Epidemiology

Use of the bovine pericardial patch and fibrin sealant in meningomyelocele closure.

Authors: Gurer B, Kertmen H, Akturk UD, Kalan M, Sekerci Z

Publication Date: 2014

Abstract:

BACKGROUND: Meningomyelocele is the most common and complex birth defect of the central nervous system. The operative principle of meningomyelocele repair consists of consecutive separate closures of the neural placode, dura mater, lumbar fascia, subcutaneous layer, and skin. While the neurosurgical techniques for the closure of the neural placode and dura mater have been well accepted, the most appropriate soft tissue closure technique has not yet been applied. METHODS: This study reviews a case series of eight meningomyelocele patients treated with the bovine pericardial patch and fibrin sealant. Following the reconstruction of the neural placode and the closure of the dura mater, soft tissue coverage was achieved using the bovine pericardial patch and fibrin sealant. RESULTS: In this series of eight patients, stable coverage was achieved with the application of a bovine pericardial patch and fibrin sealant technique. After the operations, none of the possible complications such as cerebrospinal fluid leak, seroma, hematoma, skin necrosis, deep or superficial infection, and wound breakdown was observed. CONCLUSIONS: The usage of the bovine pericardial patch and fibrin sealant technique at the fascial level-between the dural sac and the skin-provides adequate soft tissue coverage in meningomyelocele repair surgery.

Full Text:

Not Available

Reduction in surgical site infection in patients treated with microbial sealant prior to coronary artery bypass graft surgery: a case-control study.

Authors: Dohmen PM, Gabbieri D, Weymann A, Linneweber J, Konertz W

Publication Date: 2009

Abstract:

Surgical site infection (SSI) is a serious complication after cardiac surgery. This case-control study investigated the effect of a cyanoacrylate-based microbial skin sealant (IntéguSeal) applied preoperatively on the SSI rate in patients undergoing coronary artery bypass graft (CABG) surgery. Of 676 patients who underwent CABG surgery with or without concomitant procedure(s) between March

and November 2007, 545 received standard preoperative care and 131 also received pretreatment with the microbial sealant. Of these, 90 cases pretreated with microbial sealant and 90 controls were matched using established preoperative and intraoperative risk factors for SSI. Preoperative risk scores for SSI were 9.9+/-4.3 and 9.7+/-4.0 (P=0.747) for the microbial sealant and the control group, respectively, and combined preoperative-intraoperative risk scores were 9.7+/-4.1 and 8.7+/-3.5 (P=0.080), respectively. Carotid artery disease (P=0.019), congestive heart failure (P=0.019), acute myocardial infarction (P=0.001) and emergency surgery (P=0.026) were significantly more common in the microbial sealant group. Follow-up was 100% for both groups. Superficial or deep sternal infection 30 days post surgery developed in seven patients (7.8%) in the control group compared with one patient (1.1%) in the microbial sealant group (odds ratio 7.5). In summary, the inclusion of microbial sealant in preoperative patient preparation seems to reduce the incidence of SSI following CABG surgery; further larger studies are needed before firm conclusions can be drawn.

Full Text:

Not Available

Multidisciplinary treatment of cerebral arteriovenous malformations; preliminary results in 115 consecutive patients. [Dutch]

Authors: Van Rooij W.J.J., Sluzewski M., Wijnalda D., Schellens R.L.L.A., Verhagen I.T.H.J., Karlsson B.

Publication Date: 1997

Abstract:

Objective. Preliminary evaluation of the combined treatment (surgery, embolization and stereotactic gamma radiosurgery) of 115 consecutive patients with a cerebral arteriovenous malformation (AVM). Design. Retrospective. Setting. St. Elisabeth Hospital, Tilburg, the Netherlands. Patients and methods. In a 35-month period 115 consecutive patients presented with an AVM. The mean age was 41.8 years (range: 6-72). The main clinical presentation was haemorrhage in 65 patients (56.5%), seizures in 31 patients (27.0%), neurological deficit in 7 patients (6.1%) and hydrocephalus in 2 patients (1.7%); in 10 patients (8.7%) the AVM was an incidental finding. Treatment consisted of surgery, radiosurgery with the gamma knife and embolization. Embolization was mostly used to reduce the size of an AVM before surgery or radiosurgery. Results. Out of 115 patients 5 were referred for a treatment advice only and treatment was performed elsewhere. Of the remaining 110 patients 84 (76.4%) were treated and 26 (213.6%) were not treated for various reasons. Of the 84 treated patients 17 (20.2%) had surgery only, 17 (20.2%) had radiosurgery only, and 12 (14.3%) were treated with embolization only. Surgery after embolization was performed in 8 patients (9.5%) and radiosurgery after embolization in 26 patients (31.0%). In 4 patients an unusual combination of these treatment methods was used for a variety of reasons. At the time of writing 35 of 84 treated AVMs (41.7%) were completely cured, 39 patients were awaiting the definitive result of radiosurgery. Deliberate partial embolization was performed in 5 patients. In 5 patients (6.0%), the pretreatment objective was not achieved with embolization. Total permanent morbidity was 4.8% (4 patients) and mortality was 1.2% (1 patient). Conclusion. Given a multidisciplinary combination of treatment methods a treatment is indicated and possible in the majority (76.4%) of patients with an AVM. There is a reasonable chance of a complete cure with an acceptable

complication rate.

Full Text:

Not Available

Minimizing Collateral Brain Injury Using a Protective Layer of Fibrin Glue: Technical Note.

Authors: Basma J, Latini F, Ryttlefors M, Abuelem T, Krisht AF

Publication Date: 2015

Abstract:

BACKGROUND: Neurosurgical procedures expose the brain surface to a constant risk of collateral injury. We describe a technique where the brain surface is covered with a protective layer of fibrin glue and discuss its advantages. METHODS: A thin layer of fibrin glue was applied on the brain surface after its exposure in 34 patients who underwent different craniotomies for tumoral and vascular lesions. Data of 35 more patients who underwent standard microsurgical technique were collected as a control group. Cortical and pial injuries were evaluated using an intraoperative visual scale. Eventual abnormal signals at the early postoperative T2-weighted fluid-attenuated inversion recovery (T2FLAIR) magnetic resonance imaging (MRI) sequences were evaluated in oncological patients. RESULTS: Total pial injury was noted in 63% of cases where fibrin glue was not used. In cases where fibrin glue was applied, a significantly lower percentage of 26% ($P < 0.01$) had pial injuries. Only 9% had injuries in areas covered with fibrin glue ($P < 0.0001$). Early postoperative T2FLAIR MRI confirmed the differences of altered signal around the surgical field in the two populations. CONCLUSION: We propose beside an appropriate and careful microsurgical technique the possible use of fibrin glue as alternative, safe, and helpful protection during complex microsurgical dissections. Its intrinsic features allow the neurosurgeon to minimize the cortical manipulation preventing minor collateral brain injury.

Full Text:

Not Available

Complications following decompression of Chiari malformation Type I in children: dural graft or sealant?.

Authors: Parker SR, Harris P, Cummings TJ, George T, Fuchs H, Grant G

Publication Date: 2011

Abstract:

OBJECT: Posterior fossa decompression with duraplasty for Chiari malformation Type I (CM-I) is a common pediatric neurosurgery procedure. Published series report a complication rate ranging from 3% to 40% for this procedure. Historically, many dural substitutes have been used, including bovine grafts, human cadaveric pericardium, synthetic dura, and autologous pericranium. The authors hypothesized that a recently observed increase in complications was dependent on the graft used. METHODS: Between January 2004 and January 2008, 114 consecutive patients <= 18 years old underwent primary CM-I decompression using duraplasty. Records were retrospectively reviewed for short- and intermediate-term complications and operative technique, focusing on the choice of duraplasty graft with or without application of a tissue sealant. RESULTS: The average age of the patients was 8.6 years. The dural graft used was variable: 15 were treated with cadaveric pericardium, 12 with Durepair, and 87 with EnDura. Tisseel was used in 75 patients, DuraSeal in 12, and no tissue sealant was used in 27 patients. The overall complication rate was 21.1%. The most common complications included aseptic meningitis, symptomatic pseudomeningocele, or a CSF leak requiring reoperation. The overall complication rates were as follows: cadaveric pericardium 26.7%, Durepair 41.7%, and EnDura 17.2%; reoperation rates were 13%, 25%, and 8.1%, respectively. Prior to adopting a different graft product, the overall complication rate was 18.1%; following the change the rate increased to 35%. Complication rates for tissue sealants were 14.8% for no sealant, 18.7% for Tisseel, and 50% for DuraSeal. Nine patients were treated with the combination of Durepair and DuraSeal and this subgroup had a 56% complication rate. CONCLUSIONS: Complication rates after CM-I decompression may be dependent on the dural graft with or without the addition of tissue sealant. The complication rate at the authors' institution approximately doubled following the adoption of a different graft product. Tissue sealants used in combination with a dural substitute to augment a duraplasty may increase the risk of aseptic meningitis and/or CSF leak. The mechanism of the apparent increased inflammation with this combination remains under investigation.

