Fibrin sealant: A review of its use in surgery and endoscopy.

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Abstract:

Fibrin sealant (fibrin adhesive; fibrin glue; Beriplast P) is a haemostatic and wound support product consisting of the blood coagulation factors fibrinogen, factor XIII and thrombin, the antifibrinolytic agent aprotinin and calcium chloride. Fibrin sealant has been used to good effect in a wide variety of surgical and endoscopic procedures. Suture support was provided in series of patients with oesophageal, gastric, colonic or rectal anastomoses, and fibrin sealant was as effective in haemostasis as microcrystalline collagen powder in hepatic surgery. It did not reduce postoperative peritoneal drainage after elective cholecystectomy, however. A 41% reduction ($p < 0.02$) in incidence of air leakage was achieved when fibrin sealant was added to sutures in patients undergoing pulmonary resection in a randomised single-blind study. A high rate of complete remission of malignant pleural effusion has been reported after intrapleural instillation of fibrin sealant, and successful sealing of CSF leaks after trauma or surgery has also been achieved. Attenuation of prolonged or excessive haemorrhage after dental extraction has been achieved in patients on anticoagulant therapy or with haemorrhagic disorders who received fibrin sealant with packing and suturing. Repeated endoscopic injection of fibrin sealant was superior to single injection sclerotherapy with polidocanol 1% in a randomised study in 805 patients with bleeding peptic ulcers. Other data suggest that endoscopic injection of fibrin sealant is associated with lower recurrence of bleeding and need for emergency surgery than thrombin with adrenaline (epinephrine) or hypertonic saline with adrenaline. Similar haemostatic efficacy to laser photocoagulation or sclerotherapy was reported in a retrospective comparison. A statistically significant reduction relative to suturing in the incidence of wound dehiscence was reported after the use of fibrin sealant in cataract surgery, and

benefit of the sealant has also been noted in patients receiving skin grafts and in those undergoing transurethral resection of the prostate gland. Conclusions: Although comparative studies would assist in the clarification of the place of the product discussed with respect to other haemostatic or wound support techniques and to other fibrin sealants, the formulation reviewed here has been shown overall to be effective and well tolerated in a variety of haemostatic and wound healing support roles in numerous types of surgery. Fibrin sealant has also been shown to be useful when administered endoscopically, with superiority over sclerotherapy being shown after repeated application in patients with peptic ulceration. Fibrin sealant can therefore be considered useful in a number of surgical and endoscopic settings.