The Nissen-Hill Hybrid - Pilot Study of a New Antireflux Procedure

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The high risk GERD patient

- **UNCOMPLICATED GERD**
  - laparoscopic repair: >90% long term success

- **COMPLICATED GERD/PEH:**
  - paraesophageal hernia/short esophagus:
    > 40% anatomic failure
  - Barrett’s esophagus:
    > 50% long term failure

Ferri et al Surg Endosc 2005
Csendes et al. Surgery, 1998
NISSEN FAILURES
HILL REPAIR

ADVANTAGES
- excellent long-term results
- GEJ anchored to preaortic fascia
- no wrap to herniate / slip

DISADVANTAGES
- hard to conceptualize, teach
- fundus can herniate
- Collar sling sutures can loosen
HYBRID TECHNOLOGY
Hybrid Synergy

Combine:

→ $360^\circ$ external **Nissen** fundoplication

**plus**

→ GEJ internal **Hill** sutures

**Nissen – Hill Hybrid**

**NOT JUST AN ANCHORED NISSEN!**
Methods

• IRB approved pilot study

• Indications:
  Complicated GERD
  - Barrett’s
  - PEH (> 5 cm)
  - Normal esophageal motility

• Pre-op, 6 w, 6 - 12 m
  - QOLRAD
  - GERD-HRQL
  - Dysphagia
  - 5-point satisfaction scale

• Pre-op and 6 - 12 m
  - EGD w Bx’s
  - High resolution manometry
  - Bravo 48 hr pH testing
  - Barium swallow
Results – Hernia types

Mean hernia size 7.5 CM

19 with hernia

Type 1
4

Type 2
5

Type 3
7

Type 4
3
Operative Results

**Mortality:** 0

**No conversions**

**Avg. LOS:** 2.2 days

**Avg. OR time:** 211 min

**Morbidity:**

- Bougie perforation (1)
- Arrhythmia (2)
- Dysphagia + TPN (1)
- Urinary retention (1)
- COPD exacerbation (1)
- Ileus/Dehydration (1)
QUALITY OF LIFE SCORES

QOLRAD

- Preop
- 6-8 weeks
- 6-12 mo

GERD-HRQL

- Preop
- 6-8 weeks
- 6-12 mo

GERD-HRQL:
- p=.0008 preop vs 6-8 wks
- p=.01 preop vs 6-12 mo

Dysphagia: NS between all grps

p<0.02, Preop vs. 6 wks, 6mos
p=0.03, 6-8 wks vs. 6-12 mo
5 POINT SATISFACTION SCORE

6-12 mo:

- 94% pts rated surgery “strongly beneficial”

- 88% “definitely recommend to family member with same condition”
RESULTS
48 HOUR PH BRAVO

Preop 6-12 mo

DeMeester score

n=10, p<0.00002, Student’s T-test
Mid-term Results (6-12 mo)

- 2 pts - dilatation required at 6 months
  - dysphagia resolved

- Anatomic recurrence: 1
  - 2 cm PEH
  - Asymptomatic;
  - manometry, pH, EGD, UGI otherwise normal

- ? Clinical recurrence: 1
  - Partial – primary Sx resolved
  - Objective testing pending

- No re-operations
Conclusions

- Laparoscopic Nissen-Hill Hybrid repair is safe and technically feasible

- Preliminary results in complicated GERD:
  - excellent control of acid reflux
  - low incidence of anatomic or physiologic recurrence
  - high patient satisfaction

- More data are needed to assess long term efficacy and side effects