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Surgery

Natural-Orifice Surgery - Are We Ready for It?

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**Open Wide. No, Wider.**

**Are we ready for an era of 'natural-orifice surgery'?**

 (HealthNewsDigest.com) - Twenty-five years ago, typical appendectomy patients could expect to spend as many as seven days in the hospital and the rest of their lives with a two-inch scar on their bellies. With the rise of laparoscopic surgery in the late 1980s, losing your appendix became a much simpler and less painful affair: it rarely requires a hospital stay and leaves just three scars, each no more than a half-inch long. But even that minimally invasive procedure wasn't minimal enough for Jeff Scholz, a 40-year-old clothing manufacturer from La Jolla, Calif. Last month Scholz became the first person in the United States to have his appendix removed through his mouth. He awoke from the three-hour operation with a mild sore throat and a single tiny scar on his bellybutton where doctors poked in a camera. Three days later he was doing sit-ups. "I've had plenty of friends who've had traditional appendectomies," says Scholz. "What I had was a cakewalk."

Prepare to cringe—the era of natural orifice surgery is underway. Besides the "appendix through the mouth" procedure, doctors here and around the world have removed gallbladders and kidneys by way of the vagina and are planning operations that can be performed through the anus. Though still experimental (fewer than 50 natural-orifice operations have been performed in the United States so far), the nascent specialty has attracted the support of an enthusiastic group of surgeons who have formed the Natural Orifice Surgery Consortium for Assessment and Research®, conveniently shortened (and trademarked) as NOSCARS®. Orifice-surgery proponents say it is faster and less painful than laparoscopic surgery, potentially cheaper and, well, it doesn't leave scars.

But not everyone is excited. Dr. Ronald Bleday, chief of colorectal surgery at Brigham and Women's Hospital in Boston, says natural-orifice surgery is being oversold. Most of the procedures worldwide have been gallbladder removals, which are usually performed laparoscopically and are already almost painless and scarless, with quick recovery. Bleday isn't convinced that eliminating a few tiny scars is worth the potential complications of experimental surgery. "You're going to have to step back and say, one, what is the value added, and, two, is the enthusiasm a little self-serving in order to keep the research going?" he says.

Dr. Christopher Thompson, director of developmental endoscopy at Brigham and Women's and a NOSCART founder, believes the new approach offers a clear benefit in some cases, and points to gastric revision, an operation to repair a failed gastric bypass. Open and laparoscopic surgeries generally take from two to four hours, and patients spend at least three days in the hospital recovering. Thompson has performed more than two dozen natural-orifice gastric revisions. In a recent procedure on a 58-year-old woman, he used a joystick to manipulate the instruments through a tube in her throat. She went home 90 minutes after her two-hour surgery and is doing fine, he says.

NOSCART doctors reel off a dazzling array of possible applications, including exploratory battlefield surgery for wounded soldiers and operations in impoverished areas, where it's hard to establish a sterile setting. They're cautious in the OR, however; most of the procedures performed in the United States aren't true natural-orifice surgeries since the surgeons insert a laparoscopic camera to see better. Dr. Mark Talamini, chairman of the University of California, San Diego, School of Medicine's department of surgery and one of the doctors (along with Dr. Santiago Horgan) who removed Scholz's appendix, says they spent three hours on the operation—it normally takes as little as 20 minutes—to be extra-safe. The diseased tissue was bagged before removal to prevent contamination. Other potential complications of orifice surgery include infections from internal incisions in otherwise healthy structures, such as the stomach. "The question is going to be whether this really is a better way to do surgery," Talamini says. "It's going to take a while to answer that."

Some of natural-orifice surgery's biggest cheerleaders are device makers: since 2005 at least 10 new companies have sprung up to manufacture technology for the emerging field. Established players, like Covidien and Ethicon, also work closely with doctors. NOSCART received \$2 million in grants last year from device makers, and Thompson estimates that the companies provide nearly half of all funding for orifice-surgery research. Representatives of start-up USGI Medical often give Thompson a first crack at new equipment and sometimes observe surgeries and offer feedback.

What everyone is searching for is a killer application—a genuine (and lucrative) medical advance. "There's no incentive out there to make a device if we're only going to perform a thousand procedures annually," Thompson says. "We do need a high-volume procedure to keep this rolling." Who knows—someday there could be a whole new reason to say "ah."

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