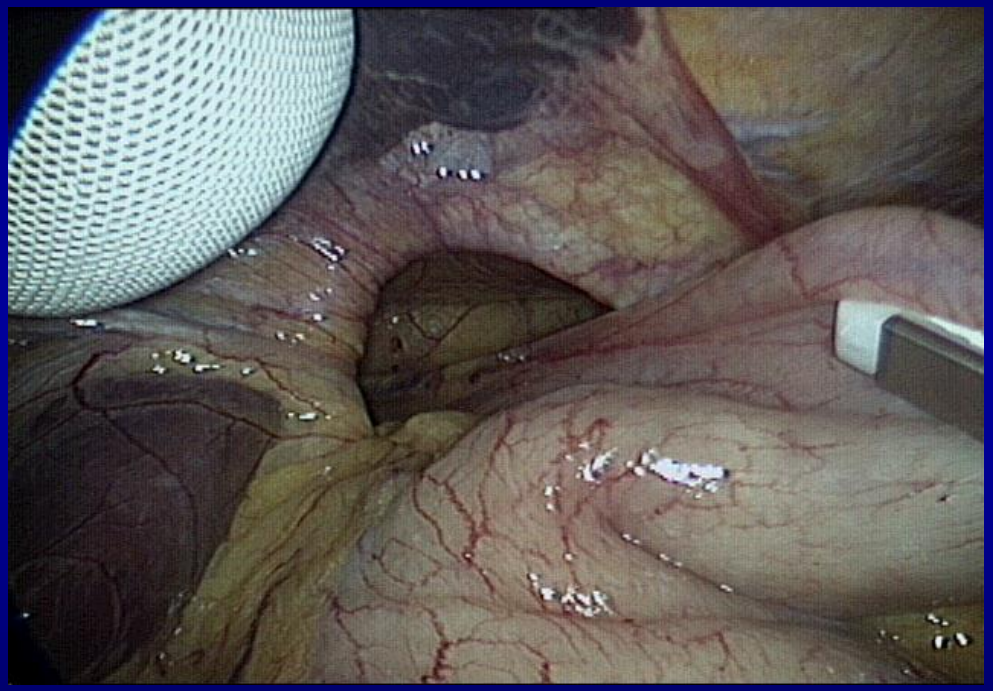
The Use of Mesh Prosthesis for Hiatal Hernia Repair



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Introduction

- Large Hiatal Hernia - High Recurrence Rate

  Complications and Results of Laparoscopic Reflux Procedures: A Review of 10,489 Cases

  --Frantzides CT, J Am Coll Surg. 2001

- Technique of Hiatal Hernia Repair

  Management of Intrathoracic Stomach with Polypropylene Mesh Prosthesis Reinforced Transabdominal Hiatus Hernia Repair

  -- Condon RE, et al. J. Am. Coll. Surg. 1998

  Prosthetic Reinforcement of Posterior Cruroplasty During Laparoscopic Hiatal Herniorrhaphy

