

TECHNICAL REFINEMENTS IN REPAIR OF  
SLIDING HIATAL HERNIAS

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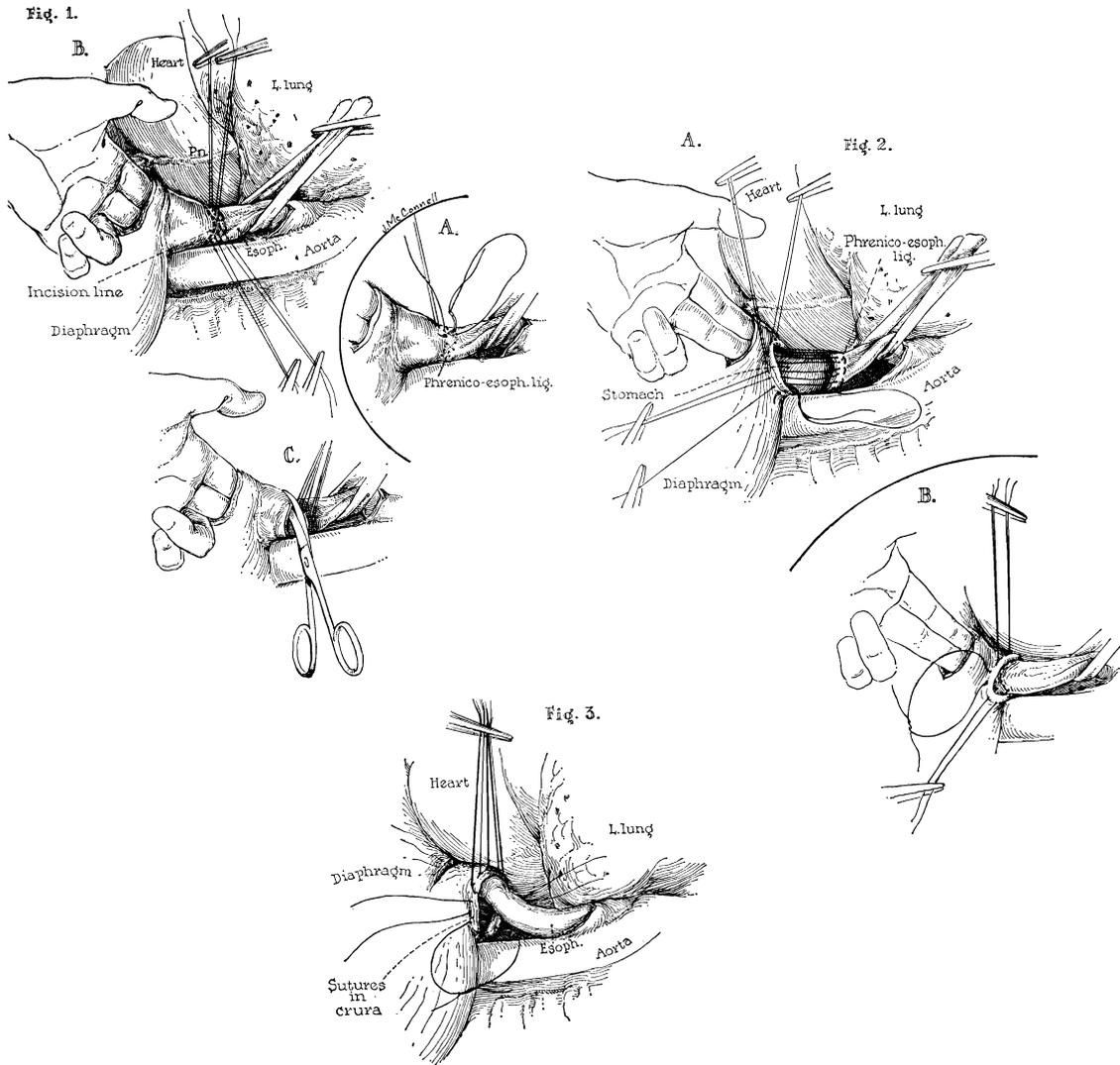


FIG. 1. A and B, Delineation of sac through counter incision in diaphragm and placement of figure-of-8 sutures in phrenicoesophageal ligament. Dotted line indicates proposed line of incision. C, Sutures placed and sac opened.  
 FIG. 2. Free ends of previously placed sutures being brought through the hiatal rim and tied.  
 FIG. 3. Traction on the sutures tightens and exposes the pillars for suture.

*Technical Refinements in Repair of Sliding Hiatal Hernias.—Thomas E. Starzl.*

# TECHNICAL REFINEMENTS IN REPAIR OF SLIDING HIATAL HERNIAS

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THE PRECISE ANATOMIC ABNORMALITIES in sliding hiatal hernias were not well understood until recently. In 1951, Allison published physiological and anatomic studies which established a rational basis for therapy. The essential steps in the Allison repair consisted of suture of the stretched phrenicoesophageal ligament to its normal attachment at the diaphragm and closure of the hiatus by reapproximation of the obturated muscle bundles of the right crus of the diaphragm.

The means by which these requisites are fulfilled have varied with different surgeons. Some have attached the phrenicoesophageal ligament above and some below the diaphragm. Some have questioned the presence of the ligament as a useful structure for repair or even as an anatomic entity. Others have noted difficulty in delineating for suture the pillars of the hiatus.

The following technique has been helpful in the repair of hiatal hernias. It aids accurate definition and suture of the phrenicoesophageal ligament and of the margins of the hiatus. Some of the features are similar to those of a method previously described by Sherman and Lyon.

## TECHNIQUE

Thoracotomy is performed on the left side with an incision in the seventh or eighth intercostal space. The left lower lobe of the lung is retracted superiorly. The mediastinal pleura is incised and the esophagogastric junction encircled with a rubber tape. The hernial sac is not disturbed at this time. A 1 inch counter incision which does not involve branches of the phrenic nerve is made in the diaphragm (Fig. 1).

A finger is introduced from the abdomen and figure-of-8 sutures of No. 00 silk are placed at the reflection of the hernial sac at the esophagogastric junction (Fig. 1A and B). Ample bites are taken, which should include peritoneum and adjacent ligamentous tissue (Fig. 1B).

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Suturing is carried as far laterally as possible on both sides. The sutures are tied and the suture ends are left long (Fig. 1). The hernial sac is now opened or excised (Fig. 1C).

The long ends of the previously placed sutures are rethreaded. Curved needles are passed through the hiatus and back through the diaphragm into the chest (Fig. 2A). When all the sutures have been placed, the phrenicoesophageal tissue has been aligned circumferentially to the anterior portion of the hiatus (Fig. 2). Each pair of sutures is now tied on the superior aspect of the diaphragm (Fig. 2B), so that the stomach is reduced and the phrenicoesophageal tissue is attached below the diaphragm. Suture ends are again left long.

Traction is now applied to the previously tied sutures (Fig. 3). The traction elevates the esophagogastric junction and elongates the hiatus so that the muscular pillars can be palpated as taut bands and identified with a minimum of dissection. The hiatus is approximated posteriorly with interrupted silk sutures (Fig. 3), and the chest is closed. Water seal drainage is used.

## SUMMARY AND CONCLUSIONS

The greatest difficulties with the Allison repair for sliding hiatal hernia are accurate identification and suture of the phrenicoesophageal ligament and of the pillars of the hiatus. With the described technique, the phrenicoesophageal area is marked for eventual subdiaphragmatic placement before any dissection is carried out. The method of attachment of the ligament to the diaphragm facilitates subsequent identification and suture of the hiatal margins.

## REFERENCES

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