Pectoralis Myocutaneous Muscle Flap for Coloesophageal Anastomotic Leak

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Abstract

The pectoralis myocutaneous muscle flap, first described in 1979, is a commonly used reconstructive flap in head and neck surgery(1). It is supported by the copious vascularity from the thoracoacromial artery and segmental perforators from the internal mammary artery and provides bulk for defects with acceptable cosmetic outcomes. Since its inception the complication rate has ranged from 17-63% with flap necrosis accounting for 16% of negative outcomes. Major necrosis being attributed to only 37% of these patients who experienced any degree of necrosis(2,3,4,5,6,7).

Case

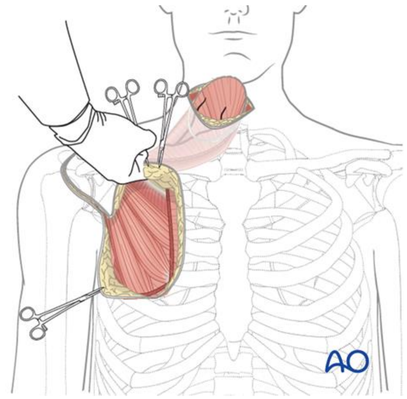
74M with past medical history of atrial fibrillation on Eliquis (Apixaban) who presented to the ED with the chief complaint of dizziness and syncope status post ablation. He was found to have a massive upper GI bleeding from an atrialesophageal fistula. He underwent total gastrectomy with en bloc distal esophagectomy, ligation of left atrial appendage through a left thoracoabdominal incision and two days later re-look laparotomy, J tube insertion and washout. He suffered a stroke before GI re-constitution and he was left in discontinuity. One year later, he underwent an EGD, re-do laparotomy, colonic interposition, substernal pull up of colonic conduit, colo-duodenal anastomosis, resection of the left clavicular-manubrial joint, esophagocolonic anastomosis in the left neck which restored GI continuity. Post-operatively he developed a leak at the colo-esophageal anastomosis from bile reflux and poor wound healing which was initially managed with an esophageal stent. He failed non-operative management and underwent redo laparotomy, adhesiolysis, take down of previous colo-duodenal anastomosis, conversion to roux en y jejunojejunostomy. Closure of the defect in his neck was accomplished with a pectoralis muscle flap.

A skin island was designed on the inferior pectoral muscle. The pectoralis muscle was circumferentially incised and divided medially and laterally and towards the clavicle. The fistulous tract was excised. The vascular pedicle was visualized and left intact. The flap showed good perfusion. The flap was transposed medially without tension and the skin island was de-epithelialized except a central 1.5 x 3 cm area of skin. The flap was flipped 180 degrees so the skin island was facing into the fistula/ mucosal defect. The flap skin island was placed into the wound and sutured at the cardinal points. A Blake drain was brought up into the left neck region to provide drainage near the fistula repair. Next, the left pectoralis muscle from the flap was brought over the skin island and inset into the wound margin. An additional 19 Blake drain was tunneled out laterally. A Prevena VAC was placed over the vertical chest incision. A dermatome was used to harvest a 1/100 of an inch split thickness skin graft from the left thigh. The graft was left unmeshed and was secured to the skin.

He developed another leak from the colo-esophageal anastomosis but this healed on its own. He has since been doing well and continues to be followed for EGD dilations.

Discussion

The pectoralis myocutaneous flap is the first choice for head and neck reconstruction since it provides a one stage reconstruction, low morbidity and a good cosmetic and functional outcome (8). It can also be used as a salvage procedure for previous free flap necrosis, in cases when free flaps are contraindicated and can be used in patients with a high risk of wound dehiscence (9,10). Necrosis is rarely seen in a pectoralis myocutaneous flap. The creation of the flap can be done by one team of physicians which avoids the logistics of arranging to have two teams in the operating room at the same time. The flap can also be used for defects involving two epithelial surfaces and can protect vascular structures including the carotid artery. Disadvantages of the flap include concealing recurrences, involvement of breast tissue may lead to asymmetry and chest hair involvement and upper extremity weakness



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12. Picture courtesy of Dr. Liang