  -- Frantzides CT, Surg Endosc. 1997

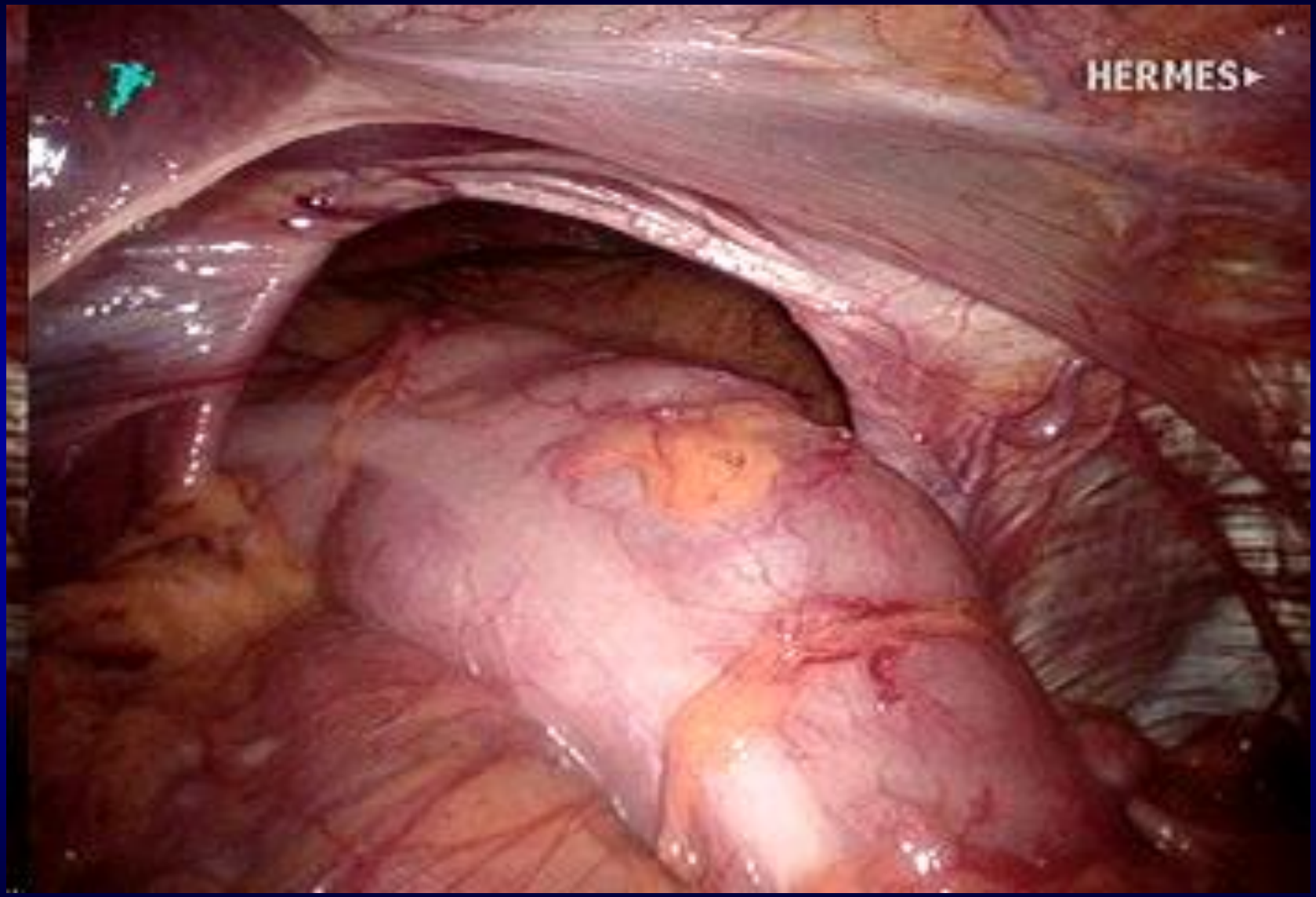
Hypothesis

The use of prosthetic mesh reinforcement may decrease the recurrence rate of large hiatal hernias.

