AB170. 193. An anatomical study of sliding pectoralis major advancement flap for sternal defects

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Background: Deep sternal wound infections (DSWI) represent an uncommon but significant complication of open cardiac surgery associated with significant mortality and morbidity. The use of muscle flaps such as pectoralis major advancement flap for DSWI reconstruction has resulted in reduced hospital stay and mortality. One limitation of this flap is the concern for coverage of the lower one third of the sternum, a common area of dehiscence following flap repair.
Methods: This study aimed to determine the distance (cm) and surface area (cm^2) of sternum covered when pectoralis major is dissected off sequentially from the sternocostal origin and humeral insertion using 20 cadaveric specimens.
Results: The largest proportion of sternum was covered when both the origin and insertion were divided, allowing the flap to be islanded on its vascular pedicle. The average distance covered with sternal division alone was 1.22 (min 0–max 3.2) cm and 55.43 cm^2 compared with 3.91 (min 0.9–max 6.3) cm and 85.36 cm^2 with division at both the humerus and sternum.
Conclusions: Division of both the sternal origin and humeral insertion for pectoralis major advancements flaps represents an effective means of increasing sternal cover. This study describes average distance and area covered by the sliding pectoralis major advancement flap. These measurements could inform plastic surgeons in prediction of reconstructive success based on sternal defect size in clinical practice.
Keywords: Pectoralis; advancement; flap; reconstruction; outcome

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