- guide surgical myectomy for hypertrophic cardiomyopathy. *J Thorac Cardiovasc Surg.* 2011;142:53-9.
21. Maron BJ, Wolfson JK, Roberts WC. Relation between extent of cardiac muscle cell disorganization and left ventricular wall thickness in hypertrophic cardiomyopathy. *Am J Cardiol.* 1992;70:785-90.
  22. Maron BJ, Spirito P, Shen WK, Haas TS, Formisano F, Link MS, et al. Implantable cardioverter-defibrillators and prevention of sudden cardiac death in hypertrophic cardiomyopathy. *JAMA.* 2007;298:405-12.
  23. Valeti US, Nishimura RA, Holmes DR, Araoz PA, Glockner JF, Breen JF, et al. Comparison of surgical septal myectomy and alcohol septal ablation with cardiac magnetic resonance imaging in patients with hypertrophic obstructive cardiomyopathy. *J Am Coll Cardiol.* 2007;49:350-7.
  24. Talreja DR, Nishimura RA, Edwards WD, Valeti US, Ommen SR, Tajik AJ, et al. Alcohol septal ablation versus surgical septal myectomy: comparison of effects on atrioventricular conduction tissue. *J Am Coll Cardiol.* 2004;44:2329-32.
  25. Noseworthy PA, Rosenberg MA, Fifer MA, Palacios IF, Lowry PA, Ruskin JN, et al. Ventricular arrhythmia following alcohol septal ablation for obstructive hypertrophic cardiomyopathy. *Am J Cardiol.* 2009;104:128-32.
  26. ten Cate FJ, Soliman OI, Michels M, Theuns DA, de Jong PL, Geleijnse ML, et al. Long-term outcome of alcohol septal ablation in patients with obstructive hypertrophic cardiomyopathy: a word of caution. *Circ Heart Fail.* 2010;3:362-9.
  27. Appelbaum E, Maron BJ, Adabag S, Hauser TH, Lesser JR, Haas TS, et al. Intermediate-signal-intensity late gadolinium enhancement predicts ventricular tachyarrhythmias in patients with hypertrophic cardiomyopathy. *Circ Cardiovasc Imaging.* 2012;5:78-85.
  28. McLeod CJ, Ommen SR, Ackerman MJ, Weivoda PL, Shen WK, Dearani JA, et al. Surgical septal myectomy decreases the risk for appropriate implantable cardioverter defibrillator discharge in obstructive hypertrophic cardiomyopathy. *Eur Heart J.* 2007;28:2583-8.
  29. Flores-Ramirez R, Lakkis NM, Middleton KJ, Killip D, Spencer WH III, Nagueh SF. Echocardiographic insights into the mechanisms of relief of left ventricular outflow tract obstruction after nonsurgical septal reduction therapy in patients with hypertrophic obstructive cardiomyopathy. *J Am Coll Cardiol.* 2001;37:208-14.
  30. Maron BJ, Maron MS, Wigle ED, Braunwald E. The 50-year history, controversy, and clinical implications of left ventricular outflow tract obstruction in hypertrophic cardiomyopathy from idiopathic hypertrophic subaortic stenosis to hypertrophic cardiomyopathy: from idiopathic hypertrophic subaortic stenosis to hypertrophic cardiomyopathy. *J Am Coll Cardiol.* 2009;54:191-200.

Key Words: Hypertrophic obstructive cardiomyopathy, septal alcohol ablation, septal myectomy

EDITORIAL COMMENTARY

The law of the instrument

Richard Lee, MD, MBA

See related article on pages 159-67.

I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.

—Abraham H. Maslow¹

In preparing for this editorial commentary on the article in this issue of the *Journal* by Quintana and colleagues,² I searched the Internet, using the senior author and myectomy as keywords. I was led to a YouTube video, which I, as had more than 10,000 others before me, viewed intensely.³ In it, Dr Schaff discussed the disease and options, with an

emphasis on surgery. In it, he reports a surgical experience of more than 1500 myectomies at the Mayo Clinic, including more than 50 with the apical approach alone. Most surgeons do not perform 50 Morrow procedures in an entire career. There is no doubt that Dr Schaff is not only one of the world's leading experts on this disease but is already and will forever be a historic figure. Anyone who has ever met him knows that no one deserves it more.

