MÁSTER EN HEPATOLOGÍA

UNIVERSIDAD AUTONOMA DE MADRID

Universidad de Alcalá

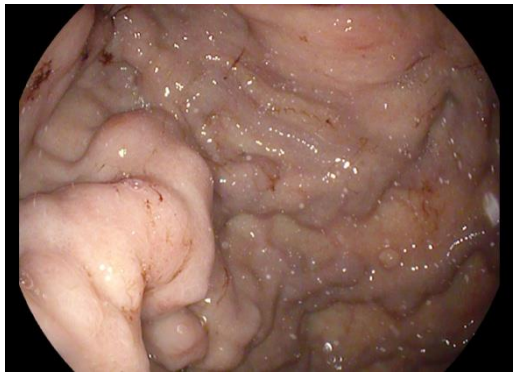
Asignatura: CIRROSIS HEPÁTICA II

"Problemas Hepatológicos en Endoscopia" Obliteración de Varices Fúndicas"

José Ramón Foruny Olcina

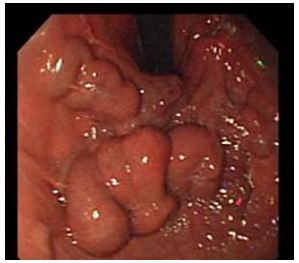
DIGESTIVO
RAMON Y CAJAL
MADRID

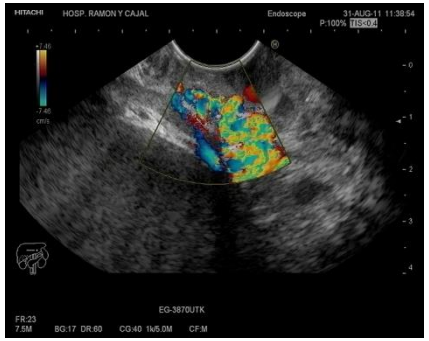
VARICES GÁSTRICAS



. **8-15%** de pacientes cirróticos con HTP
. **20%** en pacientes con HTP sin cirrosis

Menos frecuentes que las V. esofágicas (Child A 40%; Child C 85%)





HEMORRAGIA

* 10-30% de las hemorragias variceales
* Sangrado más grave (+ trasfusiones, > mortalidad)
* Tasa resangrado 35-90%

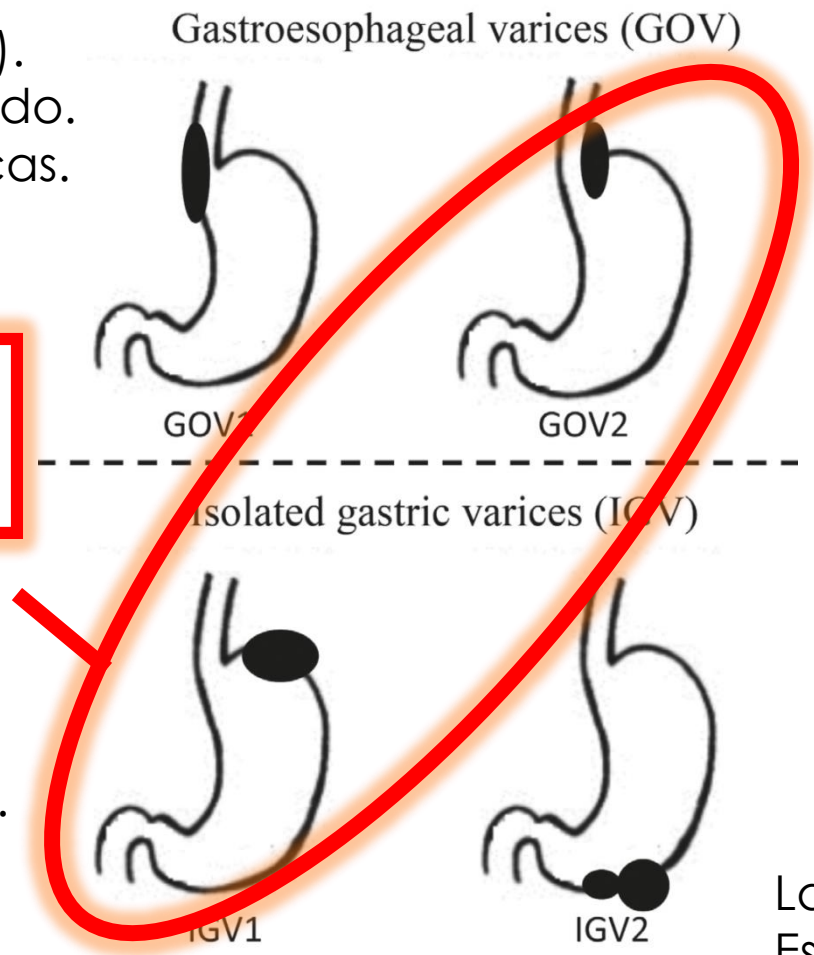
Sarin SK. Prevalence, classification and natural history of gastric varices. Hepatology 1992
García-Pagán J. Variceal and other portal hypertension related bleeding. Best Prac R C Gastroenterol. 2013

Clasificación de Sarin

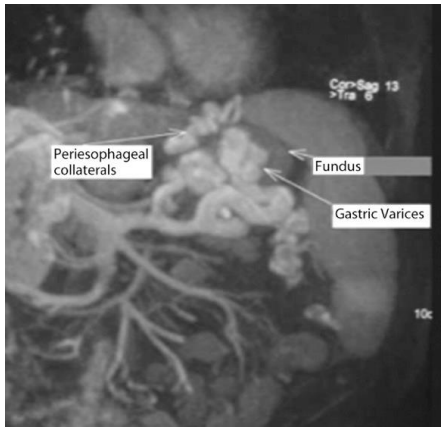
Correlación de riesgo de sangrado y tratamiento

Las + frecuentes (70%).
Bajo riesgo de sangrado.
Tto. similar V. esofágicas.

V. Fúndicas. Origen frecuente de sangrado por VG **(60-70%).**



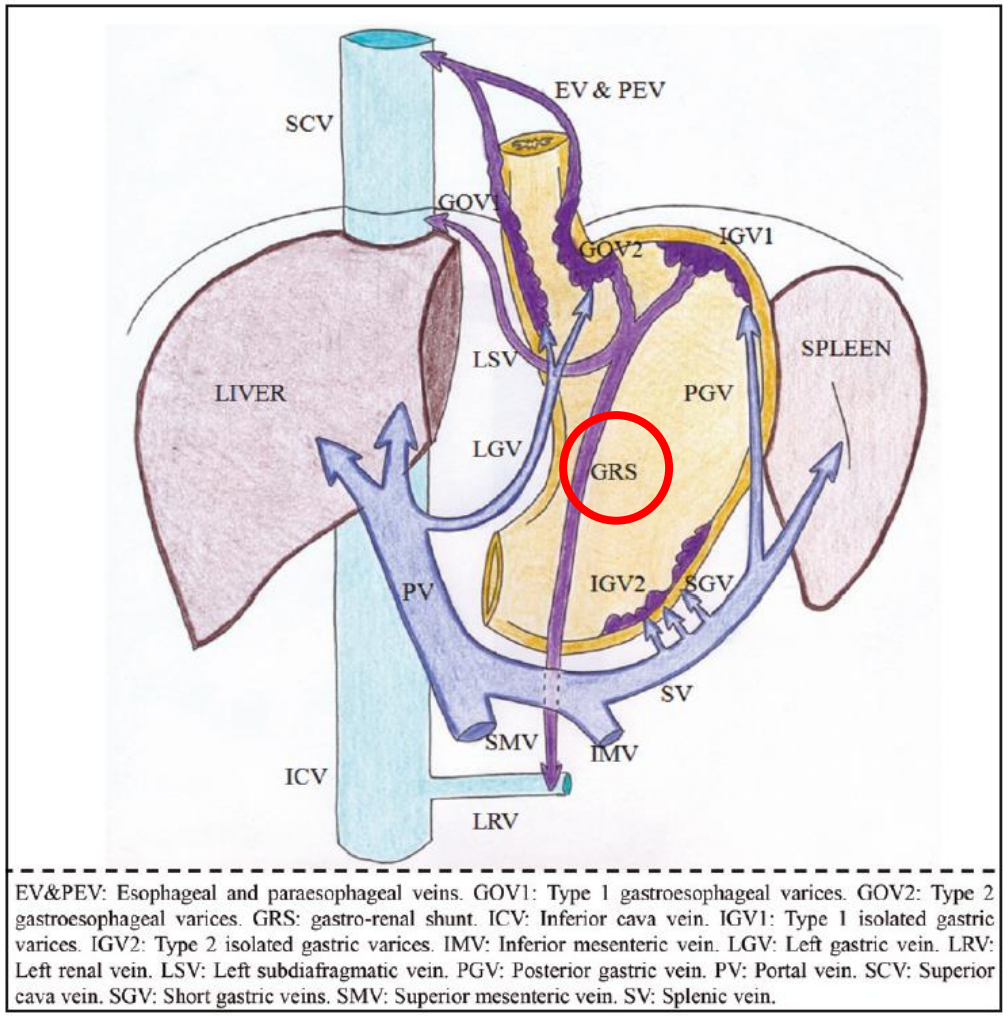
21% de las VG.



