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Commentary: The paper from the future

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In this issue of *JTCVS Techniques*, Nakazawa and colleagues¹ present a guide to right upper lobe segmental resection. “A guide to what?” you may ask, and you would not be the only one. Segmental resections of the right upper lobe are not common operations. Most of us are comfortable performing the simple segmentectomies that are S6 and S2 and multisegments of the left upper lobe. However, when we venture in the complex world of anatomical uncertainty that is the right upper lobe or the lower lobes, then many of us will quickly fall back to a lobectomy.

In this work, the authors shed light on a new and imminent reality of lung cancer surgery. Lung cancer screening will result in smaller lesions that present to surgery. This in turn requires thoracic surgeons to be adept at segmentectomy. Since the prevalence of lung tumors is greatest in the right upper lobe, it follows that thoracic surgeons should be especially adept at right upper lobe segmentectomy. Easier said than done—since as presented here, even when simplified to the barest bones, we are left with 14 patterns of anatomical variations to the bronchovascular structures of the right upper lobe.

Granted, there exists extensive literature on the adjuncts of segmental resection, such as 3-dimensional planning, indocyanine green dye marking, and inflation methods, to name a few. The majority of those rely on technological advancements to delineate the intersegmental plane and do not require much of a thought process or analytical work on the part of the surgeon. The method presented by

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CENTRAL MESSAGE

As segmentectomy becomes a more prevalent operation in the future, thoracic surgeons should be especially adept at right upper lobe segmentectomy.

Nakazawa and colleagues involves a careful review of the 3-dimensional anatomy and a didactic process whereby the surgeon needs to decide into which of the 14 patterns the patient's anatomy falls. Once that decision is made, the operation follows predetermined principles to execute the segmentectomy. The added value of this particular method, although not formally assessed in this manuscript, lies in the surgeon becoming very familiar and comfortable with all the anatomical variations. Think of it as following a geo-positional system map blindly versus interacting with the map to find the best path out of 14 different routes. With time, surgeons will become familiar enough with the anatomy to a point where performing and teaching segmentectomy will become as easy for us as performing a lobectomy.

The skeptic will argue that this is a lot of work for an average of 13 cases per year, which is what is presented in this paper. Remember, however, that this is a paper from the future. The advent of lung cancer screening will increase this number exponentially, and the onus is upon us to be ready.

Reference

1. Nakazawa S, Shimizu K, Kawatani N, Obayashi K, Ohtaki Y, Nagashima T, et al. Right upper lobe segmentectomy guided by simplified anatomic models. *J Thorac Cardiovasc Surg Tech*. 2020;4:288-97.

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