Minimally Invasive Surgery and Evidence-Based Medicine

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Several years ago two of my articles were published in *PM Magazine*, one titled "Whither Minimally Invasive Foot and Ankle Surgery" and the other entitled "The Many Uses of Minimally Invasive Surgery". In the first article, I stated that, at the time, I'd surfed the web and found that there were well over 6000 books on minimally invasive surgery running the gamut of every imaginable medical and surgical field (over 20) including, spine, cardiac, colorectal, thoracic, bariatric, dental, plastic, gynecological, neurologic, vascular, and orthopedic. This had become the standard of treatment in multiple specialties. Yet at that time, and I believe there still are, only four books dealing with minimally invasive *foot and ankle* surgery, all written by orthopedic surgeons, and none from the United States.

The second article dealt with the wide variances of uses of MIS as compared to traditional surgery, including recovery time and scarring. Surgeon economics were dealt with as well, including travel time, hospital waiting time, hardware costs, and patient economics including hospitalization costs.

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As the current president of the Academy of Minimally Invasive Foot and Ankle Surgery, I am happy to report that both of these articles are now totally outdated. Judging by the worldwide acceptance of MIS and the highly attended seminars held throughout the world attended by podiatrists and orthopedic surgeons, including the academy's recent sold-out seminar in conjunction with L.S.U. Medical School, there is no longer a need to question the need for or the advantages of MIS.

So the final question remains "Why doesn't every foot surgeon use MIS at least as part of their surgical armamentarium". I believe there are two main reasons.

Of course, the obvious #1 reason is that MIS is not part of the curriculum of the schools of podiatric medicine nor of most residencies. If this continues, our young graduates will not only be left behind the podiatrists who perform these procedures, but will be left behind the numerous orthopedic surgeons who are discovering MIS.

I believe the #2 reason is that the lack of publications or evidence-based medicine scares off many surgeons. Everyone who performs MIS has all the evidence s/he needs: i.e., the 1000's of patients we have operated on who previously had traditional surgery on one or both feet. As widespread as these occurrences are, they still can only be classified as opinion and anecdotal evidence (level 5). Unfortunately, in our case it would be extremely difficult to satisfy surgeons who require level 1 or 2 evidence. At level 1, you would need patients to agree to have an MIS procedure on one foot and a traditional procedure on the other foot. At level 2, you would have to have patients sign up for surgery and randomly assign the type of surgery to a surgeon when he arrives at the operating room. At level 3, the doctor is able to compare his own two types of surgery either randomly or in consecutive order. This could apply to the many hybrid surgeons in our profession and needs to be pursued and published. Level 4 is randomly selected case studies, but not necessarily compared to any other group, and level 5 is mostly opinion and anecdotal evidence, which at this point is mostly what is published in our journals.

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In conclusion, for the surgeons throughout the world who routinely perform MIS, the "whither" and "advantage" questions I raised many years ago are moot points. However, we do need more studies and publications based on acceptable levels of evidence and we definitely need to teach these procedures to our students and residents or they will not only be left behind their fellow podiatrists, but also the orthopedic surgeons who are quickly embracing these techniques.

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