7% de las VG.

Las – frecuentes (2%).
Esclerosis o Bandas.

Anatomía vascular VG



EV&PEV: Esophageal and paraesophageal veins. GOV1: Type 1 gastroesophageal varices. GOV2: Type 2 gastroesophageal varices. GRS: gastro-renal shunt. ICV: Inferior cava vein. IGV1: Type 1 isolated gastric varices. IGV2: Type 2 isolated gastric varices. IMV: Inferior mesenteric vein. LGV: Left gastric vein. LRV: Left renal vein. LSV: Left subdiafragmatic vein. PGV: Posterior gastric vein. PV: Portal vein. SCV: Superior cava vein. SGV: Short gastric veins. SMV: Superior mesenteric vein. SV: Splenic vein.

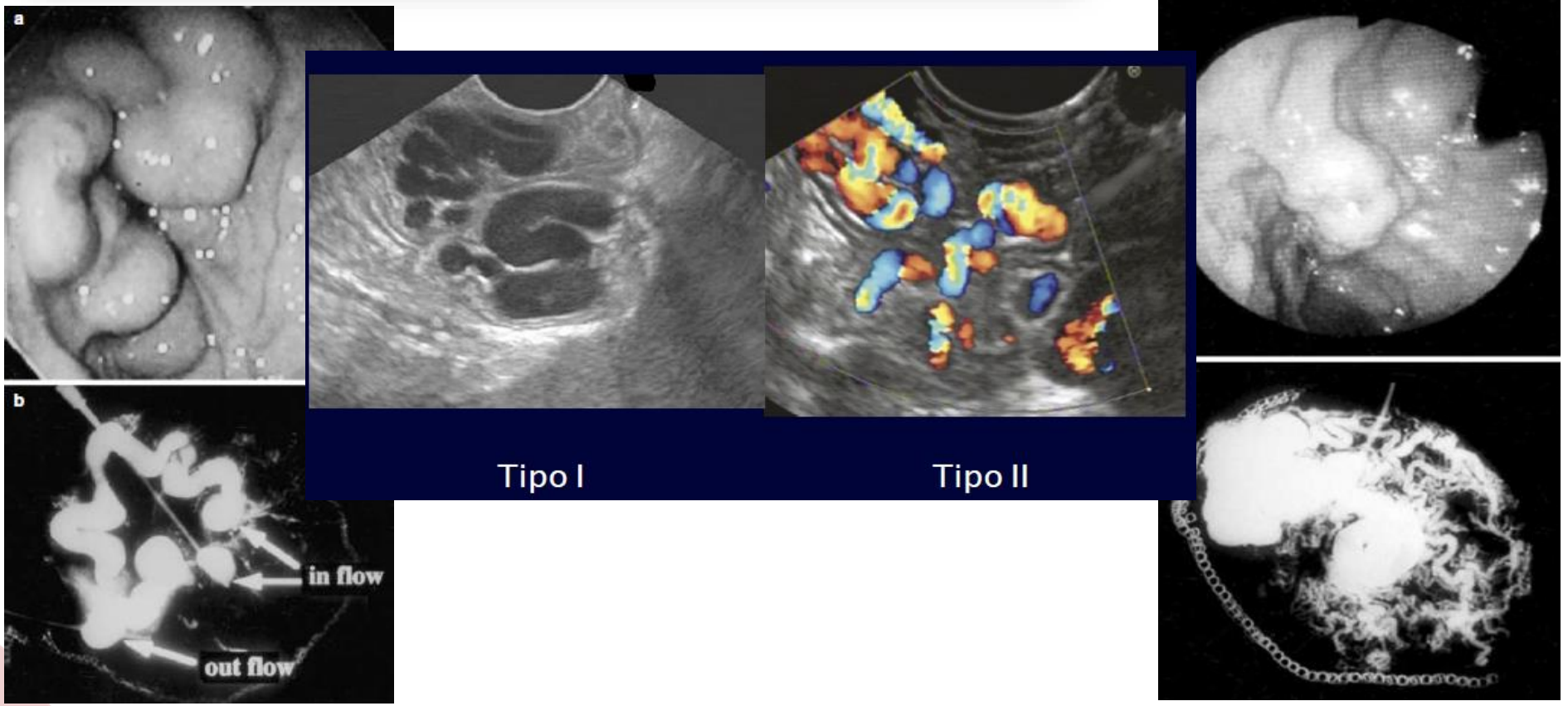
- El 85% de las VG tienen un shunt portosistémico ("descompresivo"). **Shunt gastro-renal.**

Martínez-González J. Rev Esp Enf Dig 2015

Clasificación de Arakawa

Pathology of fundic varices of the stomach and rupture

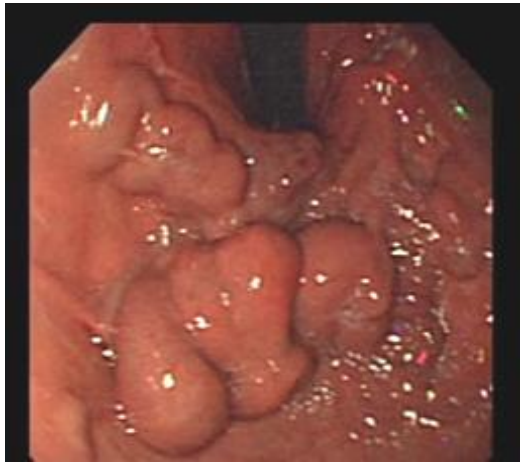
MASAHIRO ARAKAWA,* TAKAO MASUZAKI† AND KUNIO OKUDA‡



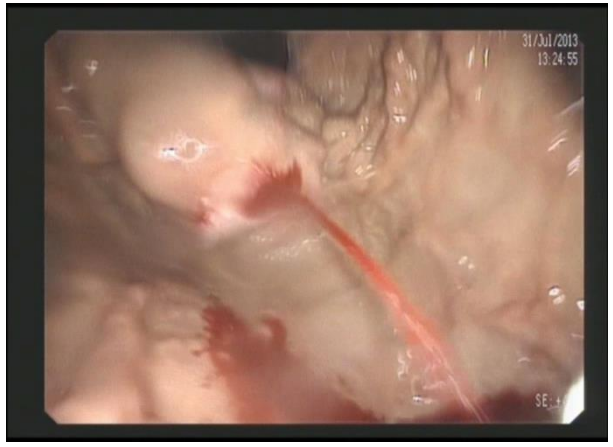
Journal of Gastroenterology and Hepatology (2002) 17, 1064–1069

