Minimally invasive bunion surgery (MIBS) just has a bad reputation, and that's putting it lightly. Perhaps more precise words to describe how most foot surgeons feel about minimally invasive surgery (MIS) would be: atrocious, blasphemous, careless, cringy, deplorable, dreadful, ghastly, godawful, horrible, irresponsible, negligent and/or sinful. These visceral feelings mostly stem from the '70s and '80s when surgeons exploited MIS techniques, resulting in disaster after disaster. Foot surgeons rushed away from MIS and embraced open AO techniques, which have dominated the United States bunion market for the last 40 years.

And now, in 2023, there's MIBS 2.0. We've seen this movie before, and here come the trainwrecks again. But, this minimally invasive so-called “upgrade” is even worse, as it violates all classic bunion surgery principles. It’s an unorthodox technique with extreme metatarsal head shifts, leaving minimal to zero bony contact between bony segments. There is a large bony defect that is spanned by small screws. And to top it all off, patients are walking immediately after surgery. The entire construct looks like it’s going to explode (On rare occasions, it does).3

The vast majority of our profession’s leaders seem to be skeptics, naysayers, and publicly outspoken against this new rendition of minimally invasive surgery. Can you blame them, particularly when most are questioning whether or not the bone will even heal in the first place? And, let’s not get started on the appropriateness of not fusing for hypermobile. Just recently, in October 2022, my former Kaiser Permanente group colleagues authored a paper in the Podiatry Today magazine (in partnership with the American Society of Podiatric Surgeons) concluding that midfoot fusion “continues to be at the forefront of bunion deformities” when compared to MIS.4 And, one might be considered crazy (or possibly teetering on malpractice) to indicate away from a gold standard bunion correction that produces a misshaped metatarsal bone.5 Frankly, the barrier to deviate from the procedure du jour is significant.

This is not the first time our profession has been faced with a paradigm shift. In 2006, I had the pleasure of lecturing on midfoot fusion bunion correction following Lowell Weil’s (Senior) Scarf lecture at American College of Foot and Ankle Surgeons Annual Scientific Conference. The Scarf procedure was the gold standard bunionectomy at that time, and surgeons were competent at performing it. I began my lecture by asking our audience peers how many were performing midfoot arthrodesis for bunions. A sparse show of hands went up from the few well-known regional factions — Seattle, Northern California, Ohio, and Western Pennsylvania. Since then, I’ve been a pioneer in the midfoot fusion movement, and oh how things have changed seventeen years later. Calling it drastic would be an understatement.6-10

This paradigm shift to MIBS in the foot has similar parallels to how laparoscopic surgery evolved, and eventually became the global standard of care. The laparoscopic approach is not credited to one individual, but to several pioneering surgeons over the course of one hundred years: The first laparoscopic surgery was performed in 1901 on dogs in Dresden, Germany.11 The first human laparoscopy followed in 1910 in Sweden.12 The first publication on modern laparoscopy was in France (1947), followed by a textbook in the United Kingdom (1967). A Dr. Clarke of Buffalo, New York, was the first to perform a laparoscopic procedure with sutures and simple instrumentation.

When Dr. Semm of Germany, who has been called “the father of modern laparoscopic surgery,” performed the first laparoscopic appendectomy in 1981, the German Surgical Society suggested he be suspended from medical practice.13 Dr. Semm attempted to publish his work in the American Journal of Obstetrics and Gynecology, but was rejected on the grounds that it was an “unethical” technique.14,15 Today, laparoscopy surgery is considered the gold standard, and is now performed robotically.16-19

There’s a worldwide effort gaining momentum surrounding MIBS, and that effort is also not credited to one individual. These newer techniques have been evolving rapidly; minimally invasive foot surgery began in the 1960s with the advent of fluoroscopy: The 1st generation of percutaneous bunion surgery, described by Isham in 1991, involves an un fixtures intra-capsular oblique wedge first metatarsal head osteotomy.20 The 2nd generation repair called for a transverse metatarsal neck osteotomy with a stabilizing percutaneous and exposed medial subcutaneous K-wire; it was first performed by Bösch in 2000 and later popularized as the SERI procedure by Giannini in 2013.21-23

The 3rd generation MIBS update was born from a 2008 collaboration between British surgeon David Refern and French surgeon Joel Vernos. Their technique involves a metaphyseal-diaphyseal chevron cut, combined with percutaneous long double stabilizing screw fixation. Together, Joel and David are considered the godfathers of new MIBS. Interestingly, they could not get their method published in the mainstream medical literature for five years, until it was eventually published in the German Orthopaedic Foot & Ankle Society journal.24 Their procedure, packaged along with chamfered screws, was commercialized in the United States as the minimally invasive chevron akin (MICA™) in January 2018. I performed one of the first United States podiatric 3rd generation MIBS procedures that same month in New York City.

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Other early adopters also took extreme unpopular risk to perform this version of MIBS that at the time could have been misconstrued as medical malpractice. A few of these podiatric pioneers include Eric Baskin (New Jersey), Noman Siddiqui (Maryland), and Brian Loder (Michigan). Some orthopedic colleagues are also adding to the collective experience. The surgical experiential playbook is being written at this very moment, and the supportive literature is starting to percolate in. It is still unknown whether new MIBS will become the gold standard in 20 years, which is about how long a bunion surgery paradigm change cycle seems to take.

The real reason MIBS hasn’t gone mainstream? The current generation of procedures is still not reproducible for the large majority, and thus far only a very few can do it with consistent results. Device companies can persuade a surgeon to jump on the bandwagon to do one or two, but it’s near impossible to get them to follow through with three or four. The maiden voyage cases are often lengthy and pooled in sweat – but also, unrelated to how seasoned the surgeon is. When unfamiliar complications arise (e.g., bur-induced nerve resections, absent bone cal- lus, and/or metatarsal explosion), rest assured the surgeon will start fusing and resume fusing.

Just like the jigs that made midfoot fusion mainstream, MIBS also has its tools that simplify the surgery. Peel back layers of the typical device company onion, and you’ll find that these “profitable” surgeons may tout the jigs but don’t actually use them. Just as ingredients and kitchenware themselves don’t make a meal, screws and tools don’t make a successful surgery. To master MIBS, the human element is necessary. There is no replacing the many many hours one must invest to reach so-called “proficiency,” or the insight to know where one is in that process.

Researchers have concluded that it takes up to forty cases to meet the threshold, but I believe that number is far too low, and would argue that surgeons instead reach “comfortability.” After my 352nd case with the standard generation MIBS procedure, I experienced an ah-ha moment that gave rise to newly re-invented minimally invasive bunion surgery: A forgotten legend: Arch Gynecol Obstet. 2007;276(5):505–509. https://doi.org/10.1007/s00404-007-0732-y. PMID 17458553.