Full Text:

Not Available

Effect of fibrin glue on the prevention of persistent cerebral spinal fluid leakage after incidental durotomy during lumbar spinal surgery.

Authors: Jankowitz BT, Atteberry DS, Gerszten PC, Karausky P, Cheng BC, Faught R, Welch WC

Publication Date: 2009

Abstract:

Approximately one million spinal surgeries are performed in the United States each year. The risk of an incidental durotomy (ID) and resultant persistent cerebrospinal fluid (CSF) leakage is a significant concern for surgeons, as this complication has been associated with increased length of hospitalization, worse neurological outcome, and the development of CSF fistulae. Augmentation of standard dural suture repair with the application of fibrin glue has been suggested to reduce the frequency of these complications. This study examined unintended durotomies during lumbar spine surgery in a large surgical patient cohort and the impact of fibrin glue usage as part of the ID repair on

the incidence of persistent CSF leakage. A retrospective analysis of 4,835 surgical procedures of the lumbar spine from a single institution over a 10-year period was performed to determine the rate of ID. The 90-day clinical course of these patients was evaluated. Clinical examination, B-2 transferrin assay, and radiographic imaging were utilized to determine the number of persistent CSF leaks after repair with or without fibrin glue. Five hundred forty-seven patients (11.3%) experienced a durotomy during surgery. Of this cohort, fibrin glue was used in the dural repair in 278 patients (50.8%). Logistic models evaluating age, sex, redo surgery, and the use of fibrin glue revealed that prior lumbar spinal surgery was the only univariate predictor of persistent CSF leak, conferring a 2.8-fold increase in risk. A persistent CSF leak, defined as continued drainage of CSF from the operative incision within 90 days of the surgery that required an intervention greater than simple bed rest or over-sewing of the wound, was noted in a total of 64 patients (11.7%). This persistent CSF leak rate was significantly higher ($P < 0.001$) in patients with prior lumbar surgery (21%) versus those undergoing their first spine surgery (9%). There was no statistical difference in persistent CSF leak between those cases in which fibrin glue was used at the time of surgery and those in which fibrin glue was not used. There were no complications associated with the use of fibrin glue. A history of prior surgery significantly increases the incidence of durotomy during elective lumbar spine surgery. In patients who experienced a durotomy during lumbar spine surgery, the use of fibrin glue for dural repair did not significantly decrease the incidence of a persistent CSF leak.

Full Text:

Not Available

The use of fibrin sealant to prevent major complications following laparoscopic gastric bypass: results of a multicenter, randomized trial.

Authors: Silecchia G, Boru CE, Mouiel J, Rossi M, Anselmino M, Morino M, Toppino M, Gaspari A, Gentileschi P, Tacchino R, Basso N

Publication Date: 2008

Abstract:

BACKGROUND: Published interim results have shown that fibrin sealant (Tissucol/Tisseel Baxter AG, Vienna, Austria) may be effective in preventing anastomotic leaks and internal hernias following laparoscopic Roux-en-Y gastric bypass (LRYGBP). We report the final results of a multicenter, randomized clinical trial evaluating the use of fibrin sealant in LRYGBP. METHODS: Between January 2004 and December 2005, 340 patients aged 21-65 years with a body mass index (BMI) of 40-59 kg/m(2) undergoing LRYGBP were randomized (1:1) to two treatment groups: fibrin sealant group (applied to gastrojejunal and jejunojejunal anastomoses and over mesenteric openings), and control group (no fibrin sealant; suture of the mesenteric openings). Operative time, early and late complications, reinterventions, time to oral diet initiation, and length of stay were assessed. RESULTS: Overall, 320 patients were included into the study: 160 in the control group and 160 in the fibrin sealant group. All patients completed follow-up assessments at 6 and 12 months, and 60.9% completed assessments at 24 months. There were no significant differences between groups with respect to demographics, operative time, oral diet initiation, hospital stay, and BMI reduction at 6, 12, and 24 months. The incidence of anastomotic leak was numerically, but not significantly, greater in the control

group. The overall reintervention rate for specific early complications (<30 days) was significantly higher in the control group (p = 0.016). No deaths or conversions to open laparotomy occurred. CONCLUSION: The use of fibrin sealant in laparoscopic RYGBP may be beneficial in reducing the reintervention rate for major perioperative (<30 days) complications. Larger studies are needed.

Full Text:

Not Available

Additional aerostasis with a 100% autologous fibrin glue in lung surgery--a prospective randomised trial. [Bulgarian]

Authors: Anonymous

Publication Date: 2009

Abstract:

OBJECTIVES: To evaluate the efficacy of the additional aerostasis with 100% autologous fibrine glue (AFG) in a prospective randomized trial. MATERIAL AND METHODS: A total of 100 patients, operated on for bullous emphysema and spontaneous pneumothorax, were randomized into two homogenous groups: Group A (with additional intraoperative aerostasis with AFG) and Group B (control group). The patients in these groups were also stratified into two groups each: Subgroup A1 and Subgroup B1 (with slight intraoperative leakage - < 20%) and Subgroup A2 and Subgroup B2 (with moderate and severe intraoperative leakage - > 20%). The intraoperative monitoring of the aerostasis was achieved by pressure/volume (P/V) curves constructed by an AS/3 Datex monitor. The duration of air leakage, intrapleural drainage and postoperative hospital stay were monitored postoperatively. The postoperative complications and the hospital stay cost for the patient in both groups were compared as well. RESULTS: A significant reduction (p<0.001) occurred in Group A and Subgroup A2 campared with Group B and Subgroup B2 for the mean duration of air leak (3.4 +/- 1.6 vs 6.8 +/- 1.9, resp. 2.2 +/- 0.98 vs 5.4 +/- 1.2), the duration of chest drainage (4.2 +/- 1.5 vs 9.6 +/- 2.8, resp. 6.1 +/- 2.4 vs 10.8 +/- 3.6 and the postoperative stay (6.7 +/- 2.1 vs 10.08 +/- 3.9, resp. 7.9 +/- 2.7 vs 11.82 +/- 4.2. In the Sibgroups A1 and B1 there were no statistically significant differences of the observed postoperative variables. The incidence rate of postoperative complications is significantly higher in Group B (16% vs 42%). There was a significantly reduction of hospital stay cost in leva for one patients in Group A compared with Group B (2940 +/- 246 vs 4466 +/- 321). CONCLUSIONS: Intraoperative additional aerostasis with 100%AFG is a highly effective (especially in cases with moderate and severe leakage), safe, simple and economical procedure.

Full Text:

Not Available

Use of sealants and buttressing material in pulmonary surgery: an evidence-based approach. [Review] [65 refs]

Authors: Rice TW, Blackstone EH

Publication Date: 2010

Abstract:

It is imperative to minimize the occurrence and adverse consequences of air leak complicating pulmonary surgery. This article reviews the contemporary literature and provides recommendations for intraoperative use of agents to control air leak. An evidence-based analysis of the current literature does not support routine use, prophylactically or for air leaks present at operation, of sealants or buttressing material in pulmonary surgery. [References: 65]

Full Text:

Not Available

Fibrin glue for sealing the needle track in fine-needle percutaneous lung biopsy using a coaxial system: Part II--Clinical study.

Authors: Petsas T, Siamblis D, Giannakenas C, Tepetes K, Dougenis D, Spiropoulos K, Fezoulis I, Dimopoulos I

Publication Date: 1995

Abstract:

PURPOSE: Following percutaneous lung biopsy (PLB), we used fibrin glue as a sealant in 26 patients for the purpose of decreasing the incidence of pneumothorax. METHODS: All 26 patients (group A) had chronic obstructive pulmonary disease (COPD). The results for group A were compared with a control group of 32 patients (group B), also with COPD and in whom fibrin glue was not used. All biopsies were conducted under computed tomography (CT) using a coaxial needle system consisting of 19-gauge and 22-gauge needles. RESULTS: Pneumothorax developed in five patients (19.2%) in group A and in one instance, drainage was required (3.8%). In group B, pneumothorax developed in 13 patients (40.6%) and in six instances (18.8%) drainage was required. Comparing the use of chest-tube drainage in the two groups, a statistical significance was observed, $p < 0.0025$). No adverse reactions related to the fibrin glue were observed. CONCLUSION: Our results indicate that fibrin glue is a safe sealing material for lung PLB and serves to decrease the incidence and, in particular, the severity of pneumothorax, especially in high-risk patients.

Full Text:

Not Available

Is fibrin sealant effective and safe in total knee arthroplasty? A meta-analysis of randomized trials.

Authors: Wang H., Shan L., Zeng H., Sun M., Hua Y., Cai Z.

