



## Expanding Our Horizons: Editorial Comment on “The Effect of Laparoscopic Gastric Ischemic Preconditioning Prior to Esophagectomy on Anastomotic Stricture Rate with Comparison to Esophagectomy-Alone Controls”

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Esophagectomy is one of the most challenging procedures in surgery and is associated with high morbidity and mortality.<sup>1</sup> Esophagogastric anastomotic leaks following esophagectomy can be devastating and can lead to disability, prolonged hospitalization, increased costs, and mortality. Various factors, including nutritional status, prior radiation, and anastomotic technique, can be associated with anastomotic leaks. Anastomotic ischemia, leaks, and strictures are interrelated and all share a common etiology of poor microperfusion to the site of anastomosis.<sup>2</sup> While various procedures have been proposed to reduce anastomotic leaks and strictures with promising clinical outcomes, none of these procedures has been validated.<sup>3–7</sup> Intraoperative techniques to improve gastric conduit perfusion such as “supercharging” the gastric conduit with additional microvascular anastomoses or tailoring the gastric conduit to create a well-vascularized but narrow tube for esophageal reconstruction have been described.<sup>8–10</sup>

Laparoscopic gastric ischemic preconditioning (LGIP) prior to an esophagectomy has been evaluated to reduce leaks and strictures by improving gastric conduit perfusion secondary to neovascularization of the stomach.<sup>11</sup> LGIP was

reported to improve gastric conduit perfusion quantitatively assessed with indocyanine green fluorescence angiography.<sup>12</sup> There have been several meta-analyses that have indicated that GIP can reduce the incidences of anastomotic leaks and strictures; however, it remains controversial, as individual studies have shown mixed results or definitive benefit.<sup>13,14</sup>

In this issue, Stuart et al. reported that LGIP prior to esophagectomy may reduce the rate and severity of anastomotic stricture following esophagectomy.<sup>15</sup> The authors’ protocol is one of the first prospective evaluations of LGIP applied universally to a cohort of patients undergoing esophagectomy for cancer. Previously they reported the short-term outcomes for this strategy, including improvement in anastomotic leak rate.<sup>16</sup> Although Stuart et al. demonstrate that gastric ischemic preconditioning can be performed safely and effectively as a minimal access operation, gastric ischemic preconditioning can cause complications that potentially delay treatment initiation.<sup>17</sup> Whether all patients or only those at higher risk should undergo LGIP remains unknown, however, that might be determined by who develops anastomotic complications following esophagectomy.<sup>12</sup> An alternative strategy of including gastric ischemic preconditioning during diagnostic staging laparoscopy also has been described.<sup>12</sup>

In seeking to reduce anastomotic leak or stricture, an esophagectomy can be completed using a variety of intraoperative approaches and techniques. As Stuart et al. and others have shown, operative strategies prior to the index esophagectomy, particularly gastric ischemic preconditioning, are worthy of consideration.

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