive measurement(s) versus their potential morbidity in a select group of patients. Indeed, patients with elevated PA pressures confirmed by right heart catheterization may be referred for pharmacologic therapy or may opt for nonsurgical treatment, yet the frequency that this may or may not occur is unknown. Kneuert and colleagues illustrate the relevance of data gleaned safely and routinely and bring surgeons one step closer to determining which patients can, and should, get a safe operation.

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