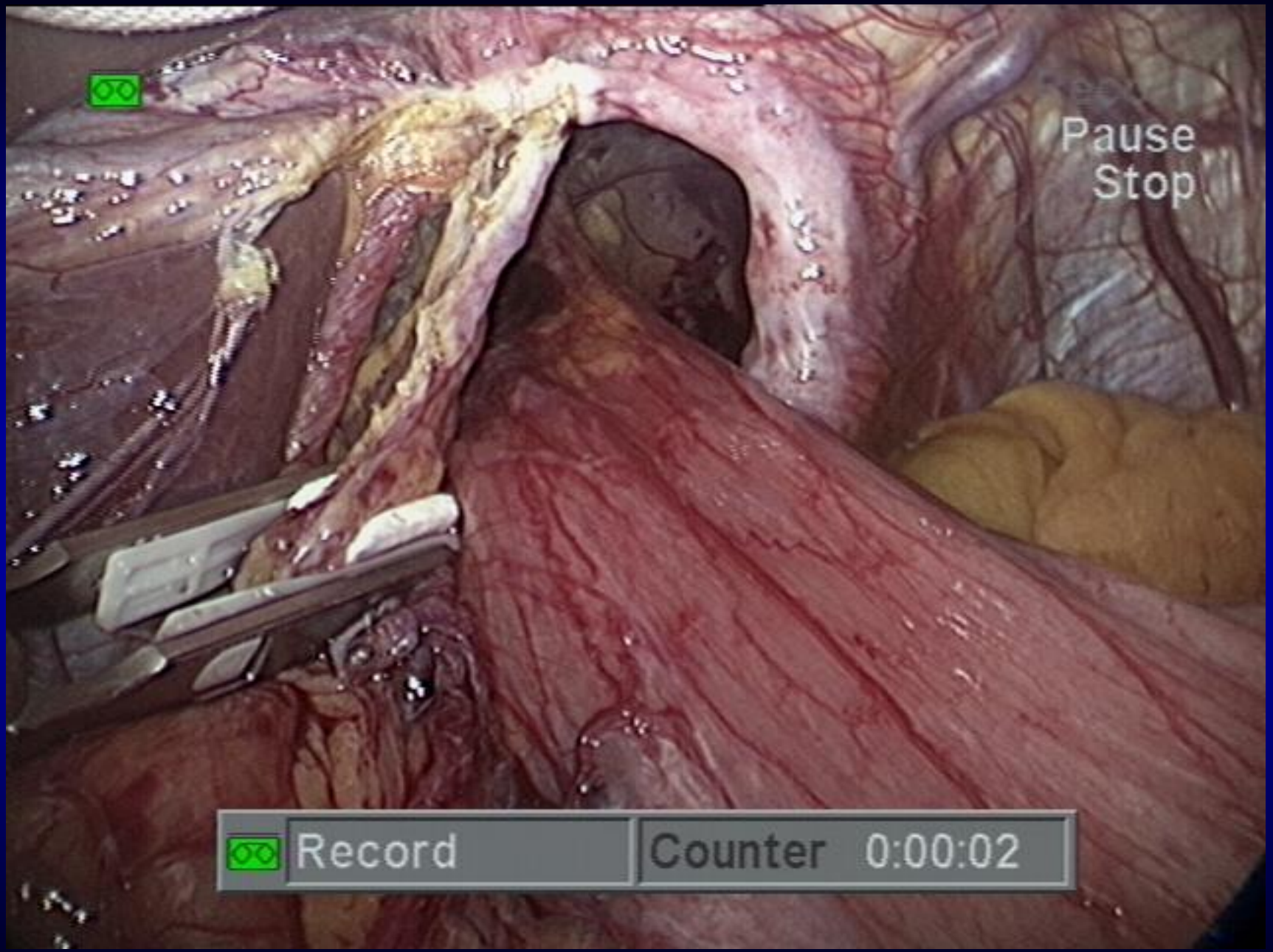
Frantzides CT, Madan AK,
A prospective randomized trial of PTFE patch repair vs. simple cruroplasty for large hiatal hernia. Arch. Surg. 2002

