



# N-hexyl cyanoacrylate for the closure of mesenteric defects during Roux-en-Y gastric bypass

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# disclosures

- Peters surgical paid hotel and plane for this meeting



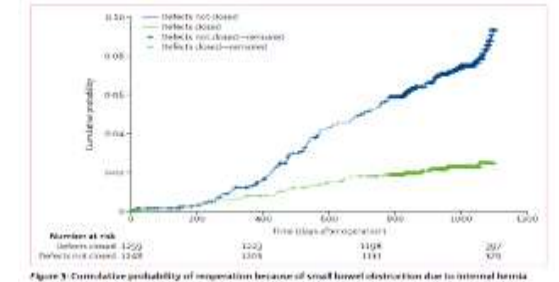
# Closing the defect in RYGBP is recommended to reduce IH occurrence

## Meta-analysis of internal herniation after gastric bypass surgery.

Geubbels N1, Lijftogt N, Fiocco M, van Leersum NJ, Wouters MW, de Brauw LM.  
Br J Surg. 2015 Apr;102(5):451-60. doi: 10.1002/bjs.9738. Epub 2015 Feb 24.

## Closure of mesenteric defects in laparoscopic gastric bypass: a multicentre, randomised, parallel, open-label trial

Stenberg et al. Lancet. 2016 Apr.



the optimal technique of closure remains to be determined.

Metallic clips ?

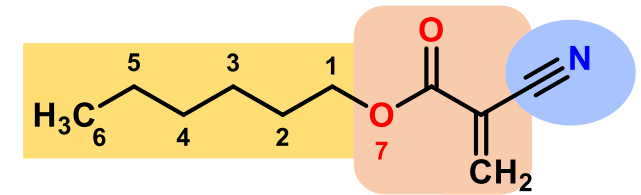
Absorbable suture ?

**Glue ?**

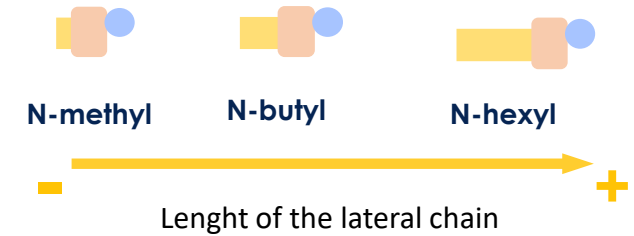
Non Absorbable suture ?

# n-hexyl cyanoacrylate

- Strong adhesive properties > biological glue
- Polymerisation in 40 s => no more adhesion after 1 min ≠ biological glue
- Excellent bio compatibility ( slow absorption )
- Good flexibility of the glue layer
- Weak exothermic reaction (2°C)
- Intraperitoneal clinical applications (1,2)



n-hexyl cyanoacrylate



1 Mercier, G., M. Loureiro, et al. (2017). «Surgical glue in laparoscopic sleeve gastrectomy: an initial experience and cost effectiveness analysis.» *Journal of Evaluation in Clinical Practice*.

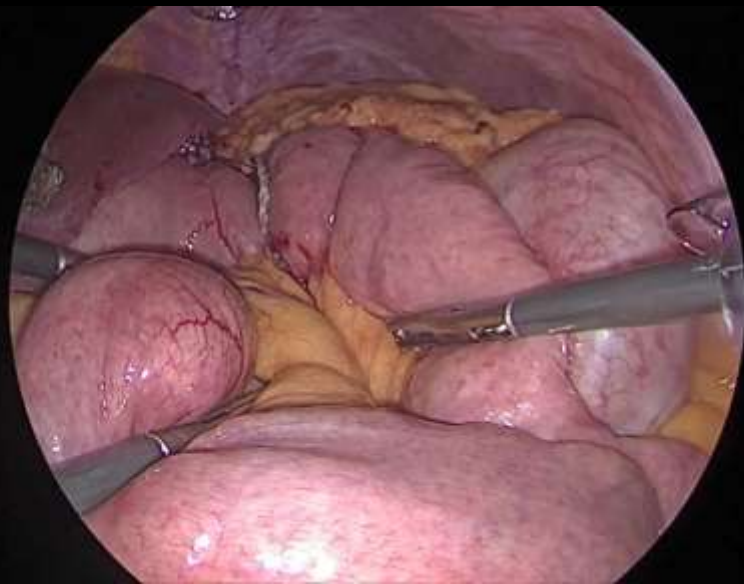
2 Lamblin, G., G. Dubernard, et al. (2017). «Assessment of Synthetic Glue for Mesh Attachment in Laparoscopic Sacrocolpopexy: A Prospective Multicenter Pilot Study.» *J Minim Invasive Gynecol* 24(1): 41-47.