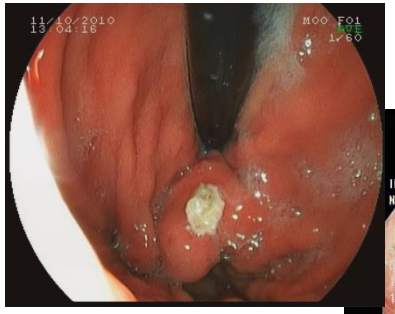
Escenarios clínicos

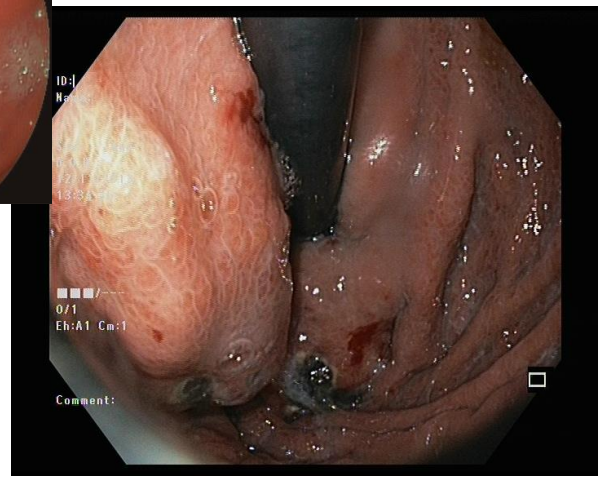
1. VARICES GÁSTRICAS QUE NO HAN SANGRADO



2. HEMORRAGIA AGUDA

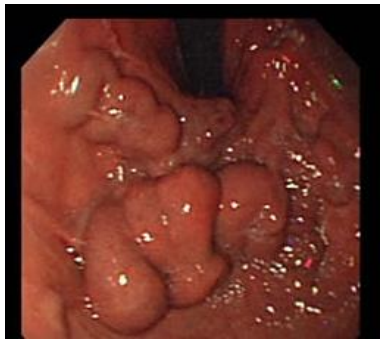






3. VARICES GÁSTRICAS QUE HAN SANGRADO

Tratamiento de la hemorragia por varices gástricas



Varices gástricas

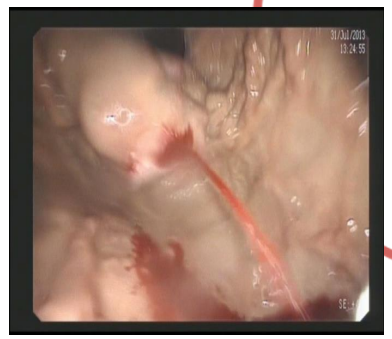
Sin hemorragia previa

Profilaxis primaria

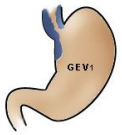
Beta-bloqueantes

Hemorragia aguda

Antibióticos
Drogas vasoactivas



Endoscopia < 12 h

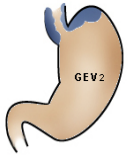


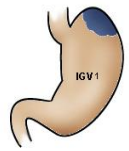
GOV1

Ligadura con bandas
Obliteración con pegamento

GOV2, IGV

Obliteración con pegamento





Position Paper

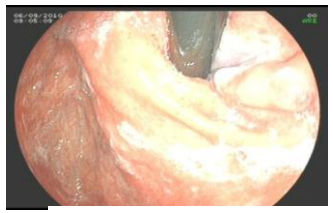
CrossMark

EASL JOURNAL OF HEPATOLOGY

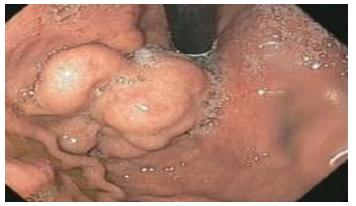
Expanding consensus in portal hypertension
Report of the Baveno VI Consensus Workshop: Stratifying risk and individualizing care for portal hypertension

Roberto de Franchis*, on behalf of the Baveno VI Faculty†

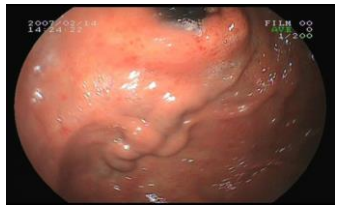
AASLD
AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES
HEPATOLOGY
PRACTICE GUIDANCE | 2017



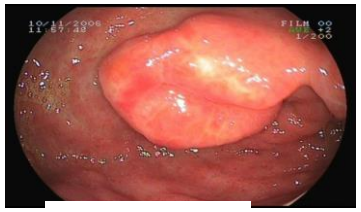
GOV1



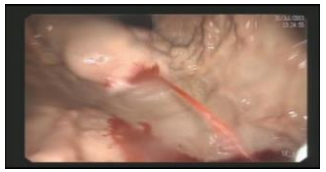
GOV2 / IGV1

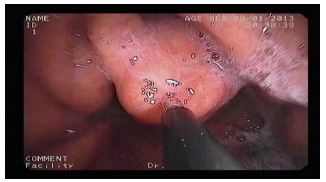


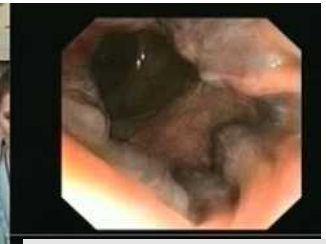
IGV1



IGV2







NEW METHODS

Endoscopy 18 (1986) 25–26

Endoscopic Obliteration of Large Esophagogastric Varices with Bucrylate

N. Soehendra, V.Ch. Nam, H. Grimm, and I. Kempeneers

Department of Surgery, University Hospital of Hamburg

Summary

We report on three patients with severe recurrent bleeding from large esophagogastric varices which could not be controlled by conservative treatment or sclerotherapy. In these cases the bleeding was successfully arrested by intravascular injection of Bucrylate.

Key-Words: Esophagogastric varices, Severe recurrent bleeding, Endoscopic Bucrylate obliteration

mended first. In a bleeding-free interval, i.e. after approximately six hours, most ruptured points can readily be recognized endoscopically. They appear as rounded necroses on the varices covered by blood clot or fibrin (Fig.). The Bucrylate injection must be done rapidly, after which the needle must be retracted immediately into the outer tube of the probe. In order to prevent the working channel of the endoscope from sticking together, no attempt at suction should be made during treatment. The probe is not be retracted, but removed together with the endoscope. The same probe should be used once for each single varix.

Tratamientos endoscópicos

Table I. Endoscopic treatments in acute fundic varices bleeding

Author, year (ref.)	*Design/treatment*	*n; Follow-up (m)*	*Type of varix*	*Active bleeding (%)*	*Initial hemostasis (%)*	*Rebleeding (%)*	*Mortality (%)*
Oho, 95 (21)	RCT (sclerosis^/glue*)	24/29; 14	GOV2 (45%) IGV1 (55%)	100	67/93	30/25	67/38
Sarin, 02 (22)	RCT (sclerosis^/glue*)	17/20; 15	IGV1 (76%) GOV2 (24%)	46	62/89	25/22	19/10
Lo, 01 (23)	RCT (band ligation/glue*)	29/31; 9/14	GOV1 (68%) GOV2 (24%) IGV1 (8%)	43	45/87	54/31	48/29
Tan, 06 (24)	RCT (band ligation/glue*)	48/49; 23/20	GOV1 (54%) GOV2 (26%) IGV1 (20%)	31/31	93/93	44/22.5	69/55

Published studies on endoscopic treatments with N-butyl-2-cyanoacrylate in acute fundic variceal bleeding. m: Months; n: Number of patients; NA: Not available; Obs: Observational study; RCT: Randomized controlled trial; Ref.: Reference. *N-butyl-2-cyanoacrylate (bucrylate) was the type of glue used. ^Sclerosis was performed with ethanol injection.