Publication Date: 2014

Abstract:

The objective of this study was to evaluate the efficacy and safety of fibrin sealant in patients following total knee arthroplasty (TKA). A comprehensive literature search of the electronic databases PubMed, MEDLINE, Web of Science, and Cochrane Library for published randomized controlled trials (RCTs) was undertaken. The evidence base was critically appraised using a tool from the Cochrane Bone, Joint and Muscle Trauma Group. Eight RCTs involving 641 patients were included. The use of fibrin sealant significantly reduced postoperative drainage (weighted mean difference (WMD) -346, 95% confidence interval (CI) -496.29 to -197.54, P < 0.00001) and blood transfusions (risk ratio (RR) 0.47, 95% CI 0.35 to 0.63, P < 0.00001) and led to a significant improvement in the range of motion (WMD 16.59, 95% CI 6.92 to 26.25, P = 0.0008). However, using fibrin sealant did not significantly reduced total blood loss (WMD -305.25, 95% CI -679.44 to 68.95, P = 0.11). Regarding complications, there were no significant differences in any adverse events, fever, infection, or hematoma among the study groups. In conclusion, the present meta-analysis indicates that the use of fibrin sealant was effective and safe as a hemostatic therapy for patients with TKA.

Full Text:

Not Available

Laparoscopic repair of inguinal hernia using Surgisis mesh and fibrin sealant.

Authors: Fine A.P.

Publication Date: 2006

Abstract:

OBJECTIVE: We tested the hypothesis that laparoscopic inguinal herniorrhaphy using Surgisis mesh secured with fibrin sealant is an effective long-term treatment for repair of inguinal hernia. This case series involved 38 adult patients with 51 inguinal hernias treated in a primary care center. METHODS: Between December 2002 and May 2005, 38 patients with 45 primary and 6 recurrent inguinal hernias were treated with laparoscopic repair by the total extraperitoneal mesh placement (TEP) technique using Surgisis mesh secured into place with fibrin sealant. Postoperative complications, incidence of

pain, and recurrence were recorded, as evaluated at 2 weeks, 6 weeks, 1 year, and with a follow-up questionnaire and telephone interview conducted in May and June 2005. RESULTS: The operations were successfully performed on all patients with no complications or revisions to an open procedure. Average follow-up was 13 months (range, 1 to 30). One hernia recurred (second recurrence of unilateral direct hernia), indicating a 2% recurrence rate. CONCLUSIONS: Laparoscopic repair of inguinal hernia using Surgisis mesh secured with fibrin sealant can be effectively used to treat primary, recurrent, direct, indirect, and bilateral inguinal hernias in adults without complications and minimal recurrence within 1-year of follow-up.

Full Text:

Not Available

Does fibrin glue sealant decrease the rate of pancreatic fistula after pancreaticoduodenectomy? Results of a prospective randomized trial.

Authors: Lillemoe K.D., Cameron J.L., Kim M.P., Campbell K.A., Sauter P.K., Coleman J.A., Yeo C.J.

Publication Date: 2004

Abstract:

Despite substantial improvements in perioperative mortality, complications, and specifically the development of a pancreatic fistula, remain a common occurrence after pancreaticoduodenectomy. It was the objective of this study to evaluate the role of fibrin glue sealant as an adjunct to decrease the rate of pancreatic fistula after pancreaticoduodenectomy. One hundred twenty-five patients were randomized after pancreaticoduodenal resection only if, in the opinion of the surgeon, the pancreaticojejunal anastomosis was at high risk for development of a pancreatic anastomotic leak. After completion of the pancreaticojejunal anastomosis, the patients were randomized to topical application of fibrin glue sealant to the surface of the anastomosis or no such application. The primary postoperative end points in this study were pancreatic fistula, total complications, death, and length of hospital stay. A total of 59 patients were randomized to the fibrin glue arm, whereas 66 patients were randomized to the control arm and did not receive fibrin glue application. The pancreatic fistula rate in the fibrin glue arm of the study was 26% vs. 30% in the control group (p = not significant [NS]). The mean length of postoperative stay for all patients randomized was similar (fibrin glue = 12.2 days, control = 13.6 days) and the mean length of stay for patients in whom pancreatic fistula developed was also not different (fibrin glue = 18.9 days, control = 21.7 days). There were no differences with respect to total complications or specific complications such as postoperative bleeding, infection, or delayed gastric emptying. These data demonstrate that the topical application of fibrin glue sealant to the surface of the pancreatic anastomosis in this patient population undergoing high-risk pancreaticojejunal anastomosis did not reduce the incidence of pancreatic fistula or total complications after pancreaticodudodenectomy. There seems to be no benefit regarding the use of this substance in this setting.

Full Text:

Not Available

Fibrin glue-antibiotic suspension in the prevention of prosthetic graft infection.

Authors: Ney A.L., Kelly P.H., Tsukayama D.T., Bubrick M.P.

Publication Date: 1990

Abstract:

The following study was done to assess whether fibrin glue-antibiotic suspension (FGAS) can prevent infection of a PTFE vascular graft in a contaminated wound. Method: FGAS was made by combining cryoprecipitate with a mixture of bovine thrombin, aminocaproic acid, and tobramycin (5 mg/cc thrombus). Antibiotic activity was documented by in vitro kinetics which revealed initial elutions to be >8,000 mugm/cc and elutions at 4 days to be >2 mcg/cc. Twelve dogs had a 1-cm section of infrarenal aorta replaced with a PTFE graft that had been bathed in a 2-cc solution of E. coli 3 x 10^8 CFU/ml and S. aureus 3 x 10^8 CFU/ml. Both organisms were sensitive to tobramycin and cefonicid. Dogs were divided into three groups of four. Group I had a contaminated PTFE graft placed and no further therapy. Group II had a contaminated PTFE graft placed and sealed with fibrin glue. Group III had a contaminated PTFE graft placed and sealed with FGAS. All three groups received daily IV cefonicid. Results: Group I: Four of four dogs were reoperated on the fourth day for suspected sepsis and all four had pseudoaneurysms (one ruptured). Three of four were culture positive for S. aureus and two of four positive for E. coli. Group II: Four of four died of anastomotic disruption by the third day. Four of four were culture positive for S. aureus and E. coli. Group III: All four dogs survived and were sacrificed on Day 17: all anastomoses were normal. Animal survival was significantly associated with the treatment given ($p = 0.0025$). Three of four tissue cultures of the grafts were weakly positive for S. aureus and one of four for E. coli and Pseudomonas. Serum tobramycin levels were negligible at 12, 24, 72, and 96 hours. Conclusions: The data show that FGAS was associated with a reduction in vascular graft infection and pseudoaneurysm formation after exposure to a standardized bacterial inoculum. Whether complete eradication of all organisms can be achieved with higher doses of tobramycin is as yet undetermined.

Full Text:

Not Available

New technique for pancreaticojejunostomy using a biological adhesive.

Authors: Tashiro S., Murata E., Hiraoka T.

Publication Date: 1987

Abstract:

A new technique of pancreaticojejunostomy using a fibrin glue biological adhesive system (BAS) after pancreaticoduodenectomy is reported. Pancreaticojejunostomy was performed on 112 patients between 1971 and 1985. Forty-two of the patients received BAS application (Group I), but the remaining seventy did not (Group II). To evaluate more precisely the effectiveness of BAS, 22 patients in Group I (Group I-ST) and 26 patients in Group II (Group II-ST) who were operated upon by the same surgeon during the same period were reviewed retrospectively. The selection of patients for the use of BAS was randomized. In Group I-ST, one patient had a minor leak; no major leaks or operative deaths occurred. Two of the twenty-six patients in Group II-ST had minor leaks and one patient had a major leak causing death. This new technique for pancreaticojejunostomy using a biological adhesive system may be useful for preventing anastomotic leaks, especially in a patient with a normal pancreas.

Full Text:

Not Available

Mesh fixation with glue versus suture for chronic pain and recurrence in Lichtenstein inguinal hernioplasty. [Review]

Authors: Sun P, Cheng X, Deng S, Hu Q, Sun Y, Zheng Q

Publication Date: 2017

Abstract:

BACKGROUND: Chronic pain following mesh-based inguinal hernia repair is frequently reported, and has a significant impact on quality of life. Whether mesh fixation with glue can reduce chronic pain without increasing the recurrence rate is still controversial. OBJECTIVES: To determine whether tissue adhesives can reduce postoperative complications, especially chronic pain, with no increase in recurrence rate, compared with sutures for mesh fixation in Lichtenstein hernia repair. SEARCH METHODS: We searched the following electronic databases with no language restrictions: the Cochrane Central Register of Controlled Trials (CENTRAL; issue 4, 2016) in the Cochrane Library (searched 11 May 2016), MEDLINE Ovid (1986 to 11 May 2016), Embase Ovid (1986 to 11 May 2016), Science Citation Index (Web of Science) (1986 to 11 May 2016), CBM (Chinese Biomedical Database), CNKI (China National Knowledge Infrastructure), VIP (a full-text database in China), Wanfang databases. We also checked reference lists of identified papers (included studies and relevant reviews). SELECTION CRITERIA: We included all randomised and quasi-randomised controlled trials comparing glue versus sutures for mesh fixation in Lichtenstein hernia repair. Cluster-RCTs were also eligible. DATA COLLECTION AND ANALYSIS: Two review authors extracted data and assessed the risk of bias independently. Dichotomous outcomes were expressed as odds ratio (OR) with 95% confidence intervals (CI). Continuous outcomes were expressed as mean differences (MD) with 95% CIs. MAIN RESULTS: Twelve trials with a total of 1932 participants were included in this review. The overall postoperative chronic pain in the glue group was reduced by 37% (OR 0.63, 95% CI 0.44 to 0.91; 10 studies, 1418 participants, low-quality evidence) compared with the suture group. However, the results changed when we conducted subgroup analysis with regard to the type of mesh. Subgroup analysis of included studies using lightweight mesh showed the reduction of chronic pain was less profound and insignificant (OR 0.77, 95% CI 0.50 to 1.17). Subgroup analysis of included studies using heavyweight mesh resulted in a significant benefit from the fixation with glue (OR 0.38, 95% CI 0.17 to

