

Pregnant women have better outcomes after immediate surgery for complicated appendicitis

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Pregnant women who underwent immediate surgery to treat a ruptured or abscessed appendix and their fetuses had significantly better outcomes than those whose condition was managed without an operation. Results from a nationwide study presented at the virtual American College of Surgeons Clinical Congress 2020 form the basis for the potential development of a consensus on optimal management of complicated appendicitis in pregnancy.

Currently, the management of appendicitis in the [general population](#) is somewhat controversial and is especially true for complicated appendicitis. Increasing numbers of surgeons prefer a trial of nonsurgical management; others recommend an immediate operation," explained Kazuhide Matsushima, MD, FACS, an assistant professor of clinical [surgery](#), Keck School of Medicine, University of Southern California (USC), Los Angeles. "This study is a great first step toward a consensus regarding the optimal management of complicated appendicitis in pregnant patients. Randomized clinical trials are necessary to provide

that consensus," he added.

"Based on the current evidence we have, which includes this study, our recommendation would be for surgeons to pursue immediate operation for pregnant patients with complicated appendicitis. Every day of delay to surgery means worse clinical outcomes for the patients as well as the fetus," said Vincent Cheng, MD, a general surgery resident and lead author of the study at USC.

Since the 19th Century, surgery has been the most widely accepted treatment for appendicitis; more than 300,000 appendectomies are performed annually in the US. Laparoscopic appendectomy is the most common surgical treatment. Despite this history, the management of acute appendicitis is still open to debate in terms of such questions as the timing of appendectomy, the safety of in-hospital delay, and the indications for performing appendectomy following a course of antibiotics.

Moreover, increasing numbers of patients in the U.S. are being treated for appendicitis non-operatively. The number has doubled in the last 20 years, according to results of a study presented at the American College of Surgeons Clinical Congress 2017.

Appendicitis during [pregnancy](#) is relatively uncommon. While the raw number and incidence of appendicitis during pregnancy is low, it is actually the most common non-obstetric emergency during pregnancy. It is also the most common non-obstetric reason for surgery during pregnancy, Dr. Cheng said. About 0.1 percent of [pregnant women](#) have appendicitis; in one study, 25 percent of 713 pregnant patients with appendicitis had a perforated appendix. Nonetheless, the condition carries a high risk of serious complications, including loss of the fetus. Perforation of the

appendix increases the risk of death of the mother.

Because of the low incidence of complicated appendicitis in pregnancy, there are no specific recommendations or guidelines on management. A team of surgeons from USC therefore set out to evaluate current treatment of complicated appendicitis in pregnancy by comparing maternal and fetal complications after operative and non-operative management.

The researchers reviewed the National Inpatient Sample dataset from 2003-2015 to identify 8,087 cases of complicated appendicitis in pregnancy. Most (55 percent) had immediate non-invasive surgery. Forty-five percent began a course of non-operative management, which involved a course of antibiotics with or without percutaneous drainage of the inflamed organ. Of the 45 percent of patients who began non-operative management, 74 percent failed and later required an operation (either a laparoscopic procedure or an open appendectomy).

Preterm labor, delivery, and pregnancy termination were more common in the group of women who had non-operative management or delayed surgery than in those who had immediate surgery; the odds of developing these complications were one to three times higher for the non-operative group. Sepsis also was two to four times more common in these groups of patients. The rate of any complication was lowest among patients who had immediate surgery (30 percent) and overall length of stay was two days shorter for these patients.

While further study is needed to eventually arrive at a consensus for treating complicated appendicitis in pregnancy, findings from the study may help guide surgeons and patients. Dr. Matsushima stressed the importance of telling patients that the management of this condition is controversial and explaining the treatment options and risks.

Dr. Cheng pointed out that "every situation is different and every patient is different so the discussion about how to manage this disease process should be a joint process between the patient and the surgeon that presents the pros and cons of the treatment options."

More information: Management of Complicated Appendicitis during Pregnancy: A Nationwide Analysis. Scientific Forum, American College of Surgeons Clinical Congress 2020, October 3-7, 2020.

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