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A Maverick Spine Surgeon's Quest to Develop Minimally Invasive Technique & How He's Passing It to the Next Generation: Q&A With Dr. Anthony Yeung

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This past March, Anthony Yeung, MD, founder of Desert Institute for Spine Care in Phoenix, and his wife Eileen, announced they would donate \$2.5 million to develop a comprehensive spine center at his alma mater, the University of New Mexico. The new center will allow him to continue his work in endoscopic laser spine surgery as a professor of spine surgery at the University and pass his techniques on to the next generation of spine surgeons.

Dr. Yeung developed and received FDA approval for the Yeung Endoscopic Spine System in the 1990s, and has continued to evolve, develop, and successfully perform the technique as an outpatient procedure. Now, he will work with Howard Yonas, MD, chairman of the department of neurosurgery at the University of New Mexico to develop the spine center there.

"Currently, many of the new innovative procedures are being done in private practice and in outpatient facilities because the surgeon can perform procedures more efficiently and cost effectively there," says Dr. Yeung. "In spite of having a lot of success with this experience, the head winds are against us because the insurance companies and health plans are doing what they can to deny authorization for many spinal procedures, which they consider costly. Just showing they are beneficial for the patient and efficient for pain relief is not enough. I realized we need to bring minimally invasive surgeries into the mainstream, since a lot of new minimally invasive techniques are not born out of academic centers and teaching universities, but out of entrepreneurial, successful, surgical spine practices. They develop these techniques for their patients and for their successful practice."

Dr. Yeung discusses his decision to support the new spine center at the University of New Mexico and where he sees the spine field headed in the future.

Q: What was the impetus for providing such a large gift to the University of New Mexico?

Dr. Anthony Yeung: I was visiting the university for my 50th class reunion and I met Wendy Stires, who told me about Dr. Yonas and his vision for a multidisciplinary spine center. Both knew I was interested in passing on my experience with outpatient spine surgery, so Dr. Yonas made a special trip from New Mexico to visit me. He was impressed, with my spine center up and asked if I would train his team. They thought it would be great if they could bring a duplicate center to the University. I became interested in his concept and decided to help with the project.

We decided to donate \$2.5 million for naming rights for a center with my name for endoscopic spine surgery. They had the same vision I had: to propose new techniques that are cost-effective. This means developing a multidisciplinary center that brings together different specialties working together. In the past, each physician was very protective of their field; pain physicians wanted to keep patients to do injections, physiatrists wanted to keep patients in rehabilitation and surgeons wanted to just identify the appropriate patients for surgery.

There has been a gap between specialties. In order to be truly responsive and appropriate for our patients, we have to explore every treatment option available.

Q: What are the challenges of making a multidisciplinary center? Are there other examples from around the country?

AY: There are a few other truly multidisciplinary centers, but this may be the first in an academic medical center setting. Working in a multidisciplinary space is a challenge because everyone is looking at the patient from a different perspective. However, a multidisciplinary center will be an ideal situation for teaching and learning. Everyone has their own opinion about care, but for the specialists to work together is rare, especially if there are economic interests involved.

Physicians and surgeons at this center are paid on salary, so they would be more interested in treating patients, teaching, or conducting research. Taking away the emphasis on economic incentives allows all specialists to work together. The research is also an important part of the center because most surgeons in private practice don't have the time to publish their work and payors don't want to pay without evidence-based medicine. In minimally invasive spine surgery in particular, you can't validate outcomes with just studies; you have to rely on cohort studies and expert opinion, know how to avoid issues and keep yourself out of trouble.

Q: How do you plan to enact your vision of a multidisciplinary care center?

AY: My vision is to do this in a university setting where everyone is focused on what is best for the patients. Surgeons at the university can treat a full spectrum of patients,

including indigent patients, not be as concerned about insurance coverage, and take effective techniques into their practice. They will also be able to train future spine surgeons who will spread all over the country. If this is successful, it will influence how we will be able to accomplish the goals of ObamaCare and be able to take care of more people with less money. We will cut out what is being over-utilized in every specialty.

Q: What originally drove you to minimally invasive spine surgery, and then to develop your own technique?

AY: Minimally invasive spine surgery is really something I have devoted most of my spine career to, when I realized it was the way to go. It started with the bad results my own mother had with traditional open spinal decompression that destabilized her spine. I had to take over her care and I learned a lot by taking care of her failed back surgery pain. I realized what we were doing with fusion and traditional decompression was not the way to go. It was too destructive of normal anatomy. I wanted to decompress in a different way — through the foramen — which is what the YESS procedure does.

I trained broadly in orthopedics and spine when I first began, which is different from the very narrow specialization surgeons go through today. I wasn't encumbered by that; I did the best I could with my skills rather than to depend on implants. At the time we just had joint replacement and arthroplasty, and that was evolving.

With this broad perspective, I formulated the idea of taking the knee scope concept to an endoscope for the spine with visualization. This technique benefits patients by offering muscle sparing techniques, preserving motion, lower costs, and of course quicker recovery times. Now I am able to do disc replacements and decompressions without fusion. In the future, fusion will become something surgeons try if less invasive procedures aren't successful. In that way we won't burn any bridges and will save a lot of money in terms of ineffective treatment.

Q: You've seen a lot of changes in spine surgery techniques over your career. How do you see the field continuing to evolve?

AY: Surgeons are now saying we have to evaluate how much it costs for the quality of life surgery offers to figure out what procedure is best. Procedures will evolve to the most cost-effective solution, and fusion as a first line of treatment is expensive. The YESS procedure focuses on treating the causes of pain and costs significantly less. Its emphasis is on surgical philosophy and technique.

You have to think outside of the box and try new things; if something doesn't work, then you can move on to what does work. I published about this procedure 20 years ago when I first began what I'm doing now, and it's changed quite a bit. I can treat almost the entire spectrum of painful degenerative conditions in the spine. I am doing spine surgery with local anesthesia in an outpatient facility. I feel comfortable identifying the pain generator, entering the spine through natural tissue planes and decompressing the spine with patients awake.

Aside from my work with the University of New Mexico, I do also offer quarterly workshops in Phoenix for experienced spine surgeons that want to learn the YESS technique via cadaver labs and actual patients. It is helpful for them to practice injections as well as the surgical approach based on needle placement since this is very different than the traditional methods.

Most months, I am also traveling to other countries to teach my technique to neurosurgeons and orthopedic spine surgeons, hoping to share this knowledge so all appropriate patients can have access to less invasive procedures to treat their back pain.

Now the University of New Mexico spine faculty are taking time off to observe me while I work up patients, scrub in for surgery, and learn the techniques I use so they can apply what they learn on their own patients. By next year, we'll have a system to train the faculty members and they will be working on papers to validate this procedure. We'll measure outcomes as well as cost-effectiveness, which will be important in the years to come. I am excited about this project.