

Hemostasis and healing of superficial splenic injuries using Nd:YAG laser and nonsuture techniques: Preliminary report.

Authors: Vanterpool C.C., Alrashedy F.H., Gurchumelidze T., Gales III M.E., Silva Y.J., Libcke J., Schork M.A.

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Abstract:

This study was designed to compare Nd:YAG laser to fibrin glue, electrocautery, and avitene in the management of superficial splenic injury. Six dogs were submitted to laparotomy. A 11 blade scalpel was used to sharply excise the splenic capsule inflicting four 1" x 1" superficial injuries on each spleen. The lesions were treated. All animals had a second laparotomy ('first relaparotomy'); 2 dogs each were reexplored on postop days 3, 7, and 14. Morphologic and histologic observations were made. A third and final relaparotomy was performed on all dogs at 21 days with repeated morphologic and histologic assessments. Hemostatic times, grades of adhesions, and microscopic changes were not significantly different among the various treatments ($P > 0.25$). Capsular plaque formations were significantly different at the first relaparotomy ($P < 0.01$) and at final relaparotomy ($P < 0.05$). Both adhesions and capsular plaque formation were least at fibrin glue-treated sites, whereas Nd:YAG (1.06 mum) was most effective for average hemostatic time (mean = 109.67 s). Electrocautery produced the greatest necrosis at treatment sites. We conclude that all modalities are effective in controlling hemorrhage.