Background

Questions have been raised concerning the safety of bovine serum albumin-glutaraldehyde (BSAG) glue (BioGlue®) used to reinforce graft anastomoses in aortic surgery. Concerns include possible transmigration of glue across suture holes, distal embolization, and false aneurysm or anastomotic disruption. We examined clinical experience with the use of BioGlue in thoracic aortic surgery, to determine if such problems were detected.

Methods

From review of our computerized database (10/15/1998-8/9/2005), we identified 97 consecutive patients (23 female and 74 male, age range 27 to 86 years) in whom BioGlue or similar product was used for reinforcement of thoracic aortic suture lines (n= 85 BioGlue, 12 GFR (French) glue). BioGlue was used selectively for acute aortic dissection and/or tissue fragility and was applied sparingly to avoid formation of a plastic-like mold. These cases included 79 ascending/arch procedures, 15 descending/thoracoabdominal procedures, and 3 encompassing both. The clinical outcome and post-operative CT scan findings were reviewed. Follow-up ranged from 1 to 90 months (mean: 15.1 months).

Results

Peri-operative survival was 93/97 (95.9%). Six patients (6.2%) required re-exploration for bleeding. There were 5 early post-operative neurological events and no late strokes or peripheral embolic events. CT scan follow-up was 84.9% complete (79 of 93 survivors) and identified 2 pseudoaneurysms, both of which were likely unrelated to BioGlue use.

Conclusion

Isolated problems associated with BioGlue have been reported. In this relatively large experience, we identified no obvious problems directly related to judicious use of BioGlue. BioGlue is a safe and effective adjunct in thoracic aortic surgery.

What is BioGlue?

− Bovine serum albumin-glutaraldehyde (BSAG) glue [BioGlue®, CryoLife, Inc., Kennesas, GA]
− Polymer with adhesive and sealant properties
− Covalently binds to tissue surfaces via cross-linking agents
− Begins to polymerize within 20 to 30 seconds, reaches its bonding strength within two minutes

Emergent/Urgent Surgery

53 (54.6%)

Complications

Perioperative

Blending

6 (6.2%)

Neurological

6 (6.2%)

Death

4 (4.1%)

Late Complications

Death

14

Pseudoaneurysm

2

Mean Follow Up

15.1 months (Range 1-90)

CT Follow Up

70 (84.9%)