Bursting to get your appendix removed? Hold on

April 11 2011, By Rita Rubin

A small but growing body of evidence suggests that doctors need not rush to perform appendectomies, the most common emergency general surgical procedure in the United States.

Conventional wisdom dating to the late 1800s says if an appendix isn't removed within a few hours of an appendicitis diagnosis, it could burst and lead to potentially life-threatening complications, such as an abscess or peritonitis, inflammation of the abdominal lining.

But concerns about the effect of sleep deprivation on surgeons' performance have spurred researchers to examine whether appendectomies should still be classified as emergencies. Not only could delaying them until after sunrise make for better-rested surgeons, but it could wreak less havoc on operating room schedules and hospital resources.

While the debate continues, "casually, and not on the record, general surgeons will say, 'I never do these things in the middle of the night anymore,'" says Edward Livingston, chief of gastrointestinal and endocrine surgery at the University of Texas Southwestern Medical Center at Dallas.

Patients don't usually object, he says. "You put them on antibiotics and give them pain medication, and they feel a lot better." And, he says, a few clinical trials have even found that the drugs can eliminate the need for surgery altogether.

Researchers at one Pittsburgh hospital thought appendicitis patients who waited more than 10 hours for surgery would do worse than those who had it sooner. But both groups did equally well, according to a 2007 study of 81 patients.

And a 2006 report on 309 appendicitis patients at a New Haven, Conn., hospital found those who had surgery within 12 hours of arriving at the emergency room fared no better than those who waited up to 24 hours for their appendectomy.

More recently, an analysis of nearly 33,000 U.S. appendectomy patients found timing - within six hours, six through 12 hours or more than 12 hours after hospital admission - made no significant difference in their condition 30 days afterward. It also made no difference to the length of their operation or hospital stay.

Angela Ingraham, a general-surgery resident at the University of Cincinnati, was the lead author of that study, published in September in Archives of Surgery. During her residency, she spent two years at the American College of Surgeons in Chicago doing research.

Ingraham says she conceived of the study while moonlighting at a Chicago hospital. When an appendicitis patient showed up at 11:30 p.m., Ingraham says, she told the attending physician, "'I want to go to the OR.' He said, 'Book the case for first thing in the morning.'"

In Cincinnati, as at other large academic medical centers, performing an appendectomy in the middle of the night usually isn't a big deal, Ingraham says, because such hospitals staff their operating rooms 24/7. But, she says, the Chicago hospital was smaller.

Sometimes appendicitis occurs far from a surgeon and OR. A half-century ago, after a Russian physician had to remove his own inflamed

appendix while stationed in Antarctica, Soviet medical staff were required to have their appendix removed before they were deployed, Dutch researchers wrote recently in the journal International Maritime Health.

There were reports of three appendectomies performed by "pharmacist's mates" without surgical instruments onboard submarines in World War II, the authors write. But the U.S. Navy never required sailors to sacrifice their appendix before joining a ship's crew. Instead, the Navy decided that appendicitis should be treated with antibiotics until the patient could be transferred to a surgical facility.

After pooling the results of five studies of non-surgical treatment of appendicitis, the authors concluded that, when an operating room isn't handy, treatment with intravenous and then oral antibiotics can be effective. Because there's a "relatively high" risk of the appendicitis recurring, the researchers write, an appendectomy might still be in order when the patient is close to a surgical facility.

One thing that is clear is that no matter when the appendix is removed, people seem none the worse without it. That led Charles Darwin to conclude it's a useless evolutionary leftover.

Not so fast, says Duke University scientist William Parker. The appendix does have a job to do: storing friendly bacteria that could get wiped out in the gut by severe diarrhea. The thing is, Parker says, ever since we got indoor plumbing, severe diarrhea is pretty rare. So when the bored appendix confronts a possible threat, like maybe a virus, it can overreact and become inflamed.

As evidence, Parker notes that appendicitis was pretty much unheard of in Western countries until after toilets were introduced. And, he says, it's still rare in places where diarrhea from contaminated drinking water is

common.

"Knowing what the appendix is for kind of makes me feel more comfortable about all the appendectomies that are going on," he says.