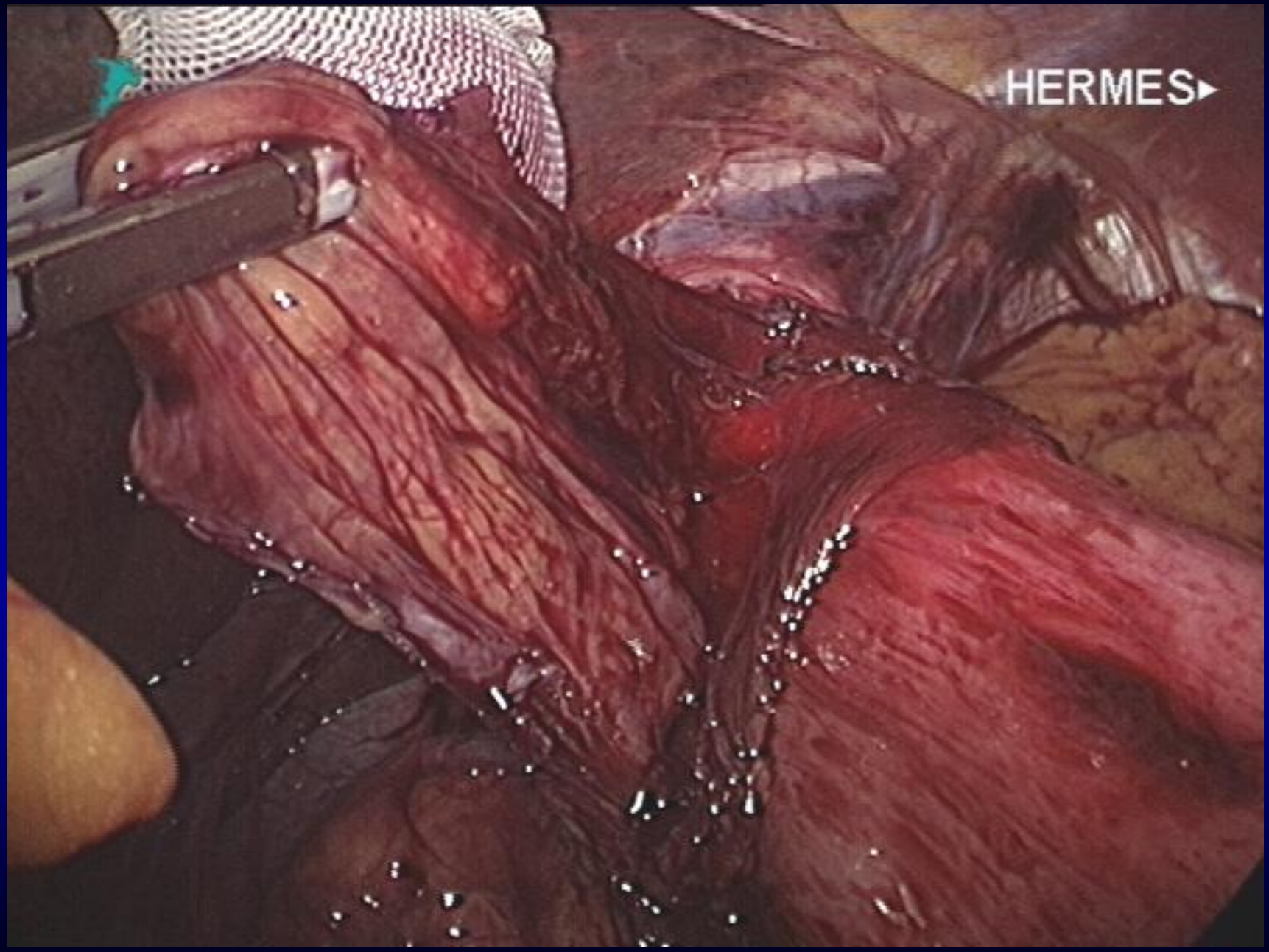
Study Design

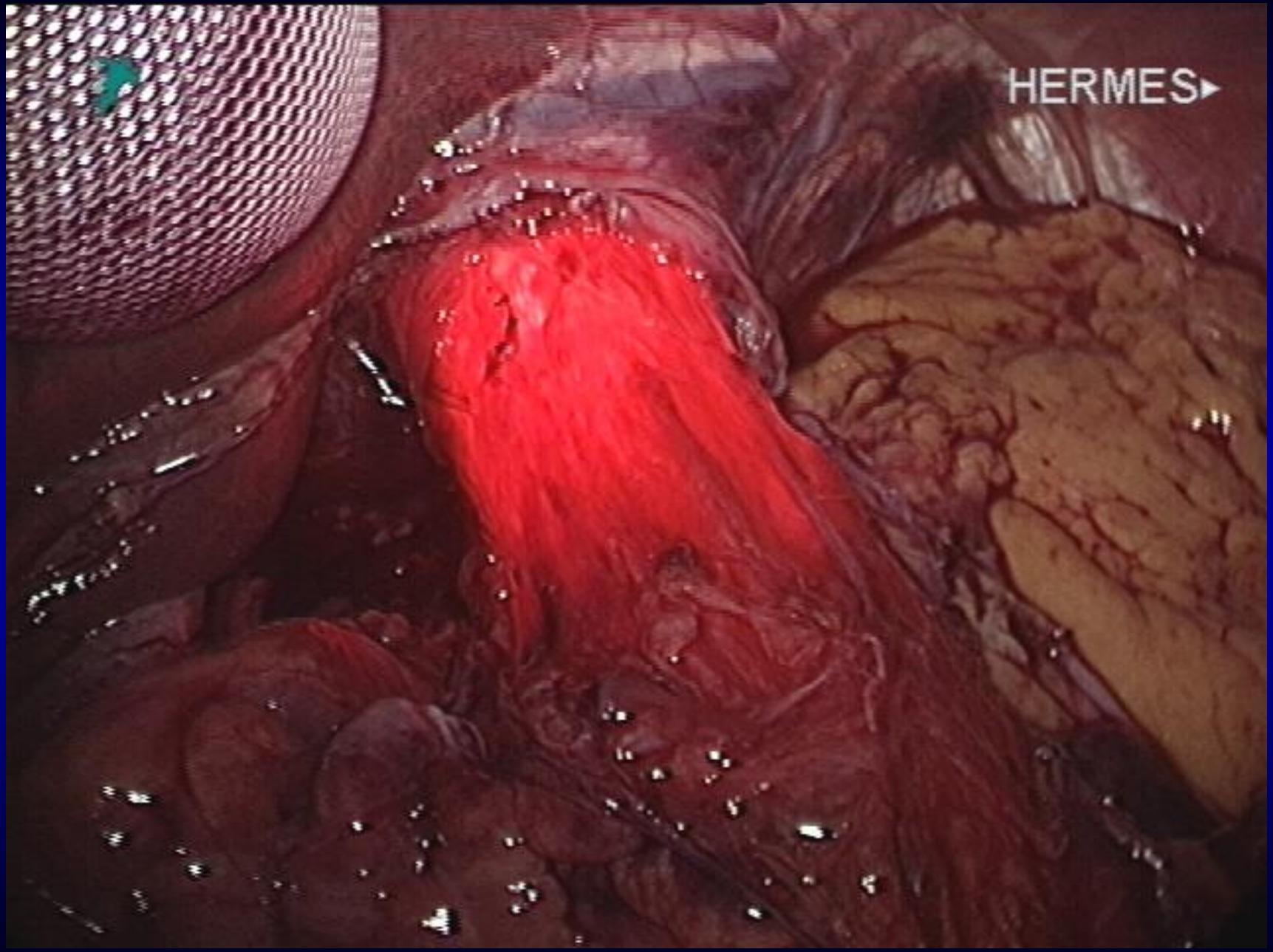
- Prospective 1991-2000
- Randomized
- Patients with ≥ 8 cm hiatal defect
- Two Groups:
  - Simple Cruroplasty
  - PTFE onlay mesh with cruroplasty

