

Inhibition of intra-abdominal adhesions: A comparison of hemaseel APR and cryoprecipitate fibrin glue.

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Abstract:

Our previous studies demonstrated fibrin glue (FG) prepared from cryoprecipitate (cryo) inhibits intra-abdominal adhesions in rats. A new FG, Hemaseel APR, is Food and Drug Administration (FDA) approved for hemostasis during cardiac surgery and splenic trauma. This study was undertaken to determine if Hemaseel FG prevents intra-abdominal adhesions, and to compare it to cryo FG. Forty-five rats underwent laparotomy. Bilateral peritoneal-muscular defects were created. Polypropylene mesh was sewn into each defect with a running silk suture. The bowel was abraded with gauze. The rats were then randomized to mesh covered with Hemaseel FG, cryo FG, or control. On postoperative day 7, the severity of adhesions were graded by percentage of mesh covered by adhesion (0-100%) and degree of adhesion (0-3). The mean percentage of mesh covered by adhesion was 9% for Hemaseel FG, 43% for cryo FG ($p = .005$), and 65% for the controls ($p < .0001$). The mean density adhesion score was 0.5 for Hemaseel FG, 1.2 for cryo FG ($p = .04$), and 2.1 for the controls ($p < .0001$). In the Hemaseel FG group, 77% of patches had no adhesions, compared with 37% in the cryo FG group ($p = .004$) and 13% in the controls ($p < .0001$). Thus, Hemaseel FG significantly decreases intra-abdominal adhesions, and is more effective than cryo FG.