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**Spotlight:
Psychiatry**

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MINIMALLY INVASIVE SURGERY

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THE ORIGINS OF MINIMALLY INVASIVE SURGERY

The Personal Observations of a Maximalist

By Benedict B. Benigno, M.D.

It all happened so suddenly. As soon as Ephraim McDowell performed his historic operation on Jane Todd Crawford in 1809, gynecologists began using a sharp knife to open the abdomen for all sorts of reasons.

In the 1980s, the Nezhath brothers got together at Northside Hospital and changed all that. Their work would make them icons of late 20th century surgery and propel our hospital into the international arena. I was there when the monumental shift to laparoscopic surgery was first proposed, and it gives me great pleasure to share my memories with you.

Camran and Farr Nezhath came into my operating room one day and invited me to dinner. They were very serious, so I became suspicious. They asked me to choose the restaurant, which was a minor mistake, because I picked Hedgerose Heights Inn, known for both good food and high prices. Then they asked me to choose the wine, which was a major mistake.

I had to wait for the dessert to be served to learn the reason for this sudden burst of generosity. “Ben, we want to change the way you operate.” My response was immediate and to the point. “What is wrong with the way I operate?” “Not you personally, the word you is plural

and refers to everyone, including us.” I couldn’t believe this; they were trying to teach me English!

After the coffee was served and the conversation became more relaxed, I began to understand what they

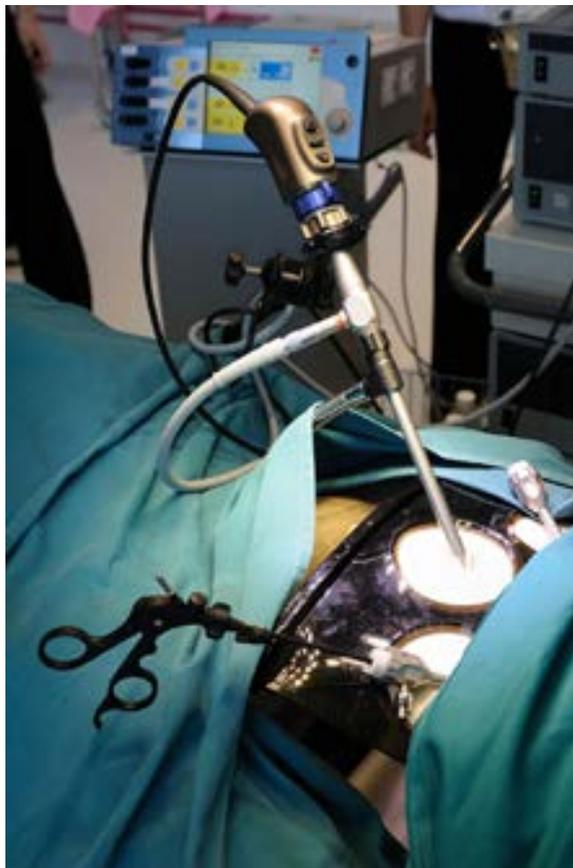
were proposing, and I found it fascinating. At that time, minimally invasive surgery involved, for the most part, tubal ligations. The Nezhaths wanted to start doing virtually everything laparoscopically and, in so doing, to sound the death knell for the time-honored laparotomy.

Their vision extended to oncologic surgery as well, and I listened intently as they told me that a radical hysterectomy could be done safely and, eventually, more rapidly with this technique. They explained that with the image magnifier, obesity would no longer be a problem, and that the smallest blood vessels could be easily seen and ligated. They told me that they wanted me to stand by in case something hit the fan. This was a Tammy Wynette moment –

stand by your minimally invasive surgeon!

“Let me see if I understand you properly,” I said. “You are the opera stars and I am the understudy, waiting in the wings in case one of you gets a cold during the performance.”

“Absolutely not, professore [their nickname for me],” they said in unison. “Just be available in case we need



you. You do this all the time for emergencies in labor and delivery.”

I told them that I applauded their new adventure and that I would be most pleased to help. We were the last people in the restaurant, and I exited with a queasy feeling of the unknown enveloping me, and not even a hint that I was witnessing the onset of a sea change that was soon to transform abdomino pelvic surgery.

Most people in such circumstances would test the waters, first with a toe and then, perhaps a month or two later, with the whole foot. Not these two dudes. The first week was the surgical equivalent of the charge of the Light Brigade!

My observation of their activities was easy because our operating rooms were adjacent to one another. The initial patients were carefully chosen and the surgical procedures meticulously performed over many hours.

It was very important that complications were kept to an absolute minimum. Operating rooms are large fish tanks, and we exist in a state of constant observation.

I popped in several times a day to see how things were going. At first they were going very slowly, as technology was not very advanced. Smoke evacuators did not function well, and the instruments were crude and unwieldy. But the Nezhats were patient, and there was no blood loss.

the Nezhats took a conventional video camera, rigged it to an endoscope and attached it to a television monitor. Video-laparoscopy soon passed into modern medical terminology and allowed the surgeon to operate in the vertical position using both hands and feet simultaneously.