0.82).Hernia recurrence was similar between the two groups (OR 1.44, 95% CI 0.63 to 3.28; 12 studies, 1932 participants, low-quality evidence). Fixation with glue was superior to suture regarding duration of the operation (MD -3.13, 95% CI -4.48 to -1.78; 9 studies, 1790 participants, low-quality evidence); haematoma (OR 0.52, 95% CI 0.31 to 0.86; 10 studies, 1384 participants, moderate-quality evidence); and recovery time to daily activities (MD -1.26, 95% CI -1.89 to -0.63; 3 studies, 403 participants, low-quality evidence).We also investigated adverse events. There were no significant differences between the two groups. For superficial wound infection pooled analyses showed OR 1.23, 95% CI 0.37 to 4.11; 7 studies, 763 participants (low-quality evidence); for mesh/deep infection OR 0.67, 95% CI 0.16 to 2.83; 8 studies, 1393 participants (low-quality evidence). Furthermore, we investigated seroma (a postoperative swelling caused by fluid) (OR 0.83, 95% CI 0.51 to 1.33); and persisting numbness (OR 0.81, 95% CI 0.57 to 1.14).Finally, six trials involving 1009 participants reported postoperative length of stay, resulting in non-significant difference between the two groups (MD -0.12, 95% CI: -0.35 to 0.10)Due to the lack of data, it was impossible to draw any distinction between synthetic glue and biological glue.Eight out of 12 trials showed high risk of bias in at least one of the investigated domains. Two studies were quasi-randomised controlled trials and the allocation sequence of one trial was not concealed. Nearly half of the included trials either did not provide adequate information or had high risk of bias regarding blinding processes. The risk of bias for incomplete outcome data of all the included studies varied from low to high risk of bias. Two trials did not report on some important outcomes. One study was funded by the manufacturer producing the fibrin sealant. Therefore, according to the 'Summary of findings' tables, the quality of the evidence (GRADE) for the outcomes is moderate to low. AUTHORS' CONCLUSIONS: Based on the short-term results, glue may reduce postoperative chronic pain and not simultaneously increase the recurrence rate, compared with sutures for mesh fixation in Lichtenstein hernia repair. Glue may therefore be a sensible alternative to suture for mesh fixation in Lichtenstein repair. Larger trials with longer follow-up and high quality are warranted. The difference between synthetic glue and biological glue should also be assessed in the future.

Full Text:

Not Available

The potential effect of biological sealants on colorectal anastomosis healing in experimental research involving severe diabetes. [Review]

Authors: Stergios K, Kontzoglou K, Pergialiotis V, Korou LM, Frountzas M, Lalude O, Nikiteas N, Perrea DN

Publication Date: 2017

Abstract:

Colorectal anastomoses continuous to pose a significant challenge in current surgical practice. Anastomotic leakage remains one of the most frequent and dramatic complications of colorectal surgery, even in centres of high specialisation. Diabetes is a well-established independent factor which results in higher anastomotic leakage rates. Fibrin sealants have been applied in experimental and clinical studies for the prevention of anastomotic dehiscence. However, little is known regarding their impact on diabetic patients. Several fibrin sealants have been proposed as adjunct to standard surgical

techniques to prevent leakage from colonic anastomoses following the reversal of temporary colostomies, approved for general haemostasis. This review summarises current advances in colorectal anastomoses and provides evidence that may strengthen the need for tissue sealants in colorectal anastomoses of diabetic patients. We searched Medline (1966-2016) and Scopus (2004-2016) for current evidence in the field. To date, there is no evidence to support the use of fibrin sealants as an adjunct in diabetic patients who undergo colorectal surgery. Experimental animal models with extreme diabetes could be of significant use in the present field and further research is needed prior to application of fibrin sealants in a clinical setting.

Full Text:

Not Available

A Prospective Randomized Trial of the Efficacy of Fibrin Glue, Triamcinolone Acetonide, and Quilting Sutures in Seroma Prevention after Latissimus Dorsi Breast Reconstruction.

Authors: Hart AM, Duggal C, Pinell-White X, Losken A

Publication Date: 2017

Abstract:

BACKGROUND: Donor-site seroma is the most common complication following latissimus dorsi flap breast reconstruction. Various agents and techniques have attempted to minimize seroma formation. The purpose of this study was to compare the efficacy of different products and quilting sutures at seroma prevention. METHODS: This is a single-center, double-blinded, randomized, controlled trial of a consecutive series of breast cancer patients (n = 96) undergoing latissimus dorsi flap reconstruction performed by a single surgeon. Patients were randomized to receive (1) fibrin glue (Tisseel) (n = 23), (2) triamcinolone acetonide (n = 26), or (3) normal saline (control) (n = 27) sprayed into the donor site. The fourth arm included donor-site quilting sutures (n = 20). Outcomes included seroma, drain output, and days to last drain removal. Drain removal was standardized at less than 30 cc/day. RESULTS: All groups were matched evenly without differences in risk, procedures, or complications. The overall seroma rate was 31.3 percent (n = 30). The quilting group had significantly less drainage for weeks 1 (p = 0.006) and 2 (p = 0.050) postoperatively. Quilting statistically reduced the incidence of seromas to 5.0 percent (n = 1; p = 0.038) compared with other groups (control, 34.5 percent; fibrin, 27.6 percent; and triamcinolone, 37.6 percent). Drains were removed 10 days earlier with quilting (control, 35.5 days; fibrin, 39.5 days; triamcinolone, 37.4 days; and quilting, 25.8 days; p = 0.001). The incidence of all other complications was similar between groups. CONCLUSION: The use of quilting donor sites significantly decreases the incidence of donor-site seromas and leads to earlier drain removal following latissimus dorsi flap reconstruction and maintains a low complication profile. CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, II.

Full Text:

Not Available

Effect of Fibrin Glue on the Incidence of Surgical Complications After Living-Related-Donor Kidney Transplantation: Results of a Randomized Clinical Trial.

Authors: Fuentes-Orozco C, Gonzalez-Mercado S, Sandoval-Sandoval JM, Valdespino-Mejia C, Gonzalez-Gonzalez E, Ramirez-Robles JN, Gomez-Navarro B, Davalos-Delgadillo BE, Marquez-Leano L, Ramirez-Arce A, Andalon-Duenas E, Espinosa-Partida A, Macias-Amezcua MD, Gonzalez-Ojeda A

Publication Date: 2016

Abstract:

BACKGROUND The incidence of surgical complications after kidney transplantation ranges from 10-25%. The purpose of this study was to evaluate if the application of fibrin glue as a preventive agent reduces surgical morbidity after a living-related-donor kidney transplantation. MATERIAL AND METHODS A controlled clinical trial involving 78 recipients randomly assigned to receive fibrin glue and 79 in the control group without the application of fibrin glue. Patients were followed for six months after surgery. RESULTS The average ages were 24.8+/-9.4 and 27.4+/-11.3 years in the control and study groups, respectively (p=0.11). Individual morbidities, such as urologic, lymphatic, vascular, and wound complications, were not statistically different between groups; however, the total number of surgical complications observed were in five patients in the study group and 16 patients in the control group. This difference was statistically significant (p<0.01, relative risk 0.44, 95% CI 0.20-0.97). There was no mortality or adverse reaction to fibrin glue. One kidney graft was lost because of uncontrollable bleeding secondary to tearing of the renal capsule. The incidence of early medical complications was similar between groups. CONCLUSIONS Applications of the biological adhesive reduced the incidence of surgical complications.

Full Text:

Not Available

Experiences with TachoSil in microneurosurgery.

Authors: Kivelev J, Gohre F, Niemela M, Hernesniemi J

Publication Date: 2015

Abstract:

BACKGROUND: We analyze our experience of using TachoSil (Takeda Austria GmbH: Linz, Austria) in microneurosurgical procedures as a hemostat and also as a sealant to patch dural defects. MATERIALS AND METHODS: Beginning on January 1, 2012, we prospectively analyzed 100

consecutive surgeries where TachoSil was used. The patient group included 58 women (58 %) and 42 men (42 %); the mean age was 52 years (range, 3-85 years). Indications for surgery included removal of the tumor (53 cases; 53 %), clipping of the cerebral arterial aneurysm (31 cases; 31 %), and treatment of other pathologies, including AVM (four cases; 4 %), cavernomas (four cases; 4 %), spinal tumor, and traumatic subdural hematoma. Patients received postoperative care according to local neurosurgical department protocol, including a postoperative CT scan after each craniotomy. Primary assessment of the wound took place during the hospital stay as well as at discharge or transfer to a rehabilitation unit. Mean follow-up time was 4 months (range, 1-12 months). RESULTS: None of the patients developed postoperative hematoma after craniotomy or spinal procedure. At primary assessment during hospital stay, 93 patients (93 %) had had no wound-related problems over the normal course of healing. No case registered any liquor leak from the wound, and none of the patients showed any signs of allergic response related to TachoSil usage. At the last follow-up, 96 patients (96 %) experienced uneventful wound healing, and in four patients (4 %), superficial wound infection was successfully treated with oral antibiotics. CONCLUSIONS: Our results indicate that TachoSil can serve in neurosurgical practice at no additional risks. TachoSil proved to be an effective hemostat, sealant, and adhesive in either cranial or spinal procedures.

