

Epidemiology and Prevention of Postsurgical Adhesions Revisited

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Objective: To provide a comprehensive review of recent epidemiologic data on the burden of adhesion-related complications and adhesion prevention. Second, we elaborate on economic considerations for the application of antiadhesion barriers.

Background: Because the landmark SCAR studies elucidated the impact of adhesions on readmissions for long-term complications of abdominal surgery, adhesions are widely recognized as one of the most common causes for complications after abdominal surgery. Concurrently, interest in adhesion prevention revived and several new antiadhesion barriers were developed. Although these barriers have now been around for more than a decade, adhesion prevention is still seldom applied.

Methods: The first part of this article is a narrative review evaluating the results of recent epidemiological studies on adhesion-related complications and adhesion prevention. In part II, these epidemiological data are translated into a cost model of adhesion-related complications and the potential cost- effectiveness of antiadhesion barriers is explored.

Results: New epidemiologic data warrant a shift in our understanding of the socioeconomic burden of adhesion-related complications and the indications for adhesion prevention strategies. Increasing evidence from cohort studies and systematic reviews shows that difficulties during reoperations, rather than small bowel obstructions, account for the majority of adhesion-related morbidity. Laparoscopy and antiadhesion barriers have proven to reduce adhesion formation and related morbidity. The direct health care costs associated with treatment of adhesion-related complications within the first 5 years after surgery are \$2350 following open surgery and \$970 after laparoscopy. Costs are about 50% higher in fertile-age female patients. Application of an antiadhesion barriers could save between \$328 and \$680 after open surgery. After laparoscopy, the costs impact ranges from \$82 in expenses to \$63 of savings.

Conclusions: Adhesions are an important cause for long-term complications in both open and laparoscopic surgery. Adhesiolysis during reoperations seems to impact adhesion-related morbidity most. Routine application of antiadhesion barriers in open surgery is safe and cost-effective. Application of antiadhesion barriers can be cost-effective in selected cases of laparoscopy. More research is needed to develop barriers suitable for laparoscopic use.

Keywords: adhesions, complications, laparoscopy, laparotomy, prevention

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