# Methods

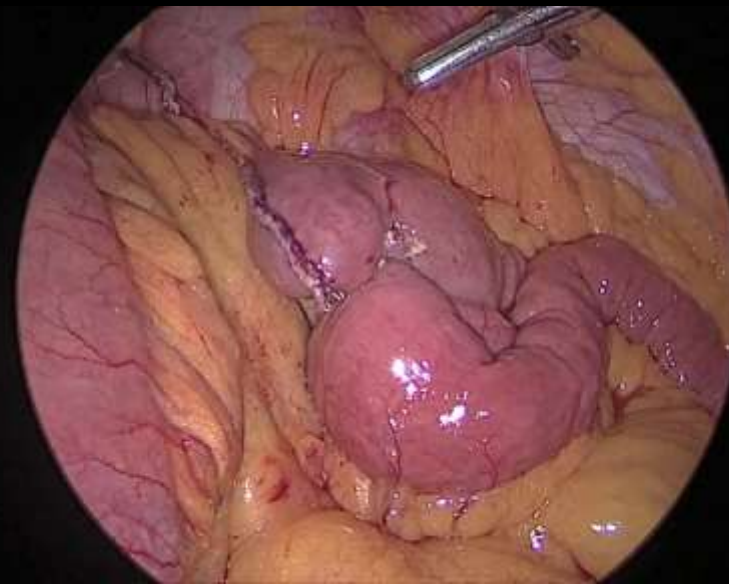


- Observational study of a prospective data collection with retrospective analysis
- Study conduct on 426 patients with a laparoscopic RYGB from February 2018 to March 2021
- Follow up at 1, 3, 6, 12 and 24 months

## Surgical technique



Petersen space closure



Mesenteric defect closure

## Defects closure at 14 months after RYGB



Petersen space



Mesenteric defect

# Results

## Characteristics of the **426** patients included

Characteristics	
Age (yo)	44
Sex (F/M)	333/93 (78.2/21.8%)
Mean BMI(kg/m2)	44.0 kg/m2
Median BMI (kg/m2)	43.6 kg/m2
Follow up (%)	
1 month	426 ( <b>100%</b> )
3 months	426 ( <b>100%</b> )
6 months	426 ( <b>100%</b> )
12 months	416 (97.6%)
24 months	387 (90.8%)

**Mortality 0%**



## Complications Dindo $\geq 3a$

	1 month	3 months
Umbilical hernia strangulation	2/426 (0.5%)	
Gastro jejunal fistula	2/426(0.5%)	
Barotrauma when extubating	1/426 (0.2%)	
Staple line bleeding	1/426 (0.2%)	
hemoperitoneum	1/426 (0.2%)	
Incisional hernia		1/426 (0.2%)

Short term complications 1,8%

	6 months	12 months	24 months
Small bowel intussusception			1/387 (0.25%)
Bowel obstruction (adhesion)			1/387 (0.25%)
Gastro-gastric fistula			1/387 (0.25%)
Incisional hernia		8/416 (1.9%)	2/387(0.5%)
Anastomotic ulcer	4/421 (0.95%)	8/416 (1,9%)	2/387 (0.5%)
Anastomotic stenosis	2/421 (0.47%)	2/416 (0.48%)	

Long term complications 7,4%

**No complication due to the use of synthetic glue was reported.  
No IH described.  
No Kinking.**

# Take Home Messages

N-hexyl cyanoacrylate for the closure of mesenteric defects during Roux-en-Y gastric bypass

- **Feasible and safe**
- **Respect the rules : thin layer and wait 1 min**
- Multicenter randomized studies necessary to confirm the results and evaluated best technique to close the defects