Full Text:

Not Available

A systematic examination of the effect of tissue glues on rhytidectomy complications. [Review]

Authors: Killion EA, Hyman CH, Hatef DA, Hollier LH Jr, Reisman NR

Publication Date: 2015

Abstract:

BACKGROUND: Fibrin glue has widespread use in multiple fields of surgery. There have been numerous studies on the use of fibrin glue in facelifts, with no consensus regarding differences in outcomes. OBJECTIVES: This study compared the risk of hematoma, seroma, and the 24-hour drainage volume in all published prospective controlled trials. METHODS: A MEDLINE search of English-language articles on fibrin glue and rhytidectomy published up to July 2013 yielded 49 citations. After screening, we examined 7 relevant controlled trials. The DerSimonian and Laird random-effects model was used to perform the meta-analysis. RESULTS: Seven controlled trials measuring the outcomes of fibrin glue in facelifts were used to estimate the pooled relative risk of complications and confidence intervals. Hematoma formation was four times less likely with the use of fibrin glue (relative risk 0.25, P = .002). There was no significant reduction in seroma formation (relative risk 0.56, P = .19). There was not enough data to properly measure 24-hour drainage and ecchymoses. CONCLUSIONS: This analysis suggests that fibrin glue reduces the rates of hematoma formation, but does not significantly reduce the rates of seroma development. LEVEL OF EVIDENCE: 3 Therapeutic.

Full Text:

Not Available

What is the best method for minimizing the risk of hematoma formation after rhytidectomy?. [Review]

Authors: Kleinberger AJ, Spiegel JH

Publication Date: 2015

Abstract:

Not Available

Full Text:

Not Available

[Pterygium surgery and fibrin glue: avoiding dehiscence]. [Spanish]

Authors: Perez-Silguero D, Diaz-Ginory A, Santana-Rodriguez C, Perez-Silguero MA

Publication Date: 2014

Abstract:

OBJECTIVE/METHOD: The purpose of the study is to evaluate those cases of pterygium surgery with fibrin sealant that produced dehiscence of the graft, and then apply and evaluate the efficacy of a different surgical technique in an attempt eliminate this complication in previously identified cases of high risk. The first phase is a retrospective study of 42 cases of pterygium surgery. In the second phase, the variation in the surgical technique was prospectively used in 14 cases of pterygium surgery. RESULTS/CONCLUSIONS: Cases of recurrent pterygium, broad pterygium, and complicated surgery were identified as the groups with a risk of suffering dehiscence of the graft. With the variant applied surgery no dehiscence occurred when using the variation in surgical technique, with no added complications.

Full Text:

Not Available

Randomized double-blinded prospective trial of fibrin sealant spray versus mechanical stapling in

laparoscopic total extraperitoneal hernioplasty.[Erratum appears in Ann Surg. 2014 Aug;260(2):408 Note: Melissa, Chan Shannon [corrected to Chan, Melissa Shannon]; Bun, Teoh Anthony Yuen [corrected to Teoh, Anthony Yuen Bun]; Wing, Chan Kin [corrected to Chan, Kin Wing]; Chung, Tang Yiu [corrected to Tang, Yiu Chung]; Tat, Leong Heng [corrected to Leong, Heng Tat]]

Authors: Chan MS, Teoh AY, Chan KW, Tang YC, Ng EK, Leong HT

Publication Date: 2014

Abstract:

OBJECTIVE: The aim of the current study was to compare the clinical outcomes of mesh fixation with fibrin sealant (FS) spray or mechanical stapling (MS) in laparoscopic total extraperitoneal hernioplasty (TEP). BACKGROUND: The most appropriate method of mesh fixation is uncertain. METHODS: Between June 2007 and June 2011, consecutive patients with primary reducible unilateral inguinal hernia who underwent day-case laparoscopic TEP were recruited. Outcome parameters included the incidence of acute and chronic pain, recurrence rates, morbidity rates, analgesic requirements, quality-of-life (QOL) scores, and direct cost. RESULTS: During the study period, 130 patients were included in the study. Patients in the MS group had significantly worse pain scores on the day after operation ($P = 0.006$). Analgesic requirements were similar between the 2 groups ($P = 0.558$). At 6 months, no significant differences in the incidence of chronic pain were observed (at rest, after coughing or cycling). The incidence of seroma formation was similar between the 2 groups ($P = 0.64$), and no recurrences were observed at 1 year. No differences in the QOL scores were detected. The direct cost of the entire hospitalization in the FS group was less expensive ($P < 0.001$). CONCLUSIONS: FS and MS are both effective methods of providing mesh fixation. FS was associated with reduced acute pain but not chronic pain. The rates of seroma formation were similar. However, the use of FS for mesh fixation was less expensive. [corrected].

Full Text:

Not Available

Fibrin sealant in general surgery. Personal experience and literary review. [Review]

Authors: Gubitosi A, Ruggiero R, Docimo G, Esposito A

Publication Date: 2014

Abstract:

In consideration of the use of fibrin glue in a general surgery department, authors analyze their last two years series. Operations on liver and biliary ducts, bowel and proctologic surgery, thyroid and breast surgery, abdominal wall hernias, fistulas and difficult wounds are considered with a literary review on fibrin sealant.

Full Text:

Not Available

Mesh fixation with fibrin sealant during endoscopic totally extraperitoneal inguinal hernia approach: a review of 640 repairs.

Authors: Berney CR, Yeo AE

Publication Date: 2013

Abstract:

PURPOSE: Endoscopic repair of inguinal hernia can decrease the incidence of chronic groin pain. Staple mesh fixation is the surgical technique preferentially used but may also cause residual pain. Although a substantial number of specialists advocate no mesh fixations, concerns are that this could lead to an increase in recurrence rates. This study aimed to assess the safety and the effectiveness of fibrin sealant, as an alternative technique to staple mesh fixation after totally extraperitoneal (TEP) inguinal hernia repair. METHODS: A total of 472 patients underwent elective TEP inguinal hernia repair between February 2005 and July 2011. Mesh fixation was achieved using fibrin sealant. Patients were reviewed postoperatively at Week 2, Week 6, and Month 6. Patient satisfaction was assessed in a subgroup of 116 patients using a comprehensive scoring system designed for hernia repairs, and pain was assessed using a standard Visual Analog pain Scale. RESULTS: No conversion to open surgery was observed. There were two cases of major morbidities and no mortality. Three months after surgery, only three patients (0.6 %) experienced chronic groin or testicular discomfort. At Week 6, 98.9 % of the patients were either satisfied or very satisfied with their outcome, and 96.8 % denied any residual pain. Finally, only six hernia recurrences (0.9 %) were reported, of which five occurred during the first months of the study. CONCLUSIONS: Fibrin sealant is safe and reliable for mesh fixation of inguinal hernia during TEP repair with a very high satisfaction index and limited risk of developing chronic pain.

Full Text:

Not Available

Percutaneous stone surgery using a tubeless technique with fibrin sealant: report of our first 107 cases.

Authors: Gudeman SR, Stroup SP, Durbin JM, Patino G, L'Esperance JO, Auge BK

Publication Date: 2012

Abstract:

UNLABELLED: Study Type--Therapy (case series) Level of Evidence 4. What's known on the subject? and What does the study add? Small case series support the safety and efficacy of tubeless PCNL with fibrin sealant. However, there is a paucity of data from larger case series supporting this approach. To our knowledge, this is among the largest tubeless PCNL series. We found the use of fibrin sealant for tubeless PCNL was associated with excellent stone-free rates (approaching 90%), short hospitalisation, and low complication rates. Tubeless PCNL with nephrostomy tract fibrin sealant appears to be viable option for appropriately select patients. OBJECTIVE: * To report on our first 107 cases of tubeless percutaneous nephrolithotomy (PCNL) using fibrin sealant as a haemostatic agent within the access tract. PCNL is the preferred treatment for patients with large renal stones, and the tubeless technique with the use of fibrin sealant has recently gained popularity. PATIENTS AND METHODS: * We performed a retrospective review of single-access, PCNL cases performed without a nephrostomy tube from January 2002 to July 2008. * Nephrostomy tracts were sealed at the conclusion of each procedure with fibrin-containing haemostatic agents. * We evaluated demographic variables, tracked complications, and compared pre- and postoperative haemoglobin, haematocrit and creatinine levels. * On postoperative day 1 computed tomography was used to determine stone-free rates. * Student's t-test calculations were used to determine statistical significance at P <= 0.05. RESULTS: * In all, 59 men and 48 women with a mean age of 43 years were included in the analysis of 107 cases. The mean stone size was 2.9 cm(2) and the average hospital stay was 1.07 days. * Pre- and postoperative changes in serum haemoglobin and serum creatinine were not statistically different. Postoperative haematocrit declined by a mean of 4.5% (P <= 0.05), but no patients required a transfusion. * Stone-free rates were 72% overall, and 90% when excluding patients with residual fragments of <4 mm. * Complications included seven asymptomatic subcapsular haematomas, one pseudoaneurysm requiring selective embolization, one urine leak, and five return visits to the emergency room for pain. CONCLUSIONS: * The use of fibrin sealant in this large tubeless PCNL series was associated with favourable stone-free rates, short hospital stays, and low complication rates with no significant bleeding. * Tubeless PCNL with nephrostomy tract fibrin sealant appears to be a viable option for appropriately selected patients, but future randomised trials are warranted.

