Tisseel

Tisseel utilized as hemostatic in spine surgery impacts time to drain removal and length of stay.

Authors: Epstein N.E.

Publication Date: 2014

Abstract:

Background: Although fibrin sealants (FSs) and fibrin glues (FGs) are predominantly utilized to strengthen repairs of cerebrospinal fluid (CSF) fistulas (deliberate/traumatic) during spinal surgery, they are also increasingly utilized to achieve hemostasis. Here, we investigated whether adding Tisseel (Baxter International Inc., Westlake Village, CA, USA), utilized to address increased bleeding during multilevel lumbar laminectomies with non-instrumented fusions, would reduce or equalize the time to drain removal and length of stay (LOS) without contributing to infections or prolonging time to fusion. Methods: Prospectively, 39 patients underwent multilevel laminectomies and 1-2 level non-instrumented (in situ) fusions to address stenosis/olisthesis; 22 who demonstrated increased intraoperative bleeding received Tisseel, while 17 without such bleeding did not. Results: The 22 receiving versus 17 not receiving Tisseel, with similar clinical parameters, underwent comparable average multilevel laminectomies (4.36 and 4.25) and 1-2 level fusions (1.4 vs. 1.29 levels). As anticipated, for those receiving Tisseel, the average intraoperative estimated blood loss (EBL), total postoperative blood loss, and total perioperative transfusion requirements [red blood cells (RBC), fresh frozen plasma (FFP), platelets] were higher. However, Tisseel had the added benefit of equalizing the time to postoperative drain removal [e.g. 3.41 days (with) vs. 3.38 days (without)] and LOS [e.g. 5.86 days (with) vs. 5.82 days (without)] without increasing the infection rates (e.g. one superficial infection per group) or average times to fusion (e.g. 5.9 vs. 5.5 months). Conclusions: Adding Tisseel for increased bleeding during multilevel laminectomies/in situ fusions contributed to hemostasis by equalizing the average times to drain removal/LOS compared to

patients without increased bleeding and not requiring Tisseel. Copyright:

Hemostasis and other benefits of fibrin sealants/glues in spine surgery beyond cerebrospinal fluid leak repairs.

Authors: Epstein N.E.

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Abstract:

Background: Fibrin sealants (FS)/glues (FG) are primarily utilized in spinal surgery to either strengthen repairs of elective (e.g., intradural tumors/pathology) or traumatic cerebrospinal fluid (CSF) fistulas. Here, additional roles/benefits of FS/FG in spine surgery are explored; these include increased hemostasis, reduction of scar, reduction of the risk of infection if impregnated with antibiotics, and its application to restrict diffusion and limit some of the major complications attributed to the controversial "off-label" use of bone morphogeneitc protein (rhBMP-2/INFUSE). Methods: We reviewed multiple studies, focusing not just on the utility of FS/FG in the treatment of CSF fistulas, but on its other applications. Results: FS/FG have been primarily used to supplement elective/traumatic dural closure in spinal surgery. However, FS/FG also contribute to; hemostasis, reducing intraoperative/postoperative bleeding/transfusion requirements, length of stay (LOS)/costs, reduced postoperative scar/radiculitis, and infection when impregnated with antibiotics. Nevertheless, one should seriously question whether FS/FG should be applied to prevent diffusion and limit major complications attributed to the "off-label" use of BMP/INFUSE (e.g., limit/prevent heterotopic ossification, dysphagia/respiratory decompensation, and new neurological deficits). Conclusions: FS/FG successfully supplement watertight dural closure following elective (e.g., intradural tumor) or traumatic CSF fistulas occurring during spinal surgery. Additional benefits include: intraoperative hemostasis with reduced postoperative drainage, reduced transfusion requirements, reduced LOS, cost, scar, and prophylaxis against infection (e.g., impregnated with antibiotics). However, one should seriously question whether FS/FG should be used to contain the

diffusion of BMP/INFUSE and limit its complications when utilized "off-label". Copyright:

Fibrin tissue adhesive for face- and necklift.

Authors: Berry MG, Stanek JJ

Publication Date: 2015

Abstract:

INTRODUCTION: Although available for decades, fibrin-based tissue adhesives (FTAs) have enjoyed only variable popularity in aesthetic surgery since their introduction in the 1980s. Whilst benefits in facelift surgery have been reported for a range of measures, including expanding haematoma, oedema and ecchymosis, irrefutable evidence has not yet been forthcoming. We instigated a prospective study to test the hypothesis that an underappreciated property of FTA, namely its ability to distribute tension, would reduce complications and revision due to early relapse.

