

ULCERATIVE COLITIS

Appendicitis, but not appendectomy, reduces risk of ulcerative colitis

Appendectomy is associated with a reduced risk of developing ulcerative colitis; however, whether this reduction in risk is a consequence of the appendectomy or secondary to an alternative cause has, until now, been unclear. Findings from a new study indicate that appendicitis, but not appendectomy *per se*, is responsible for the reduced incidence of ulcerative colitis commonly associated with this surgical procedure, in both the general population and in at-risk individuals. “Our study provides strong evidence that appendectomy as such has no impact on the future risk of developing ulcerative colitis among members of the general population,” explains the lead researcher, Morten Frisch. “Additionally, appendectomy was associated with no reduction in ulcerative colitis risk among ... individuals with a familial predisposition to IBD.”

The cause of the approximate 50% reduction in risk of the development of ulcerative colitis in individuals who have undergone appendectomy is of considerable clinical importance. If appendectomy *per se* reduces the risk of ulcerative colitis, this procedure could be employed as a measure to actively avert this disease in high-risk individuals. Frisch and colleagues, therefore, conducted their

study to address the question of whether the appendectomy or the underlying morbidity—appendicitis—was responsible for the reduced risk of ulcerative colitis in appendectomized individuals.

The researchers used national databases that contained information on all individuals who had undergone appendectomy in Sweden and Denmark from 1964 to 2004 and 1977 to 2004, respectively. Over 700,000 individuals in these two registries who were eligible for the study were followed up to investigate whether they subsequently developed ulcerative colitis. The researchers found that appendectomy itself did not reduce the risk of ulcerative colitis. Rather, the incidence of ulcerative colitis was only reduced in patients who had undergone appendectomy for appendicitis in childhood or adolescence. Moreover, investigation of 224,483 patients who had a first-degree relative with IBD revealed that appendectomy without underlying appendicitis also did not reduce the risk of ulcerative colitis in this group of individuals. However, similar to the association between appendicitis and the reduced risk of ulcerative colitis in the general population, the presence of appendicitis was also associated with a significant reduction in risk of ulcerative colitis in patients with a familial predisposition to IBD.

This is the first study to examine the possible effect of appendectomy in high-risk individuals with a predisposition to ulcerative colitis. The researchers’ main finding was that removal of the appendix itself does not affect the risk of ulcerative colitis,

which indicates that use of appendectomy as a measure to prevent ulcerative colitis in high-risk individuals would be useless. “The overall take-home message from our study is that appendectomy has no impact on ulcerative colitis risk. Consequentially, the previously hypothesized prophylactic capabilities of appendectomy should be dismissed,” concludes Frisch.

The causes of ulcerative colitis remain poorly understood; however, the etiology probably involves a complex interplay between genetic susceptibility factors and environmental risk factors. Although the findings from the study by Frisch and colleagues reject appendectomy as a cause of the reduced risk of ulcerative colitis, the mechanism by which appendicitis does reduce this risk remains an unanswered question. Possible mechanisms include altered inflammatory responses that might provide immunological protection against the development of ulcerative colitis. Alternatively, genetic traits that increase susceptibility for appendicitis might confer protection against ulcerative colitis. The researchers expect the findings from their study will stimulate investigators from other fields of medicine, such as geneticists and immunologists, to propose possible, testable mechanisms by which appendicitis might reduce the risk of developing ulcerative colitis. They also consider the possibility that appendectomy might have a role in the treatment of patients with established ulcerative colitis: “...on the basis of other recent studies ... whether appendectomy actually improves the clinical course of ulcerative colitis is a subject of considerable interest and relevance to patients with ulcerative colitis and their doctors.”

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