Full Text:

Not Available

A novel approach to closure of perineal wounds during abdominoperineal resection: use of fibrin sealant.

Authors: Vaid S, Nicholson T

Publication Date: 2012

Abstract:

Abdominoperineal resection is associated with significant morbidity. The perineal wound poses a unique risk and complications are common, including skin breakdown, abscess, sinus tracts, perineal herniation, and evisceration. A 2-component fibrin sealant made from pooled human plasma has been proven to achieve hemostasis and tissue sealing. We report a case series of 5 consecutive patients in whom we used this fibrin sealant during perineal wound closure. Of our patients, 2 patients (40%) were diabetic and 4 patients (80%) received preoperative radiotherapy. The median body mass index was 32 (calculated as weight in kilograms divided by height in meters squared). The patients were at increased risk of perineal wound dehiscence and infection. Median follow-up was 6 months, and no patients had perineal wound complications. A fibrin sealant could be used as an alternative to more invasive procedures, such as flap reconstruction, in patients at high risk of perineal wound dehiscence.

Full Text:

Not Available

New approach in vaginal prolapse repair: mini-invasive surgery associated with application of platelet-rich fibrin.

Authors: Gorlero F, Glorio M, Lorenzi P, Bruno-Franco M, Mazzei C

Publication Date: 2012

Abstract:

INTRODUCTION AND HYPOTHESIS: Platelet-rich fibrin (PRF) matrix is an autologous leukocyte and PRF biomaterial. PRF is a fibrin matrix polymerized in a tetramolecular structure with the incorporation of platelets, leukocytes, cytokines, and circulating stem cells. The three-dimensional structure of PRF is optimal for migration of endothelial cells and fibroblasts. It permits rapid angiogenesis and easier remodeling of fibrin in a more resistant connective matrix. In vaginal surgery, PRF may act as a graft material with better healing and better functional outcome. METHODS: We performed a prospective observational study on ten consecutive women requiring surgery for prolapse recurrence (stage II or higher). These women had high risks for recurrence, erosion with graft materials, and intraoperative and postoperative complications with traditional pelvic reconstructive surgical procedures. ICS score and P-QoL Questionnaire results were assessed preoperatively and postoperatively. Surgery consisted of anterior, posterior, or apical repair plus PRF. Follow-up was performed at 1, 6, 12, 18, and 24 months. RESULTS: Anatomically, the success rate was 80%. Prolapse symptoms improved by 100%. Sexual activity increased by 20% without dyspareunia. The surgical time was satisfactory (mean, 38.5 min). There were no intraoperative or postoperative complications. CONCLUSIONS: The use of PRF for site-specific prolapse repair is associated with a good functional outcome because of the healing and mechanical properties of PRF.

Full Text:

Not Available

Application of fibrin glue sealant after hepatectomy does not seem justified: results of a randomized study in 300 patients.

Authors: Figueras J, Llado L, Miro M, Ramos E, Torras J, Fabregat J, Serrano T

Publication Date: 2007

Abstract:

OBJECTIVE: To evaluate the efficacy, amount of hemorrhage, biliary leakage, complications, and postoperative evolution after fibrin glue sealant application in patients undergoing liver resection. SUMMARY BACKGROUND DATA: Fibrin sealants have become popular as a means of improving perioperative hemostasis and reducing biliary leakage after liver surgery. However, trials regarding its use in liver surgery remain limited and of poor methodologic quality. PATIENTS AND METHODS: A total of 300 patients undergoing hepatic resection were randomly assigned to fibrin glue application or control groups. Characteristics and debit of drainage and postoperative complications were evaluated. The amount of blood loss, measurements of hematologic parameters liver test, and postoperative evolution (particularly involving biliary fistula and morbidity) was also recorded. RESULTS: Postoperatively, no differences were observed in the amount of transfusion (0.15 +/- 0.66 vs. 0.17 +/- 0.63 PRCU; P = 0.7234) or in the patients that required transfusion (18% vs. 12%; P = 0.2), respectively, for the fibrin glue or control group. There were no differences in overall drainage volumes (1180 +/- 2528 vs. 960 +/- 1253 mL) or in days of postoperative drainage (7.9 +/- 5 vs. 7.1 +/- 4.7). Incidence of biliary fistula was similar in the fibrin glue and control groups, (10% vs. 11%). There were no differences regarding postoperative morbidity between groups (23% vs. 23%; P = 1). CONCLUSIONS: Application of fibrin sealant in the raw surface of the liver does not seem justified. Blood loss, transfusion, incidence of biliary fistula, and outcome are comparable to patients without fibrin glue. Therefore, discontinuation of routine use of fibrin sealant would result in significant cost saving.

Full Text:

Not Available

Tisseel versus tack staples as mesh fixation in totally extraperitoneal laparoscopic repair of groin hernias: a retrospective analysis.

Authors: Topart P, Vandenbroucke F, Lozac'h P

Publication Date: 2005

Abstract:

BACKGROUND: The laparoscopic repair of groin hernias generally involves mesh fixation to avoid displacement and recurrence. Fixation usually uses staples that can lead to nerve injury and chronic postoperative pain. Laparoscopic repairs are associated with a risk of chronic pain of up to 22.5%. The use of fibrin glue (Tisseel) may represent an alternative method of mesh fixation preventing the risk of nerve injury. METHODS: Sixty-six patients had groin hernia repair using a totally extraperitoneal (TEP) laparoscopic procedure. Mesh fixation was achieved using 2 ml of fibrin glue. Comparison was made with an earlier series of 102 patients operated on according to the same procedure in which mesh fixation used tack staples. Complications, length of stay, recurrence, and postoperative chronic pain were assessed. RESULTS: No difference was found between the two series, except there was a significantly higher rate of postoperative chronic pain in the staples series (14.7 vs 4.5%, p = 0.037) and there was one recurrence (1.5%) in the fibrin glue group of patients. CONCLUSIONS: Fibrin glue achieved an adequate mesh fixation with a lower incidence of chronic postoperative pain. Although a prospective randomized study is needed, Tisseel appears to be an alternative to staples for mesh fixation and may help reduce the postoperative pain problems after hernia repair.

Full Text:

Not Available

[Endoscopic treatment of intestinal anastomotic leakage in low anterior resection of the rectum by using fibrin adhesive. Our experience]. [Italian]

Authors: Testi W, Vernillo R, Spagnulo M, Genovese A, Picchianti D, Stefanoni M, Terreni C, Lorenzi M, De Martino A, Mancini S

Publication Date: 2002

Abstract:

BACKGROUND: Personal experience about treatment of anastomotic leakage in low anterior resection of the rectum by using human fibrin adhesive "Tissucol" is reported. METHODS: Eight cases of anastomotic leakage treated with using human fibrin adhesive "Tissucol", are analyzed in a retrospective study. Patients had three/six months-one year follow up. Treatment with human fibrin adhesive "Tissucol" was performed in our Endoscopic ambulatory. Six cases had either an immediate resolution or an ambulatorial follow-up; in 2 cases only, general complications forced to a prolonged hospital stay. The study concerns 58 patients subjected to low anterior resection of the rectum and endoscopic treatment of 8/58 patients with anastomotic leakage. Fistulas were sealed with human fibrin adhesive "Tissucol" by using flexible endoscope. Anastomotic leakage identification leakage was made and low anterior resection of the rectum and sealing with human fibrin adhesive "Tissucol" were performed. RESULTS: Complete sealing of fistula and rectum patent. CONCLUSIONS: The excellent results obtained with this non invasive and fast treatment, easily practicable even in ambulatorial regimen, lead the authors to consider it effective and as first-choice treatment of this dangerous

complication. The cost/benefit ratio is favorable if compared with the long hospital stay required for other treatments, which also present loaded high morbidity and mortality.

Full Text:

Not Available

Fibrin glue sealing for the prevention of pancreatic fistulas following distal pancreatectomy.