PATIENTS AND METHODS: The study group comprised 100 consecutive facelifts with FTA. The comparative group comprised the immediate preceding 100 patients who underwent similar interventions, but with drains instead of FTA. All surgery was undertaken by the senior author using standard techniques and statistical analysis employing Fisher's exact test.

RESULTS: The groups were comparable in age, gender distribution, co-morbidity and declared cigarette smoking. Complications were recorded in 24 patients with significantly more in the comparative group ($p = 0.048$), particularly hypertrophic scarring ($p = 0.029$). Although there appeared a greater prevalence of revision and cutaneous necrosis in the comparative group, these did not reach statistical significance.

DISCUSSION: To the many published benefits, we can add that FTA can reduce complications, particularly hypertrophic scarring, and it now forms an important part of our facelift practice.

The effect of TISSEEL fibrin sealant on seroma formation following complex abdominal wall hernia repair: a single institutional review and derived cost analysis.

Authors: Azoury SC, Rodriguez-Unda N, Soares KC, Hicks CW, Baltodano PA, Poruk KE, Hu QL, Cooney CM, Cornell P, Burce K, Eckhauser FE

Publication Date: 2015

Abstract:

PURPOSE: The authors evaluated the ability of a fibrin sealant (TISSEELTM: Baxter Healthcare Corp, Deerfield, IL, USA) to reduce the incidence of post-operative seroma following abdominal wall hernia repair.

METHODS: We performed a 4-year retrospective review of patients undergoing abdominal wall hernia repair, with and without TISSEEL, by a single surgeon (FEE) at The Johns Hopkins Hospital. Demographics, surgical risk factors, operative data and 30-day outcomes, including wound complications and related interventions, were compared. The quantity and cost of Tisseel per case was reviewed.

RESULTS: A total of 250 patients were evaluated: 127 in the TISSEEL group and 123 in the non-TISSEEL control group. The average age for both groups was 56.6 years (P = 0.97). The majority of patients were female (TISSEEL 52.8%, non-TISSEEL 56.1%, P = 0.59) and ASA Class III (TISSEEL 56.7%, non-TISSEEL 58.5%, P = 0.40). There was no difference in the average defect size for both groups (TISSEEL 217 +/- 187.6 cm(2), non-TISSEEL 161.3 +/- 141.5 cm(2), P = 0.36). Surgical site occurrences occurred in 18.1% of the TISSEEL and 13% of the non-TISSEEL group (P = 0.27). There was a trend towards an increased incidence of seroma in the TISSEEL group

(TISSEEL 11%, non-TISSEEL 4.9%, P = 0.07). A total of $124,472.50 was spent on TISSEEL, at an average cost of $995.78 per case.

CONCLUSIONS: In the largest study to date, TISSEELTM application offered no advantage for the reduction of post-operative seroma formation following complex abdominal hernia repair. Moreover, the use of this sealant was associated with significant costs.

Use of a fibrin adhesive for conjunctival closure in trabeculectomy.

Authors: Martinez-de-la-Casa JM, Rayward O, Saenz-Frances F, Mendez C, Bueso ES, Garcia-Feijoo J

Publication Date: 2013

Abstract:

PURPOSE: To assess the safety and efficacy of a fibrin tissue adhesive (Tissucol Duo()) used to close the conjunctiva in trabeculectomy.

METHODS: A nonrandomized prospective study including 57 patients with chronic simple glaucoma who underwent trabeculectomy surgery. All the trabeculectomies were conducted by the same surgeon using the same surgical technique with the exception that conjunctival closure was achieved by either running Nylon 10/0 suture (n = 29) or using the fibrin glue (n = 28). Preoperative and postoperative data were obtained on intraocular pressure (IOP), number of hypotensive medications used, self-reported discomfort and complications arising during and after surgery.

RESULTS: No differences were detected between the two patient groups regarding the intraocular pressure reduction achieved during follow-up. In the first 2 weeks of follow-up, reported discomfort assessed using a visual analogue scale was significantly lower in the Tissucol Duo() group. Two patients in the Tissucol Duo() group suffered conjunctival dehiscence and suturing was required at 24 hours postsurgery. Remaining complications were similar in the two groups.

CONCLUSION: The use of Tissucol Duo() seems to be a safe and efficient option for conjunctival closure in trabeculectomy that simplifies the surgical procedure and reduces patient discomfort in the immediate postoperative period.

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