APPLICATION OF POLYGLYCOLIC ACID SHEETS AND BASIC FIBROBLAST GROWTH FACTOR TO PREVENT ESOPHAGEAL STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION IN PIGS

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A porcine study found that polyglycolic acid sheets combined with basic fibroblast growth factor significantly reduced esophageal stricture after complete circumferential endoscopic submucosal dissection compared to no treatment.

KEY POINTS

- The PGA+bFGF group showed significantly lower esophageal stricture rates (36.7%) compared to the control group (63.6%, $p<0.05$), with the PGA-alone group showing intermediate results (42.2%).
- Both PGA+bFGF and PGA-alone groups demonstrated significantly reduced myofibroblast markers, with anti-α SMA antibody staining of 16.7% and 15.5% respectively versus 24.0% in controls ($p<0.01$).
- Anti-calponin-1 antibody staining was significantly lower in both treatment groups (PGA+bFGF: 24.4%, PGA: 19.8%) compared to controls (32.9%, $p<0.001$).
- The PGA+bFGF group showed the most uniform fibrous layer thickness with the smallest difference between thinnest and thickest areas (467.3 μm) compared to PGA (934.9 μm) and control (726.2 μm) groups ($p<0.05$ vs control).
- This porcine model study suggests that PGA combined with bFGF may prevent post-ESD esophageal stricture by suppressing myofibroblast activation and fibrosis in the acute phase.

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