Martínez-González J. Rev Esp Enf Dig 2015

Table III. Characteristics of different types of cyanoacrylate available in the management of fundic varices

Trade name	*Manufacturer*	*Active component*	*Dosage*	*Lipidol dilution need*	*Polymerization*
Indermil®	Covidien	N-butyl-2-cyanoacrylate	0.5 cc	Yes	Fast
Histoacryl®	TissueSeal	N-butyl-2-cyanoacrylate	0.5 cc	Yes	Fast
Dermabond®	Ethicon	2-octyl-cyanoacrylate	0.5 cc	No	Slow
Glubran2®	GEM, Italia	N-butyl-2-cyanoacrylate	0.25 cc; 0.5 cc; 1 cc	No	Slow

+ metacriloxisulfato

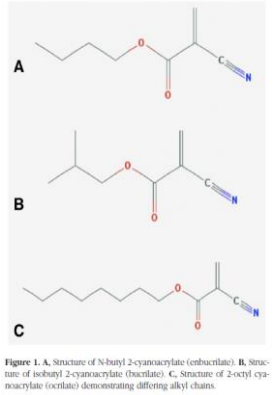


Figure 1. A, Structure of N-butyl 2-cyanoacrylate (enbucrilate). B, Structure of isobutyl 2-cyanoacrylate (bucrilate). C, Structure of 2-octyl cyanoacrylate (ocrilate) demonstrating differing alkyl chains.

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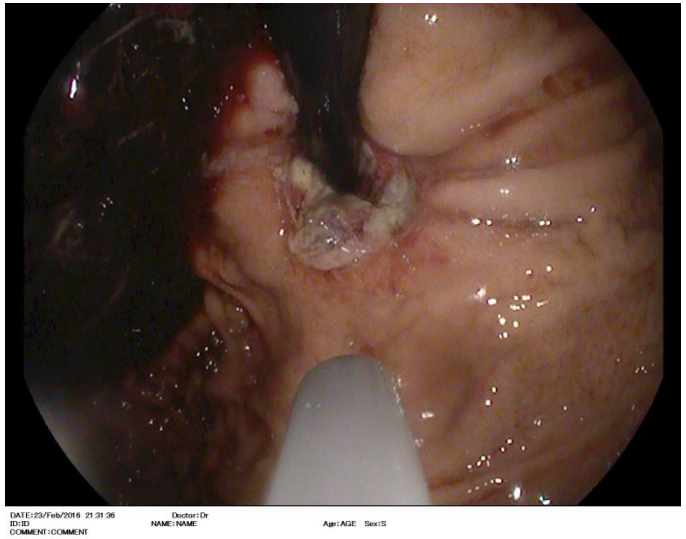
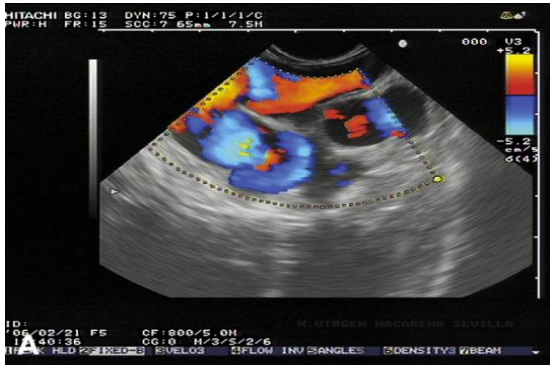
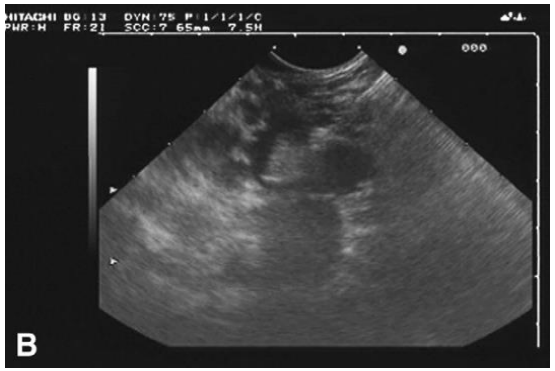
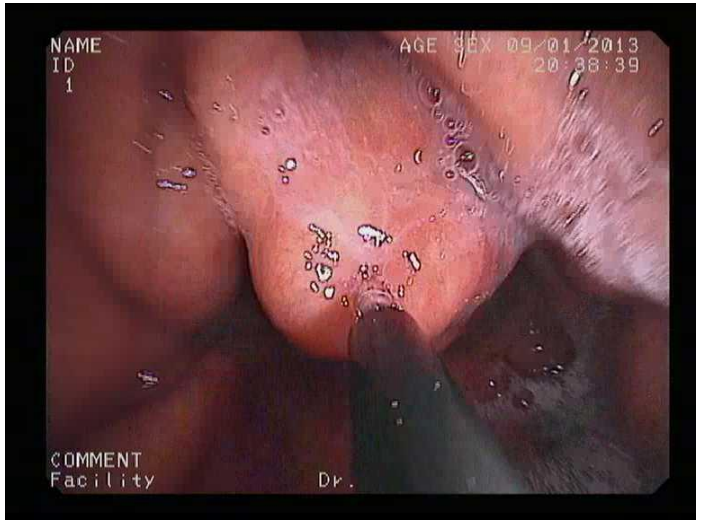
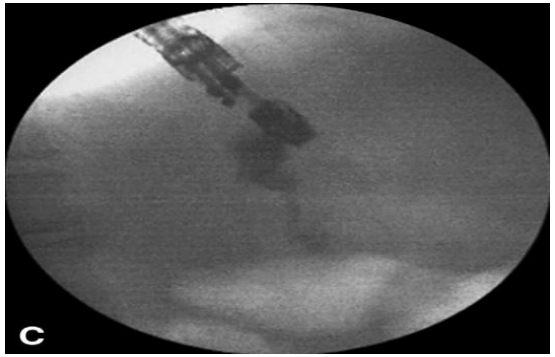
Métodos de inyeccción de cianoacrilato







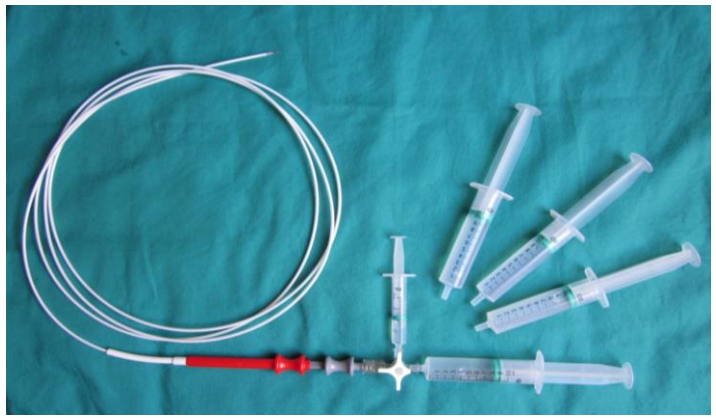


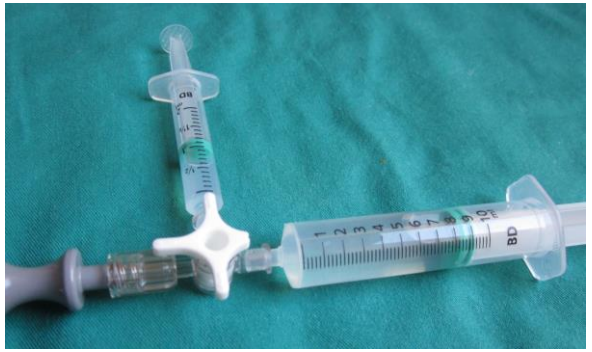


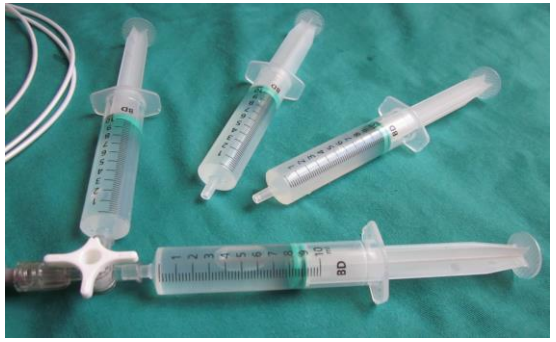
MATERIAL

1. Needle catheter (2 or 3) */ Aguja USE-PAAF 22G / 19 G (coil)*
2. Key of 3 connections
3. Syringe of 10 ml completely filled with distilled water (2-3 syringes)
4. Syringe of 2 ml filled with 0.5-1 ml of CA (as many syringes as CA phials will be injected)
5. Conventional scissors
6. Acetone
7. Protective glasses for all staff