Authors: Suzuki Y, Kuroda Y, Morita A, Fujino Y, Tanioka Y, Kawamura T, Saitoh Y

Publication Date: 1995

Abstract:

OBJECTIVE: To evaluate the use of fibrin glue sealing of the pancreatic stump for the prevention of postoperative pancreatic fistulas. DESIGN: A prospective, randomized clinical trial. PATIENTS AND METHODS: Fibrin glue is a biologic adhesive consisting of highly concentrated human fibrinogen, thrombin, and factor VIII. Twenty-six of 56 patients who underwent distal pancreatectomy for gastric cancer or pancreatic disease were randomly assigned to the fibrin glue group. Fibrin glue was applied to the suture line of the pancreatic stump with the ligated main pancreatic duct. Pancreatic fistula was defined as a pancreatic fluid discharge for over 7 post-operative days diagnosed by local findings, with amylase concentration in the discharge fluid more than three times the serum amylase concentration, a level low enough that even a small pancreatic leakage could be diagnosed. RESULTS: The overall incidence of pancreatic fistula was 28.6%. Postoperative pancreatic fistulas occurred in four patients (15.4%) in the fibrin glue group and 12 (40.0%) in the control group (P = .04). The lower pancreatic fistula rate was seen in the fibrin glue group also when analyzing patients with gastric cancer or pancreatic disease only, although there was no statistically significant difference. CONCLUSIONS: Intraoperative use of fibrin glue following distal pancreatectomy could prevent pancreatic fistula formation. This method was feasible, safe, and reliable and will complement other prophylactic methods.

Full Text:

Not Available

[Comparison of different types of ovarian wound closure in rats. Role of biological glue]. [French]

Authors: Bruel D, Gadonneix P, Tranbaloc P, Villet R

Publication Date: 1993

Abstract:

Three techniques for closing the ovary have been compared. The test was carried out on 30 rats' ovaries. After the ovary had been cut with scissors it was closed with rapid acting Tissucol (a biological glue) or closed with interrupted stitches of 10/0 Vicryl, or left to close by itself. Sixty days later the ovaries were looked at macroscopically and histologically. The macroscopic score was established according to the presence of adhesions, the size of the ovary, the presence of cysts; and the histological score was carried out according to the presence of granulomatous macrophage lesions, the degree of fibrosis and the existence of germ cell cysts. The results were identifically the same as far as these five different criteria were concerned. All the same, Tissucol brought about less fibrosis and less atrophy of the ovary. Tissucol, therefore, is a good alternative for suturing the ovary as compared with stitching or no formal closure after the removal of ovarian cysts, particularly laparoscopically.

Full Text:

Not Available

Fibrin glue vasal anastomosis compared to conventional sutured vasovasostomy in the rat.

Authors: Silverstein JI, Mellinger BC

Publication Date: 1991

Abstract:

Vasectomy reversal has become a frequently performed surgical procedure with best results obtained with the use of the operating microscope and microsurgical technique. The present study was undertaken to evaluate the use of fibrin glue ("Tisseel", Immuno U.S., Inc.) for vasovasostomy and to compare this technique to conventional sutured vasovasostomy. Utilizing 60 male Sprague Dawley rats, a conventional two layered sutured anastomosis of vasovasostomy (30 rats) was compared to a fibrin glue technique of vasal anastomosis (30 rats). The fibrin glue technique was performed with two transmural sutures, was unstented, and utilized the biological glue to seal the anastomosis. The contralateral vas of each animal underwent vasectomy and reapproximation of unligated ends so that the rate of spontaneous recanalization could be accessed. Rats were sacrificed at 24 hours, one week, four weeks, and three months postvasovasostomy. The vasal specimens were evaluated for gross patency, presence and size of sperm granuloma, mean flow rates at varying infusion pressures, tensile strength measurements and histologic studies. Combining the one and three month groups, a similar patency rate was obtained by either technique; 83% (n = 18) for the sutured group, and 90% (n = 21) for the fibrin glue group. The rate of spontaneous recanalization of the contralateral vasa in the one and three month animals was 8% (n = 38). The mean flow rates obtained at high and low infusion pressures were not statistically different for the two techniques. The tensile strength of the glue anastomosis averaged 78% of the tensile strength achieved by the conventional sutured technique. The incidence of sperm granuloma after vasovasostomy was 28% for the fibrin glue group and 61% for the sutured group. Additionally, 67% of granulomas were small (less than 3 mm.) in the glue group, compared to only 36% in the sutured group. Histology revealed similar morphological changes in the area of anastomosis with either technique. Operative time for sutured vasovasostomy averaged 24 minutes, compared to an average of 11 minutes for the glue assisted vasovasostomy. The use of fibrin glue allowed the performance of a sperm tight patent anastomosis that had the advantages of reduced incidence of sperm granuloma formation, reduced operative time, and less microsurgical skill required to perform the anastomosis.

Full Text:

Not Available

A Dual-Institution Randomized Controlled Trial of Remnant Closure after Distal Pancreatectomy: Does the Addition of a Falciform Patch and Fibrin Glue Improve Outcomes?.

Authors: Carter T.I., Fong Z.V., Hyslop T., Lavu H., Tan W.P., Hardacre J., Sauter P.K., Kennedy E.P., Yeo C.J., Rosato E.L.

Publication Date: 2013

Abstract:

Objective: The objective of the study was to assess the efficacy of two pancreatic remnant closure techniques following distal pancreatectomy: (1) stapled or sutured closure versus (2) stapled or sutured closure plus falciform patch and fibrin glue reinforcement in the setting of a prospective randomized trial, with the primary endpoint being pancreatic fistula. Summary and Background Data: Pancreatic stump leak following left-sided pancreatic resection (distal pancreatectomy) remains common. Despite multiple and varied techniques for closure, the reported leak rate varies up to 30 %. A retrospective analysis by Iannitti et al. (J Am Coll Surg 203(6):857-864, 2006) detected a decreased leak rate in patients receiving a traditional closure buttressed with an autologous falciform ligament patch and fibrin glue. Methods: Between April 2008 and October 2011, all willing patients scheduled to undergo distal pancreatectomy at the authors' institutions were consented and enrolled at the preoperative office visit. Patients were intraoperatively stratified as having hard or soft glands and randomized to one of two groups: (1) closure utilizing stapling or suturing (SS) versus (2) stapled or sutured plus falciform ligament patch and fibrin glue (FF). The trial design and power analysis (alpha = 0. 05, beta = 0. 2, power 80 %, chi-square test) hypothesized that the FF intervention would reduce the primary endpoint (pancreatic fistula) from 30 % to 15 % and targeted an accrual goal of 190 patients. Secondary endpoints included length of postoperative hospital stay, 30-day mortality, hospital readmission, and ISGPF fistula grade (A, B, and C). Results: The trial accrued 109 patients, 55 in the SS group and 54 in the FF group. Enrollment was closed prior to the target accrual, following an interim analysis and futility calculation. Due to insufficient enrollment, patients stratified as having a hard gland were excluded (n = 8) from analysis, leaving 101 patients in the soft stratum. The overall pancreatic leak rate was 19. 8 % (20 patients) for patients with soft glands. Patients randomized to the FF group had a leak rate of 20 %, as compared with 19. 6 % in the SS group (p = 1. 000). Fistula grades in both groups were identical: 1A, 8B, and 1C in the FF group as compared to 1A, 8B, and 1C in the SS group. Complication rates were comparable between the two groups. The median length of postoperative hospital stay was 5 days in both groups. There was a trend towards a higher 30-day readmission rate in the FF group (28 % vs. 17. 6 %, p = 0. 243). Conclusion: The addition of a falciform ligament patch and fibrin glue to standard stapled or sutured remnant closure did not reduce the rate or severity of pancreatic fistula in patients undergoing distal pancreatectomy (ClinicalTrials. gov NCT00889213).

Full Text:

Not Available

Fibrin glue reduces the duration of lymphatic drainage after lumpectomy and level II or III axillary lymph node dissection for breast cancer: a prospective randomized trial.

Authors: Ko E., Han W., Cho J., Lee J.W., Kang S.Y., Jung S.Y., Kim E.K., Hwang K.T., Noh D.Y.

Publication Date: 2009

Abstract:

This randomized prospective study investigated the effect of fibrin glue use on drainage duration and overall drain output after lumpectomy and axillary dissection in breast cancer patients. A total of 100 patients undergoing breast lumpectomy and axillary dissection were randomized to a fibrin glue group (N=50; glue sprayed onto the axillary dissection site) or a control group (N=50). Outcome measures were drainage duration, overall drain output, and incidence of seroma. Overall, the fibrin glue and control groups were similar in terms of drainage duration, overall drain output, and incidence of seroma. However, subgroup analysis showed that fibrin glue use resulted in a shorter drainage duration (3.5 vs. 4.7 days; p=0.0006) and overall drain output (196 vs. 278 mL; p=0.0255) in patients undergoing level II or III axillary dissection. Fibrin glue use reduced drainage duration and overall drain output in breast cancer patients undergoing a lumpectomy and level II or III axillary dissection.

Full Text:

Not Available

Reducing seroma formation with fibrin glue in an animal mastectomy model.

Authors: Eroglu E., Oral S., Unal E., Kalayci M., Oksuz O., Tilmaz M.