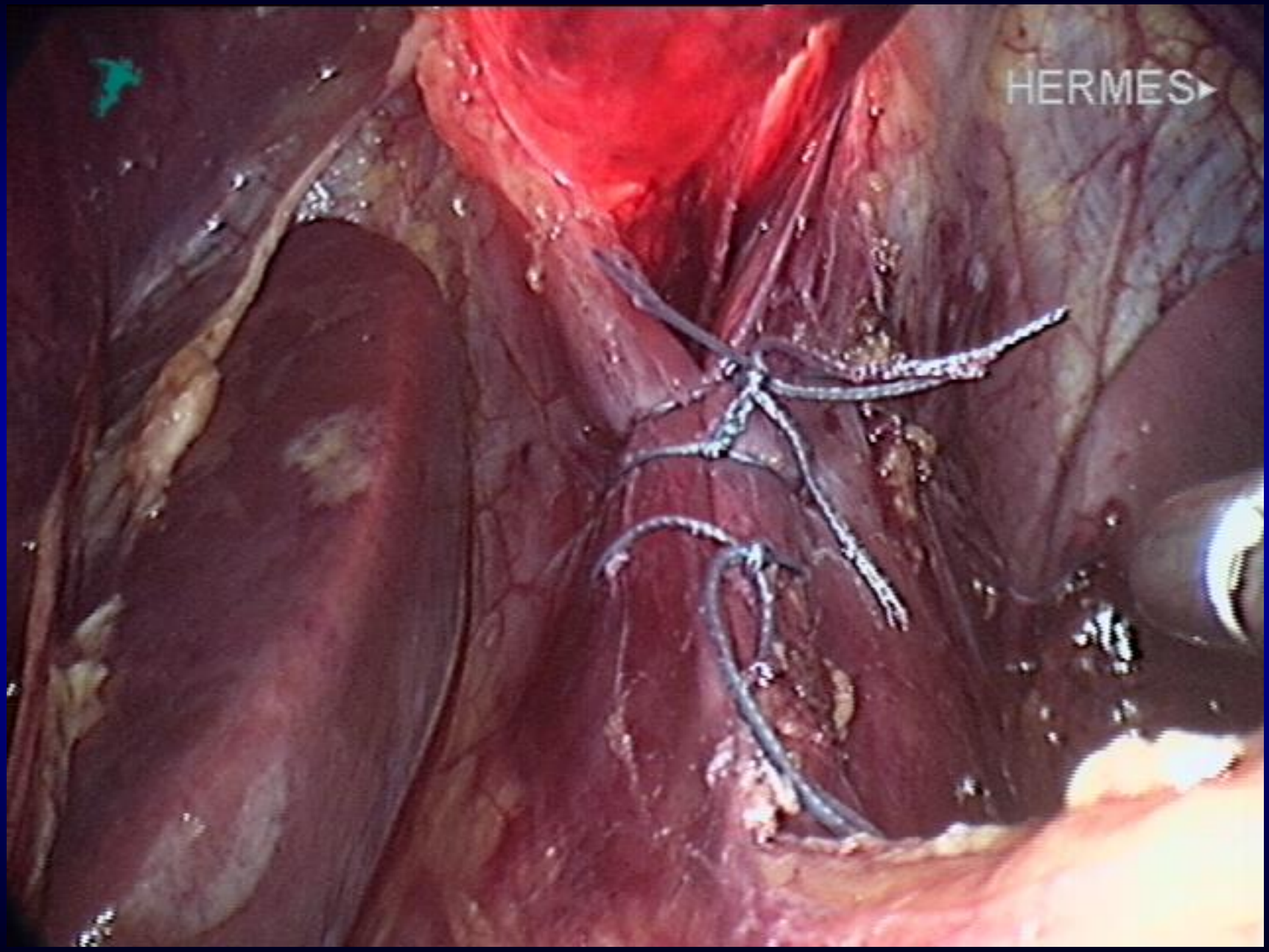


Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002


Pause
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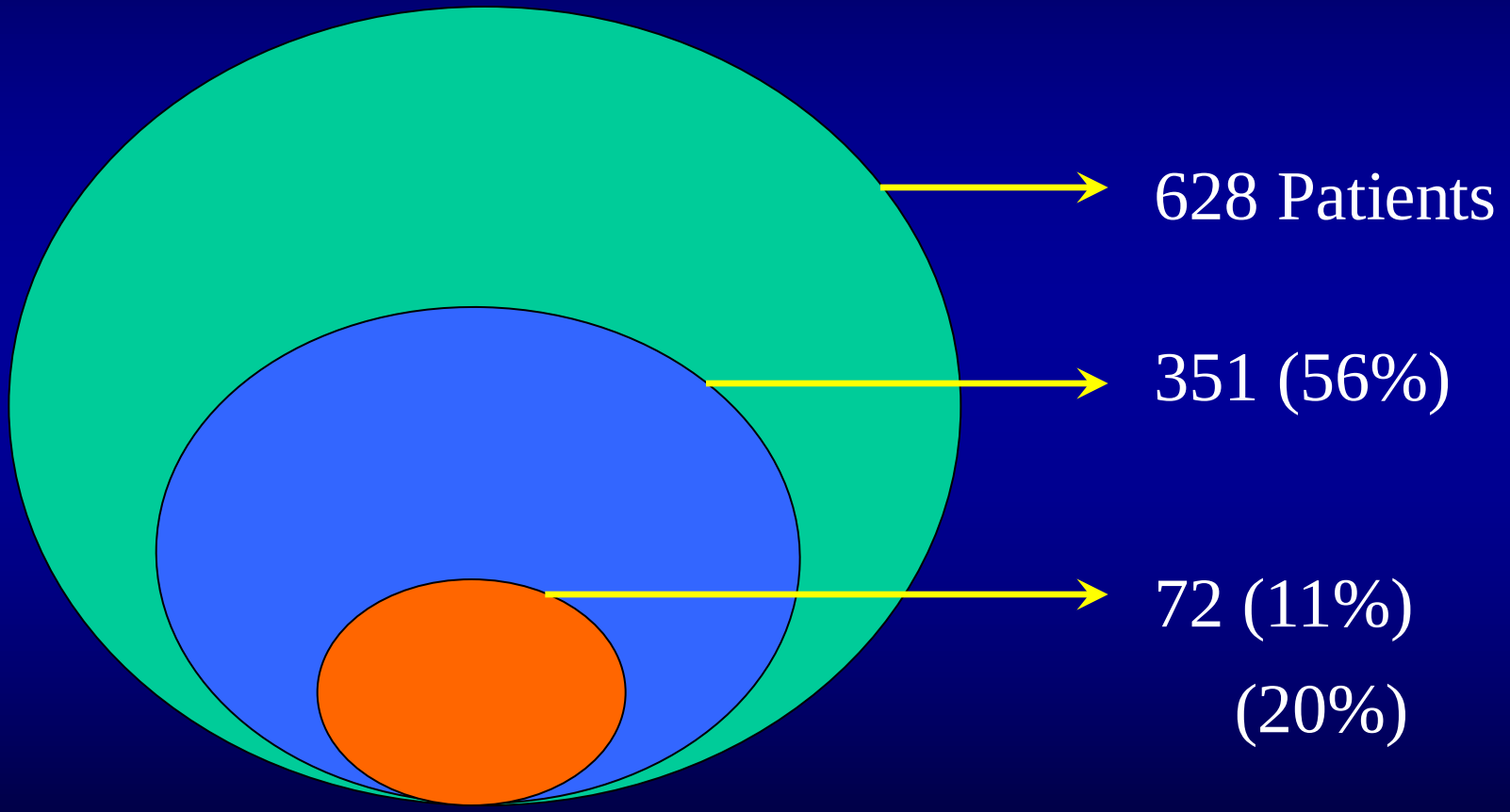