TÉCNICA





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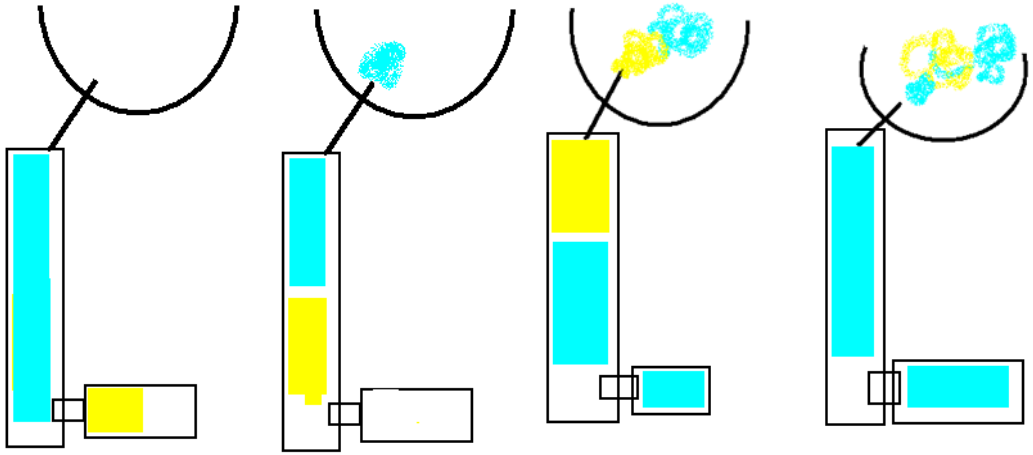
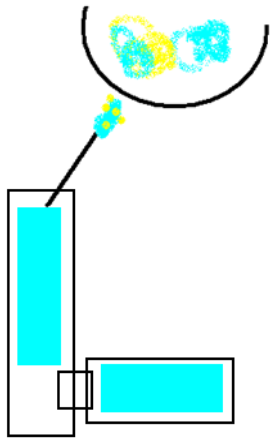
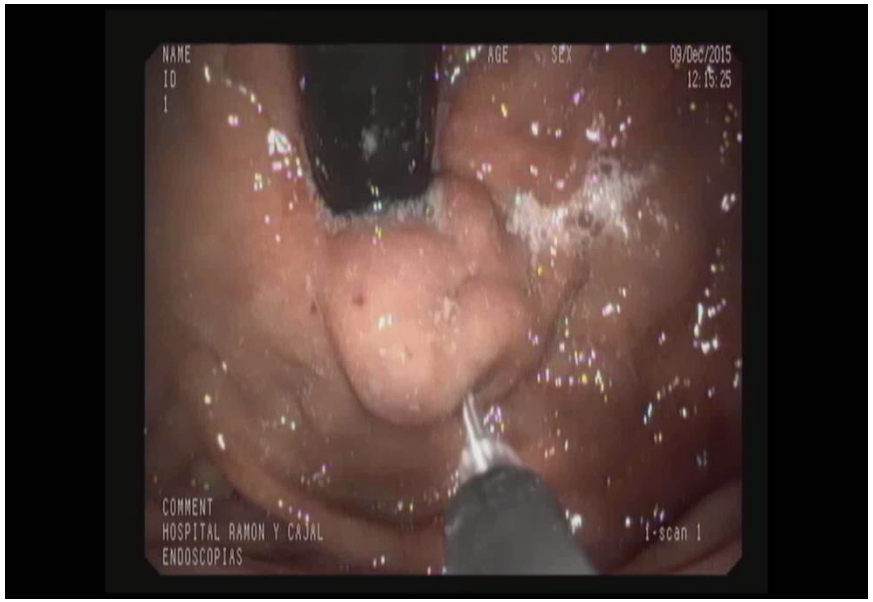
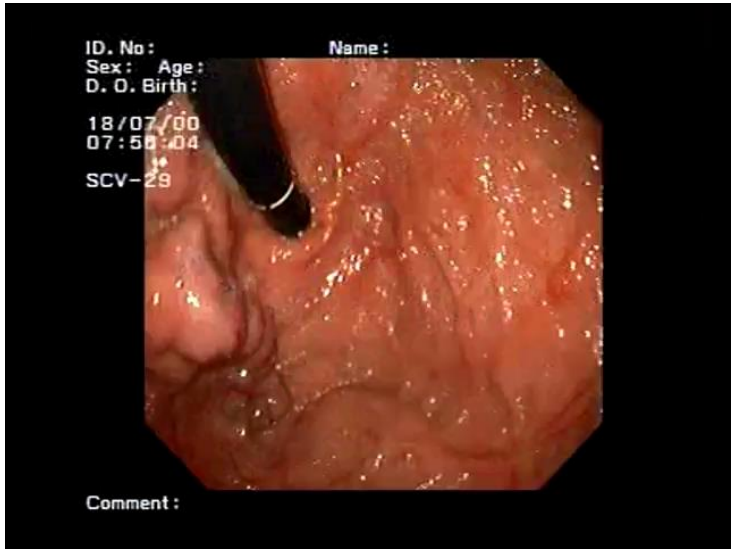