I must confess, the first time I saw Camran operating in the standing position, feverishly using all four extremities, a fleeting image of the one-man-band briefly traversed my countenance. However, there was nothing comical about this scenario as pure magic evolved, and surgery’s Rubicon had been crossed.

Camran and Farr, soon joined by their younger brother, Ceana, performed surgery on patients with stage IV endometriosis on a daily basis at Northside Hospital. Radical hysterectomies for cancer of the cervix as well as surgery for cancer of the endometrium were being performed with full pelvic and para-aortic node dissections.

Even with cancer of the ovary, the tumor would have to be very large to justify an open procedure. Ureters were resected and re-implanted into the bladder. Bowel resections became routine, and vesico-vaginal and recto-vaginal fistulas were repaired, saving patients from many hours of painful and debilitating open surgery.

Sacrocolpopexy and many other complex laparoscopic procedures were performed for the first time by the

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I saw the carbon dioxide laser used to blast away nodules of endometriosis, first from the utero-sacral ligaments and the bladder, and soon after that, from the cul-de-sac and rectum. Ureters were dissected away from dense adhesions and tumor nodularity with a level of safety and elegance not seen before.

Then came the bowel resections and the repair of enterotomies, all performed without the need to open the abdomen. The operative time soon eclipsed that of the open procedure, and the patients were going home the next day without significant pain. Soon, everyone realized that patients were going back to work in a week or two, an unheard of scenario after traditional surgery.

It is hard to determine exactly when these new techniques passed into the surgical canon. In the late ’70s,

Nezhats at Northside Hospital. The death knell was transposed into a dirge as the exploratory laparotomy in pelvic surgery was all but buried.

Gynecologic oncologists get so much credit for doing radical hysterectomies, and yet surgery for endometriosis is frequently taken for granted. It has been my experience that endometriosis provides the pelvic surgeon with one of surgery’s greatest challenges. Adhesion city confounds the melding of rectum, bladder and ureters within rock hard masses. And, as if these anatomic distortions were not enough, many of these women have never had a child, so preservation of fertility is added to the list of difficulties. Laser video-laparoscopy, a technique invented by the Nezhats, has revolutionized the treatment of this painful and debilitating disease.

Just for the record, I was summoned to their operating room only once, and I entered very quietly and was unobserved when I witnessed a truly unbelievable and most memorable conversation. To this day, I cannot remember which brother started the conversation, but I recall every word of it.

Brother No. 1: "My esteemed brother, I forbid you to cut that structure!"

Brother No. 2: "My esteemed brother, may I respectfully suggest that you go take a hike." (Vocabulary rearrangement courtesy of poetic license.)

I interrupted this tender exchange with a very understandable question, "Why have I been summoned?" All the excitement revolved around a little bit of bleeding that was easily stopped. That was my debut as a stand-by surgeon, and there were no encores – not a bad record for 35 years of minimally invasive surgery!

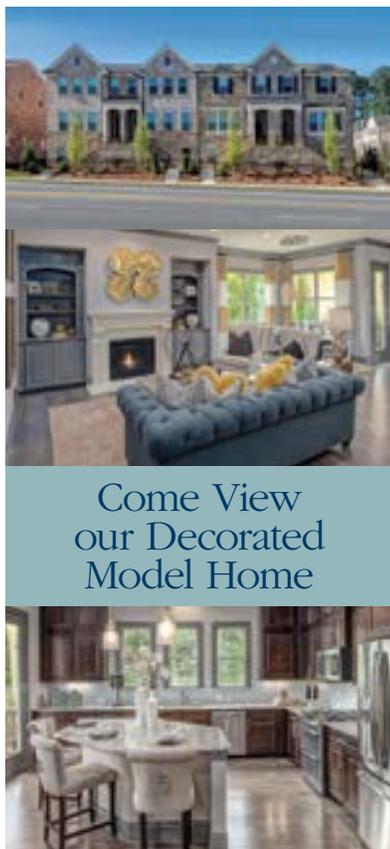
Fame came later; at first, it was notoriety. I noticed that everyone had stopped saying they could do in 45 minutes through a low transverse incision what was taking three hours to do with the laparoscope. But that was when the jokes started. The most famous one involved the high

price that a mechanic charged for repairing a transmission through the tail pipe.

All criticism was ignored, and the Nezhats began to host post-graduate courses so that gynecologists, as well as other surgical specialists, could be trained in this type of surgery. The courses were first held at Northside Hospital, but as their reputations grew, so did the number of attendees. They are now held in large hotels all over the world and, needless to say, minimally invasive surgery is now the very standard of our specialty. Today, it is unheard of for a radical hysterectomy to be performed in any other way, thus validating a prediction made many years ago in an Atlanta restaurant by two daring brothers.

Truth, I am told, is anything that continues, and I have a feeling that these surgical techniques will prevail for quite a while. I find it interesting to examine the reaction to the arrival of minimally invasive surgery within the context of Schopenhauer's famous statement:

- All truth passes through three stages.**
- First, it is ridiculed.**
- Second, it is violently opposed.**
- Third, it is accepted as being self-evident.**



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