That said, while reading this article, which demonstrates that surgical outcomes are worse after failed septal ablation, it struck me that all of us, particularly surgeons, are subject to Abraham Kaplan's Law of the Instrument, which can be formulated as "Give a small boy a hammer, and he will find that everything he encounters needs pounding." The concept likely first originated as an English expression calling a hammer a Birmingham screwdriver, referencing the practice of using one tool for all purposes. Our bias as surgeons is that we *want* to see surgery as better, even if we don't admit this to ourselves.

In this article, Quintana and colleagues² compared 31 patients undergoing myectomy after septal ablation with

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63 matched patients who underwent myectomy without previous ablation. There was no difference in mortality at 1 year; however, heart block, diastolic dysfunction, and heart failure were worse in the previous ablation group. Quintana and colleagues² concluded, “Our data contribute to accumulating evidence that the infarction induced by alcohol septal ablation may have adverse and unexpected consequences.” I am not sure that this is true. Quintana and colleagues² have added the limitation that the denominator is unknown. This is a critical shortcoming. What happens to the ablations that *don’t* fail? And, more importantly, how many succeed? Without that information, the merits or limitations of alcohol ablation are unknown as well.

It is interesting that only 31 patients were treated after failed alcohol ablation. If the number of surgical procedures is 1500, this is very low, even if many of those surgeries occurred before the development of ablation. In contrast, in the surgical treatment of isolated atrial fibrillation, often half of these patients have undergone previous catheter ablation.⁴ Moreover, Quintana and colleagues² have previously reported on a series of 52 repeat surgical myectomies after previous surgical failure.⁵ In 2008, in a comparison with surgical myectomy, the Mayo group reported on 138 alcohol ablations out of 601 patients who were referred for either ablation or surgery. This gives some insight into the denominator.⁶ Even in this group, however, if patients were referred to another institution, likely some of the 463 would have selected ablation. In an institution with less surgical experience, this may be a wise choice. Finally, it is unknown how many were from other outside institutions that do large number of alcohol ablations and their rates of success.

Quintana and colleagues² have demonstrated that outcomes are worse with patients who undergo failed

alcohol ablation. Until a head to head comparison is performed in a randomized study that includes quality of life and recovery time, however, many questions will remain unresolved. This type of study can only be performed at a high-volume institution such as the Mayo Clinic.

As I was watching Dr Schaff’s video, I tried to imagine surgeons of a previous era embracing new technology as a way to educate patients. It was hard to do so. We have been quick to add new tools to our tool belt to benefit patients in the area of education. We have not been as quick to create or improve new nonsurgical procedures as tools, such as catheter-based ablation. More often than not, this is a wise decision. Until a more convincing argument is made, however, our patients will likely continue to favor the doctor with the smallest, least painful hammer. The fact is, they may be right.

References

1. Maslow AH. *Psychology of science: A reconnaissance*. New York: Harper & Row; 1966:15.
2. Quintana E, Sabate-Rotes A, Maleszewski JJ, Ommen SR, Nishimura RA, Dearani JA, et al. Septal myectomy after failed alcohol ablation: Does previous percutaneous intervention compromise outcomes of myectomy? *J Thorac Cardiovasc Surg*. 2015;150:159-67.
3. Schaff H. Septal Myectomy and apical myectomy—Mayo Clinic. Available at: <https://www.youtube.com/watch?v=hb4jxWh92iM>.
4. Lee R, McCarthy PM, Passman RS, Kruse J, Malaisrie SC, McGee EC, et al. Surgical treatment for isolated atrial fibrillation: minimally invasive vs. classic cut and sew maze. *Innovations (Phila)*. 2011;6:373-7.
5. Cho YH, Quintana E, Schaff HV, Nishimura RA, Dearani JA, Abel MD, et al. Residual and recurrent gradients after septal myectomy for hypertrophic cardiomyopathy—mechanisms of obstruction and outcomes of reoperation. *J Thorac Cardiovasc Surg*. 2014;148:909-15; discussion 915-6.
6. Sorajja P, Valeti U, Nishimura RA, Ommen SR, Rihal CS, Gersh BJ, et al. Outcome of alcohol septal ablation for obstructive hypertrophic cardiomyopathy. *Circulation*. 2008;118:131-9.