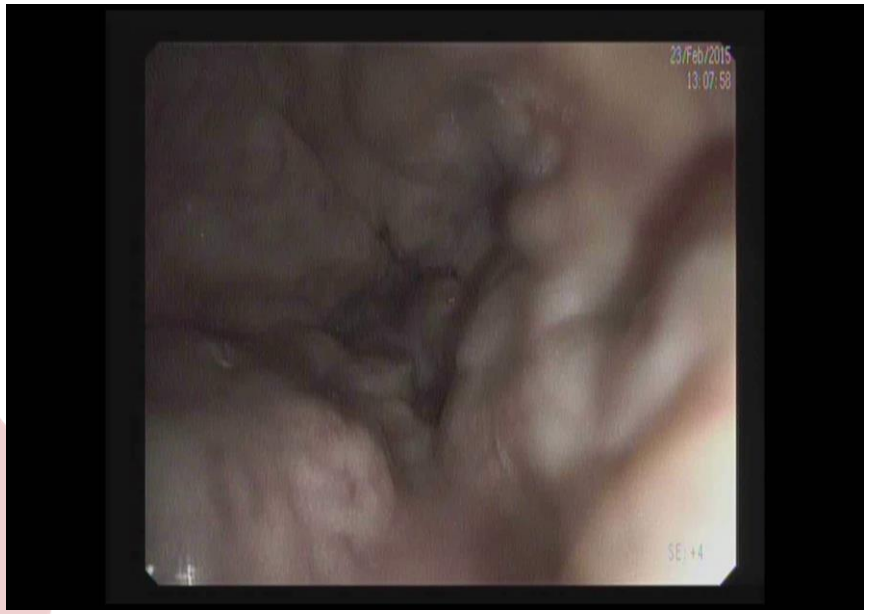


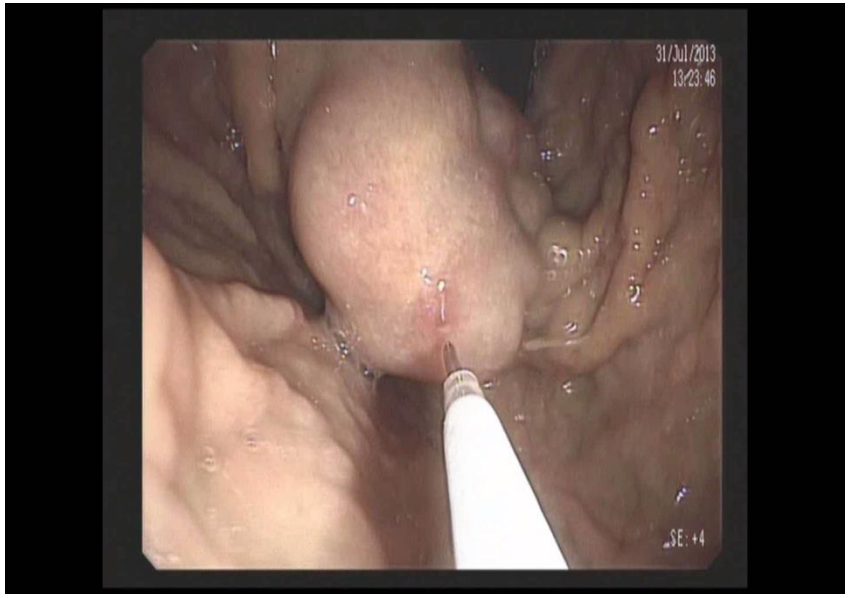
PROCEDIMIENTO ENDOSCÓPICO CONVENCIONAL





Seewald S. GIE





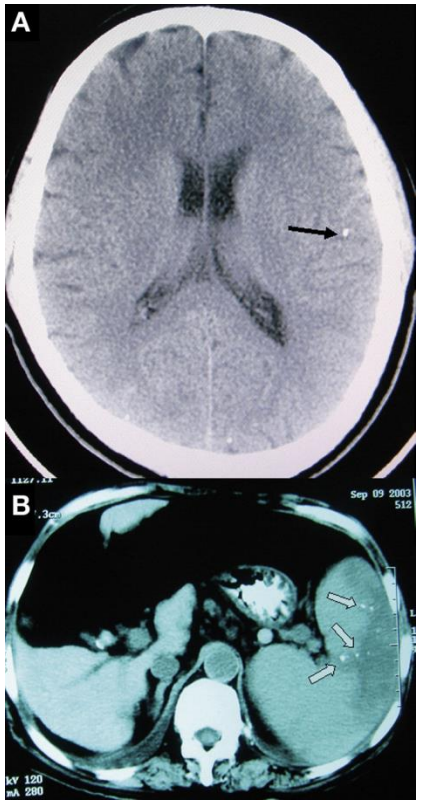
SEGURIDAD

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2010;8:760–766

Low Incidence of Complications From Endoscopic Gastric Variceal Obturation With Butyl Cyanoacrylate

LIU–FANG CHENG,* ZHI–QIANG WANG,* CHANG–ZHENG LI,* WU LIN,‡ ANTHONY E. T. YEO,§ and BO JIN‖

Análisis retrospectivo **753** pacientes (1996-2006)



-Resangrado (3 meses) 33 **(4,4%)**

- Sepsis 10 **(1,3%)**

- Embolismos 5 (1cerebral, 1 pulmonar, 3 esplénicos) **(0,7%)**

- 1 úlcera gástrica **(0,1%)**

- 1 hemoperitoneo **(0,1%)**

- **MORTALIDAD 0,53%** (3 sepsis y 1 hemorragia)

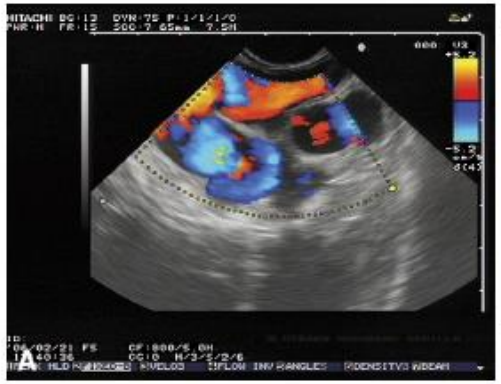
PROCEDIMIENTO con ECOENDOSCOPIA

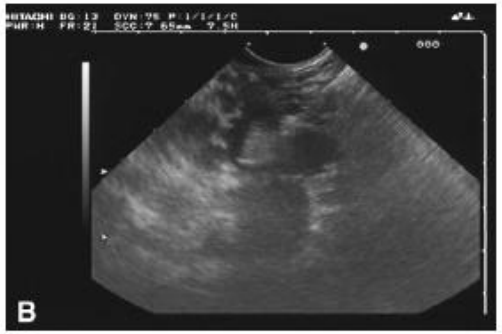
EUS-guided injection of cyanoacrylate in perforating feeding veins in gastric varices: results in 5 cases

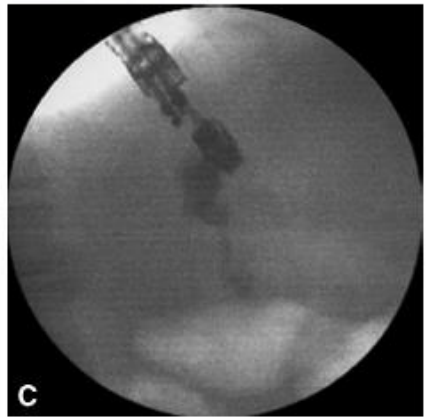
Rafael Romero-Castro, MD, PhD, Francisco J. Pellicer-Bautista, MD, PhD, Manuel Jimenez-Saenz, MD, PhD, Francisco Marcos-Sanchez, MD, PhD, Angel Caunedo-Alvarez, MD, Carlos Ortiz-Moyano, MD, PhD, Manuel Gomez-Parra, MD, PhD, Juan M. Herrerias-Gutierrez, MD, PhD

