

The use of fibrin sealant during non-emergency surgery: a systematic review of evidence of benefits and harms

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Plain English summary

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Surgeons use fibrin sealants during operations in place of stitches. The sealants act like a biological glue, joining tissues together and stopping tissues leaking fluids. Using a fibrin sealant might lower the risk of having a seroma (a collection of fluids) or a haematoma (a collection of blood outside a blood vessel). It is not clear if fibrin sealants are more effective in operations at some body sites than at others, or in different types of operation. In addition, there have been reports of fibrin sealants causing serious harm to people.

This study brings together the evidence on the benefits and harms related to the use of fibrin sealants in different types of surgery. A total of 186 randomised controlled trials and eight observational studies were found that looked at the use of fibrin sealants during surgery at various body sites, including the liver, stomach, pancreas, heart and lungs. The evidence suggests a benefit for fibrin sealants in reducing the likelihood of haematomas, particularly in hernia surgery, but there is uncertainty regarding whether or not there is a benefit in surgery at all sites. Harms related to fibrin sealant use were reported in 10 randomised controlled trials and eight observational studies across surgical specialties, whereas 22 randomised controlled trials stated no harmful events. One randomised controlled trial reported a death caused by a large bleed that was possibly related to fibrin sealant use, but other studies did not report deaths or serious harms. However, holding the spray too close to a wound during application of the sealant has been found to introduce air into the body, which could increase the risk of dying, but this is rare.

We found a large number of studies that showed a reduction in the risk of developing haematoma during non-emergency surgery when fibrin sealant is used. Overall, the quality of the evidence found was unclear, mostly because the methods used in studies were not reported clearly. Future research is needed to improve the confidence of decision-making.

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