HERMES


HERMES


HERMES



Study Population



Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002

Study Population

72 total patients (Type I - IV)

- Simple cruroplasty: 36 patients
- PTFE group: 36 patients

Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002

Follow-up

- Office visits:
  - one week
  - one month
  - three months
  - six months
  - yearly
- Esophagogram
  - 3 months
  - 6 months

Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002

Follow-up

- Range: 6 months to 6 years
- Mean: 3.3 $\pm$ 1.7 years
- Median: 2.5 years

Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002

Results

	Simple Cruroplasty	PTFE
Age (years)	63 (42-81)	58 (36 – 92)
Duration of Surgery (hrs)	2.1 ± 0.3	2.6 ± 0.5*
Hospital Stay (days)	2	2
Complications (minor)	1	2
Conversions	0	0
Recurrences	8 (22%)	0 (0%)*

Frantzides CT, Madan AD, Carlson MA, Archives of Surgery 2002

Complications

Simple Cruroplasty Group

- Pneumothorax (conservative treatment)

PTFE group

- Pneumonia
- Urinary retention (delayed discharge)

No long term sequela from any complications

Recurrences

- 3/8 patients chose medical management
- 5/8 patients underwent reoperation
  - 1 patient had an open repair with PTFE
  - 4 patients had a laparoscopic repair with PTFE

Cost

- PTFE group > $960 ± $70
- Cost due to increased operative time as well as the cost of the prosthesis

Jan. 2001-Dec.2012

- Hiatal Hernia > 5 cm
- Poor tissue
- Cases

Total HHR:	1094	Recurrence:
without mesh:	916 (83.7%)	16 (1.7%)
with mesh:	178 (16.3%)	2 (1.1%)

Comparative Studies

Author	Publication	Mesh	Non-Mesh	Type	Mesh Recurrence	Non-Mesh Recurrence
Schulz	JGGW 1998	161	157	Prolene	2 (1.2%)	12 (7.1%)
Basso	Surg Endos 2000	67	65	Prolene	0	9 (13.8%)
Frantzides	Arch Surg 2002	36	36	PTFE	0	8 (22%)
Kamolz	Surg Endos 2002	100	100	Prolene	1 (1%)	9 (9%)
Ganderath	J Gast Surg 2002	170	361	Prolene	1 (0.6%)	22 (6.1%)
Ganderath	Arch Surg 2005	50	50	Prolene	4 (8%)	13 (26%)
Oelschlager	Ann Surg 2006	51	57	Biologic Mesh	4 (9%)	12 (24%)
Oelschlager	JACS 2010	51	57	Biologic Mesh	*(54%)	*(59%)

SAGES QUESTIONNAIRE

- A questionnaire was sent to all members of SAGES in 2006 regarding hiatal hernia repair.
- 275 responses were reviewed and 261 were acceptable for analysis for a total of 4803 cases.
- 77% laparoscopic and 74% use of mesh in their repairs.

- *Frantzides CT, Luu M, Roberts J, Zeni T, Frantzides A: Hiatal Hernia Repair with Mesh: A Survey of SAGES Members. Surg. Endosc. 2009*

SAGES QUESTIONNAIRE

- On lay technique was used by 64% of the surgeons.
- Only 22% of the surgeons routinely perform 360 degree reinforcement of the hiatus.
- 31% used biomaterial, 24% PTFE, 4% polypropylene, 20% other.

Conclusion

Prosthetic reinforcement of cruroplasty in large hiatal hernias lowers recurrence rate.