Seville, Spain

Volume 66, No. 2 : 2007 GASTROINTESTINAL ENDOSCOPY

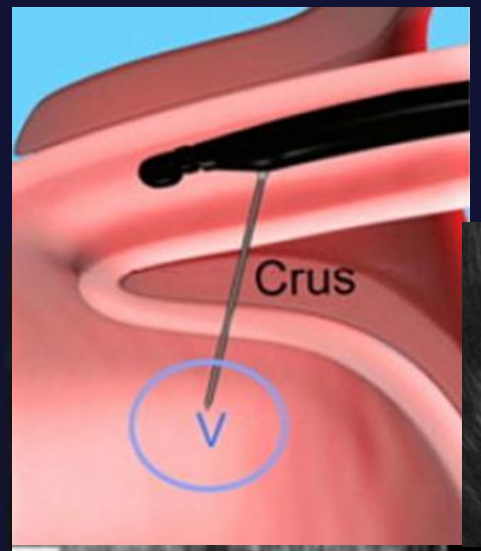


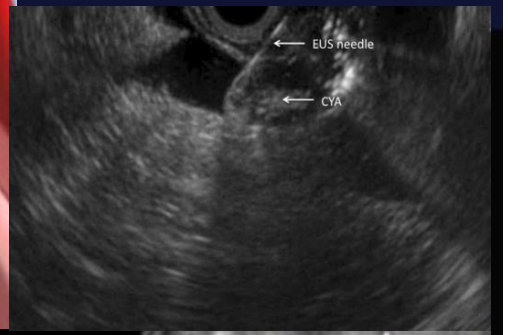


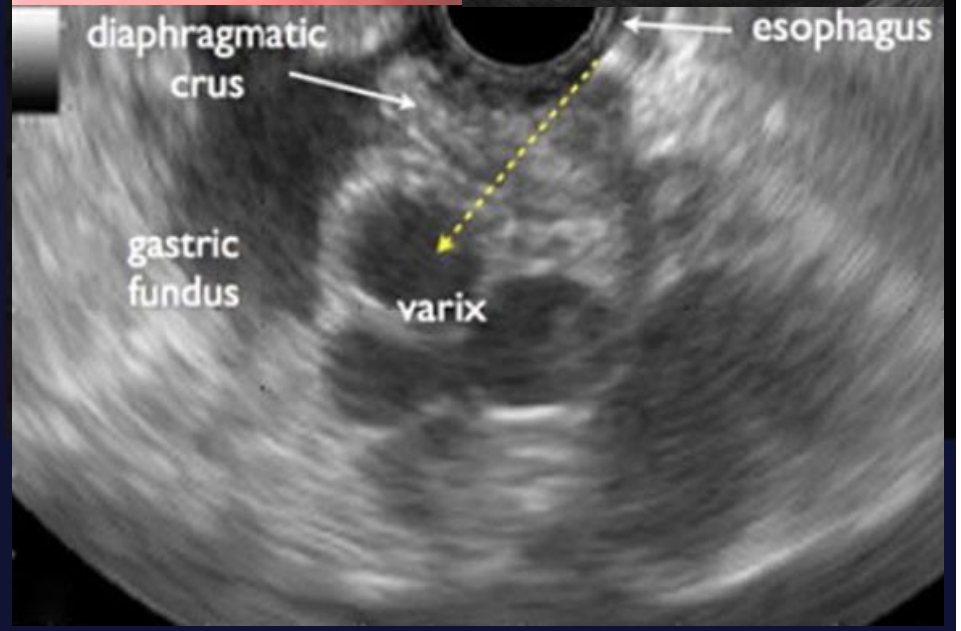


Inyección CYA guiada por USE

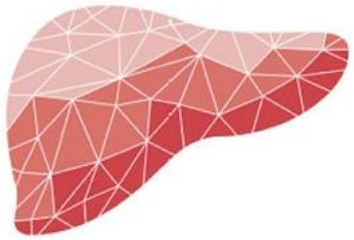
- Aguja 22G purgada con Glucosmon®.
- CYA con Lipiodol 1:1.
- Evitar movimientos laterales con la aguja dentro de la VF.
- Comprobar perforante aferente: contraste o doppler.
- Inyección 1 mL de CYA por encima de la capa muscular propia.
- Comprobar oclusión VF con doppler.





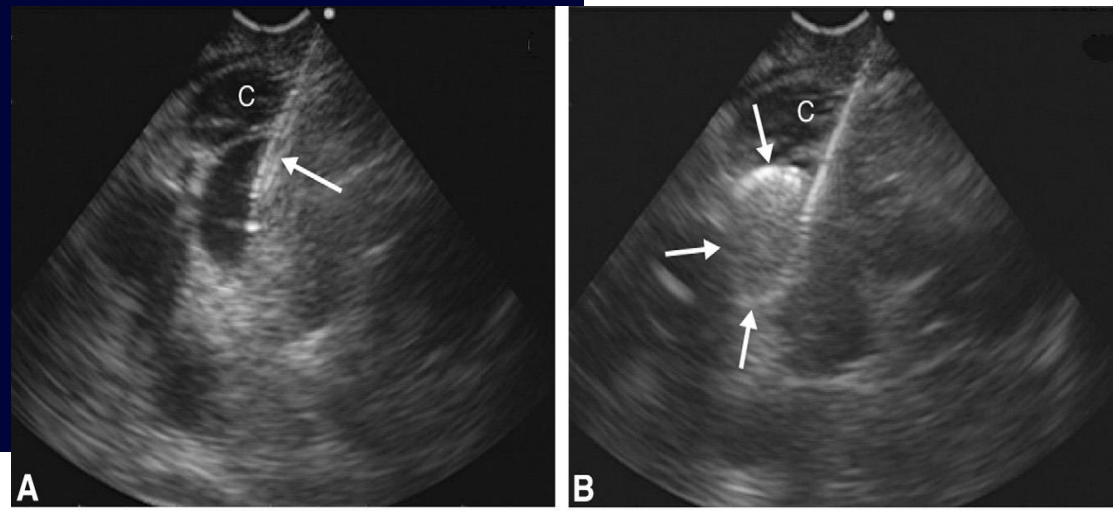


Vila J. Especialización en Ultrasonografía Endoscópica Avanzada 2016



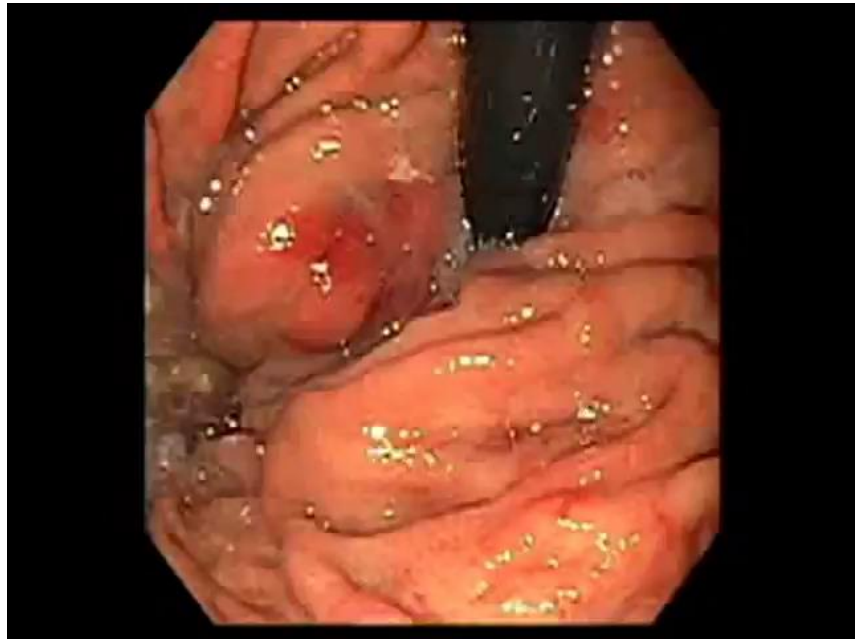
Inyección Coils guiada por USE

- Aguja 19G.
- Coils Ø 20% mayor que la variz:
  - ✓ 8-20 mm de Ø.
- Retirar estilete y empujar coil con el mismo.
- Comprobar inserción intravaricosa del coil.
- Tantos coils como sean necesarios.