Publication Date: 1996

Abstract:

Mastectomy is a frequently performed surgical procedure which has some important complications that may prolong hospital stay. Seroma formation after mastectomies and axillary dissection has an incidence of 5.8-53%. A new technique for preventing seroma formation was studied in an animal mastectomy model. Radical mastectomy was performed in guinea pigs. A control group of 20 animals had no further procedure post-mastectomy other than drying the wound with sterile gauze. In the other group fibrin glue was topically applied to prevent seroma formation to the operative field. Ten days after

the operation, necropsy was performed and fluid collections were drained with an 18-gauge needle. The results were statistically analysed with a Two-sample rank-sum test. A significant difference existed between Groups I and II ($P < 0.00005$). It is concluded that fibrin glue can be used to prevent seroma formation after mastectomies.

Full Text:

Not Available

Contribution of fibrin glue to the reinforcement of oesophageal anastomosis. [French]

Authors: Fekete F., Gayet B., Panis Y.

Publication Date: 1992

Abstract:

Not Available

Full Text:

Not Available

Radical prostatectomy and biologic glue. [French]

Authors: Lobel B., Ordonez O., Olivo J.F., Cipolla B., Milon D., Leveque J.M., Guille F.

Publication Date: 1991

Abstract:

Fibrin glue (reconstituted fibrin glue-Tissu-col-Immuno-France) was used in 24 patients following radical prostatectomy with ilio-obturator lymphadenectomy (Group II) to improve haemostasis of the operative field, to decrease or eliminate lymphatic oozing and to promote healing of the urethrovesical anastomosis. The results in terms of duration of drainage, quantity of fluid evacuated by these drains, operative complications and length of hospital stay were compared to those obtained in 24 clinically identical patients operated previously without the use of fibrin glue (Group I). Although fibrin glue is easy to use, ensures a particularly dry operative field at the end of the operation and does not induce any infectious complications (abscess, hepatitis), it increases the cost of the operation (5 ml vial = 2,500 FF) and the use of this product does not reduce the drainage time (Group I: 7 +/- 4.6 days; Group II: 8.5 +/- 5.4 days) the volume of blood or lymphatic discharge (Group I: 500 +/- 570 ml; Group II: 660 +/- 825 ml) or the length of hospital stay (Group I: 16.5 +/- 4.8 days; Group II: 17.4 +/- 5.5 days). These results argue against the routine use of fibrin glue in radical prostatectomy.

Full Text:

Not Available

Drainless Parotidectomies versus Conventional Parotidectomies: Randomised Control Study on Efficacy and Safety.

Authors: Chua DY, Goh CH

Publication Date: 2016

Abstract:

Not Available

Full Text:

Not Available

A randomized phase III trial of VH fibrin sealant to reduce lymphedema after inguinal lymph node dissection: a Gynecologic Oncology Group study.

Authors: Carlson JW, Kauderer J, Walker JL, Gold MA, O'Malley D, Tuller E, Clarke-Pearson DL, Gynecologic Oncology Group

Publication Date: 2008

Abstract:

OBJECTIVES: To evaluate VH fibrin sealant's influence on lower extremity lymphedema after inguinal lymphadenectomy in vulvar cancer patients. METHODS: Patients undergoing an inguinal lymphadenectomy during the management of vulvar malignancy were randomized to receive sutured closure (SC) vs VH fibrin sealant sprayed into the groin followed by sutured closure (FS). Leg measurements were taken preoperatively and during postoperative encounters when surgical outcomes were assessed. Grade 2 or 3 lymphedema was defined as circumferential measurement increases of 3-5 cm and >5 cm, respectively. RESULTS: 150 patients were enrolled. 137 patients were evaluable for lymphedema analysis with 67 and 70 patients in the SC arm and FS arm, respectively. The incidence of grade 2 and 3 lymphedema was 67%(45/67) in the SC arm, and 60% (42/70) FS arm (p=0.4779). The incidence of lymphedema was strongly associated with inguinal infection (p=0.0165). Lymphedema was not statistically increased in those who received adjuvant radiation. 139 patients remained evaluable for a descriptive analysis of their surgical complications. The overall incidence of complications was 61%(43/70) and 59% (41/69) for SC and FS arms, respectively. There was no statistically significant difference in duration of drains, drain output or incidence of inguinal infections,

wound breakdowns or seromas. There was an increased incidence of vulvar infections in the FS arm (23/69) vs (10/70) (p=0.0098). The utilization of a Blake drain was associated with an increase in vulvar (p=0.0157) and inguinal wound breakdown (p=0.0456). CONCLUSION: VH fibrin sealant in inguinal lymphadenectomies does not reduce leg lymphedema and may increase the risk for complications in the vulvar wound.

Full Text:

Not Available

The application of fibrin glue after axillary lymphadenectomy in the surgical treatment of human breast cancer.

Authors: Medl M, Mayerhofer K, Peters-Engl C, Mahrhofer P, Huber S, Buxbaum P, Sevelda P, Leodolter S

Publication Date: 1995

Abstract:

Experimental studies point out that a reduction of lymph flow can be obtained by the local application of fibrin glue following axillary lymphadenectomy in the surgical treatment of breast cancer. In a prospective study the influence of human fibrin glue on postoperative axillary lymph secretion and the period of drainage of the wound cavity were evaluated. In 40 patients, 5 ml of fibrin glue (Tissucol) was applied to the wound cavity by the use of a spray applicator (Tissumat) immediately after axillary dissection of the lymph nodes. For drainage of the wound area Redon suction-drains were used. The daily amount of postoperative lymph secretion was measured and drains were removed at a lymph secretion of less than 20 ml. 40 patients who underwent surgery and axillary lymphadenectomy without subsequent application of fibrin glue sourced as control group. No significant difference concerning the total amount of lymph secretion, the mean period of drainage or the incidence of lymphatic cysts was observed. In our study, the expected occlusion of the wound cavity by the application of fibrin glue after axillary lymphadenectomy did not lead to any advantage when compared with the control group.

Full Text:

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[Occlusion of the duct with a fibrin glue and preservation of the pylorus after resection of the duodenum and head of the pancreas for periampullary carcinoma]. [Italian]

Authors: Cavallini M, Tallerini A, Stipa F

Publication Date: 1991

Abstract:

Dehiscence of pancreaticojejunostomy represent the main technical postoperative complication after duodenocephalopancreasectomy for periampullary carcinoma. The incidence of this complication is particularly high in cases of narrow duct and a tender pancreatic gland. In this case the authors suggest a technique of occlusion of the residual pancreatic stump using a fibrin sealant. This approach was utilized in 6 consecutive patients affected by resectable periampullary carcinoma. No postoperative mortality was observed. Pancreatic fistula developed in 5 cases and all of them resolved spontaneously in 1-4 months. The sixth patient underwent, at 3 months p-o, a CT-guided percutaneous aspiration of an intraabdominal fluid collection and with no further complications. 3 patients died at 3, 9 and 11 months because of liver metastases. Currently 3 patients are alive and apparently disease free at 25, 7 and 5 months. Pancreatic endocrine function was assessed in 5 patients at 3 months p-o. Blood glucose and insulin, glucagon and C-peptide plasma levels, all fasting and 1 our after a standard meal, revealed a normal glucose metabolism. The authors conclude that, since fibrin sealant avoids the pancreatic fibrosis which could be induced by non-absorbable polymers and the benign evolution of this type of pancreatic fistula, this method for handling the exocrine secretion is a safe and satisfactory approach which is particularly indicated in case of a pancreatic stump at risk for intestinal anastomoses.

Full Text:

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Reduction in surgical site infection in patients treated with microbial sealant prior to coronary artery bypass graft surgery: a case-control study.

Authors: Dohmen PM, Gabbieri D, Weymann A, Linneweber J, Konertz W

Publication Date: 2009

Abstract:

Surgical site infection (SSI) is a serious complication after cardiac surgery. This case-control study investigated the effect of a cyanoacrylate-based microbial skin sealant (IntéguSeal) applied preoperatively on the SSI rate in patients undergoing coronary artery bypass graft (CABG) surgery. Of 676 patients who underwent CABG surgery with or without concomitant procedure(s) between March and November 2007, 545 received standard preoperative care and 131 also received pretreatment with the microbial sealant. Of these, 90 cases pretreated with microbial sealant and 90 controls were matched using established preoperative and intraoperative risk factors for SSI. Preoperative risk scores for SSI were 9.9+/-4.3 and 9.7+/-4.0 (P=0.747) for the microbial sealant and the control group, respectively, and combined preoperative-intraoperative risk scores were 9.7+/-4.1 and 8.7+/-3.5 (P=0.080), respectively. Carotid artery disease (P=0.019), congestive heart failure (P=0.019), acute myocardial infarction (P=0.001) and emergency surgery (P=0.026) were significantly more common in the microbial sealant group. Follow-up was 100% for both groups. Superficial or deep sternal infection

30 days post surgery developed in seven patients (7.8%) in the control group compared with one patient (1.1%) in the microbial sealant group (odds ratio 7.5). In summary, the inclusion of microbial sealant in preoperative patient preparation seems to reduce the incidence of SSI following CABG surgery; further larger studies are needed before firm conclusions can be drawn.

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