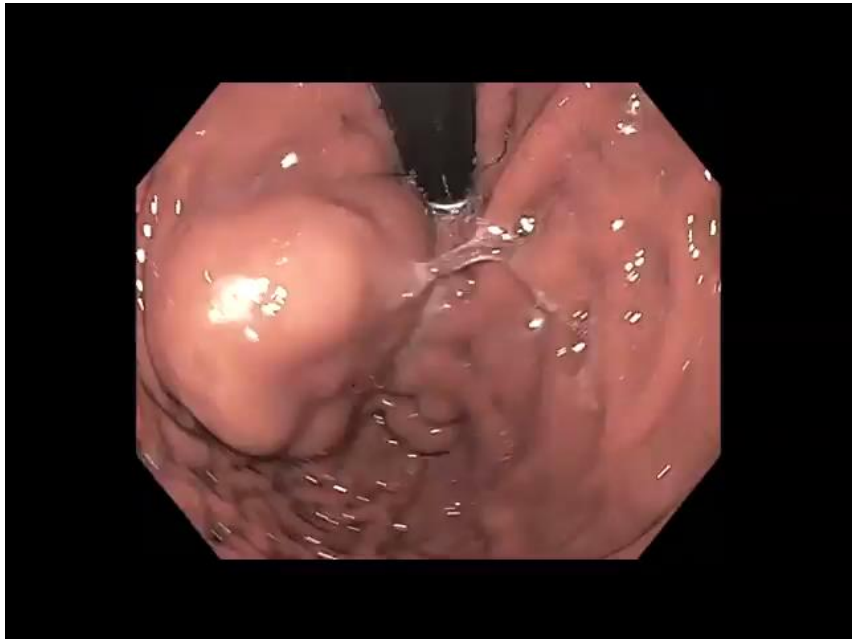


Vila J. Especialización en Ultrasonografía endoscópica avanzada 2016

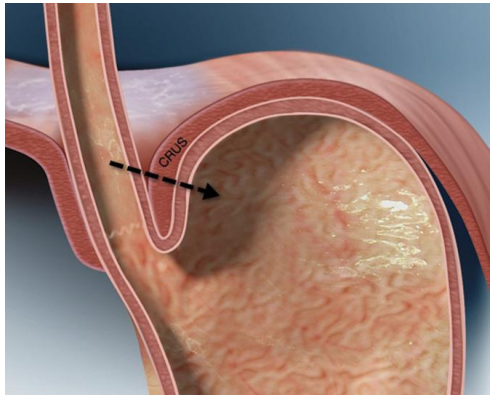
PROCEDIMIENTO ENDOSONOGRÁFICO



KF Binmoeller . Gastrointestinal Endosc2011



KF Binmoeller . Gastrointestinal Endosc2011



Autor	n	Material	Eficacia	Efectos Adversos
Romero Castro GIE 2007	5	22G CYA+Lipiodol	Erradicación: 100% 1,6 sesiones (1-2)	No
Levy MJ GIE 2008	1 (Variz Anastomótica)	22G Microcoils	Erradicación: 100% 2 sesiones	Un resangrado
Romero Castro Endoscopy 2010	4	19G Coils 0,035"	Erradicación: 75% 1,5 sesiones (1-3)	No
Binmoeller K GIE 2011	30	1 Coil+1 mL CYA	Erradicación: 100% 1,3 sesiones (1-3)	Recurrencia: 4% HD por VE: 16%
Romero Castro GIE 2013	30	19 pacientes 22G CYA(±Lipiodol) 11 pacientes 19G Coils	Erradicación: 97% 1,4 sesiones (1-3)	CYA: 9 embolismos pulmonares, 1 Dolor torácico, 1 Fiebre Coil: 1 HD VE
Gubler C Scand J Gastroenterol 2014	40	22G CYA+Lipiodol	Erradicación: --- 1,4 sesiones (1-7)	2 bacteriemias, 1 sangrado leve
Fuji-Lau Surg Endosc 2015	14: 1 esofagogástrica, 5 VG, 2 VE, 3 duodenal, 3 colédoco	22G CYA±Coil 0,018"	Erradicación: 57% 71% éxito clínico	1 migración hepática de coil 4 exitus por otras causas
Bhat YM GIE 2016	152	19G Coil+CYA	Erradicación: 93%	Resangrado: 3% Dolor abdominal leve: 3% Embolia Pulmonar sintomática: 1% Resangrado úlcera: 4%

POSIBLES VENTAJAS DE LA INYECCIÓN CON ECOENDOSCOPIA

- Mayor precisión
  - Evitar inyección extravariceal/intramural
  - Localización y punción de vaso perforante?

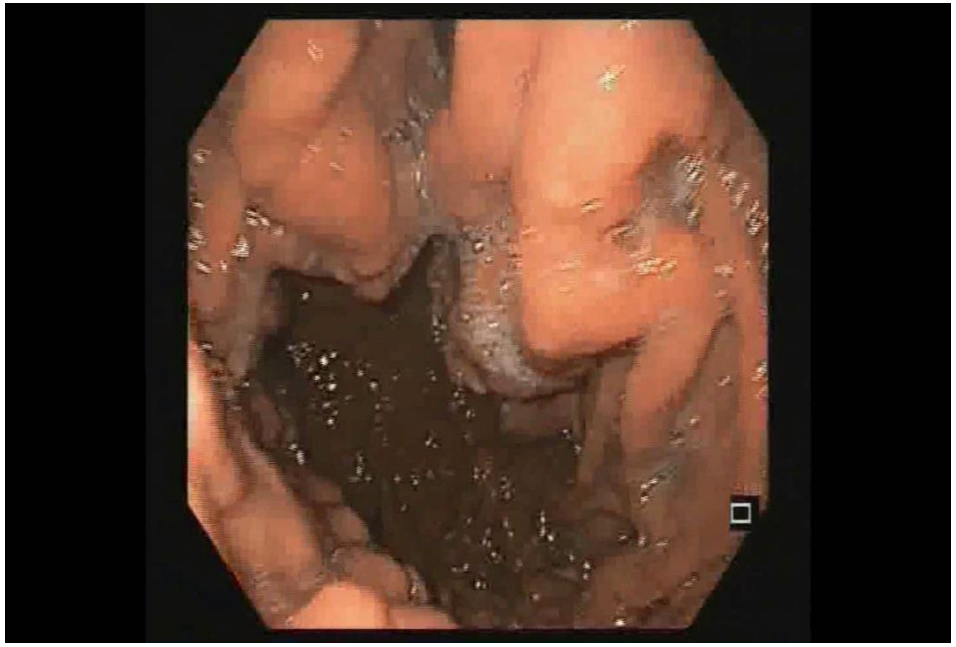
- Terapéutica en situaciones con visión endoscópica limitada

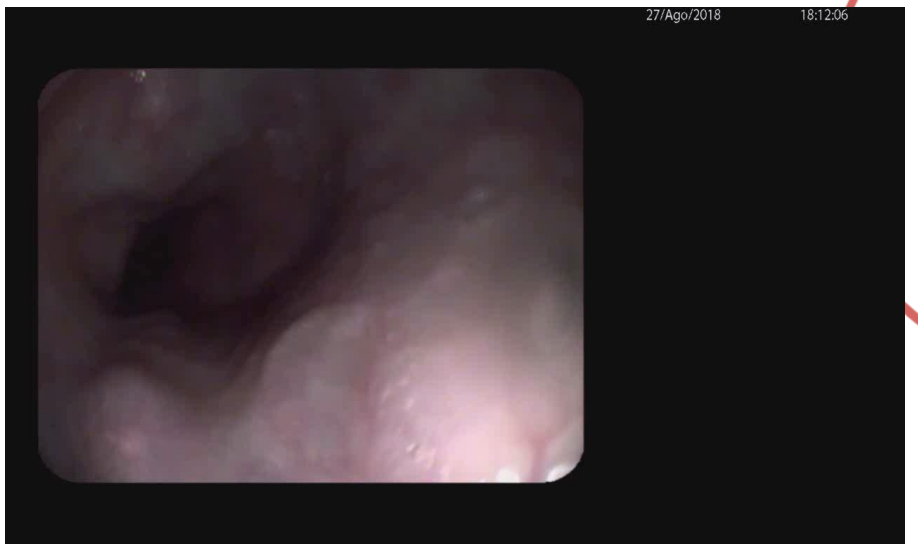
1. Bleeding after glue injection in gastric varices. Rebleeding from a glue ulcer.
   Sharma M, Goyal A.
   Gastroenterology. 2012 Jun;142(7):e1-2. doi: 10.1053/j.gastro.2011.11.043. No abstract available.
   PMID: 22549007
   Similar articles Remove from clipboard

2. EUS-guided cyanoacrylate injection for treatment of endoscopically obscured bleeding gastric varices.
   Tang RS, Teoh AY, Lau JY.
   Gastrointest Endosc. 2016 May;83(5):1032-3. doi: 10.1016/j.gie.2015.10.043. No abstract available.
   PMID: 26551730
   Similar articles Remove from clipboard

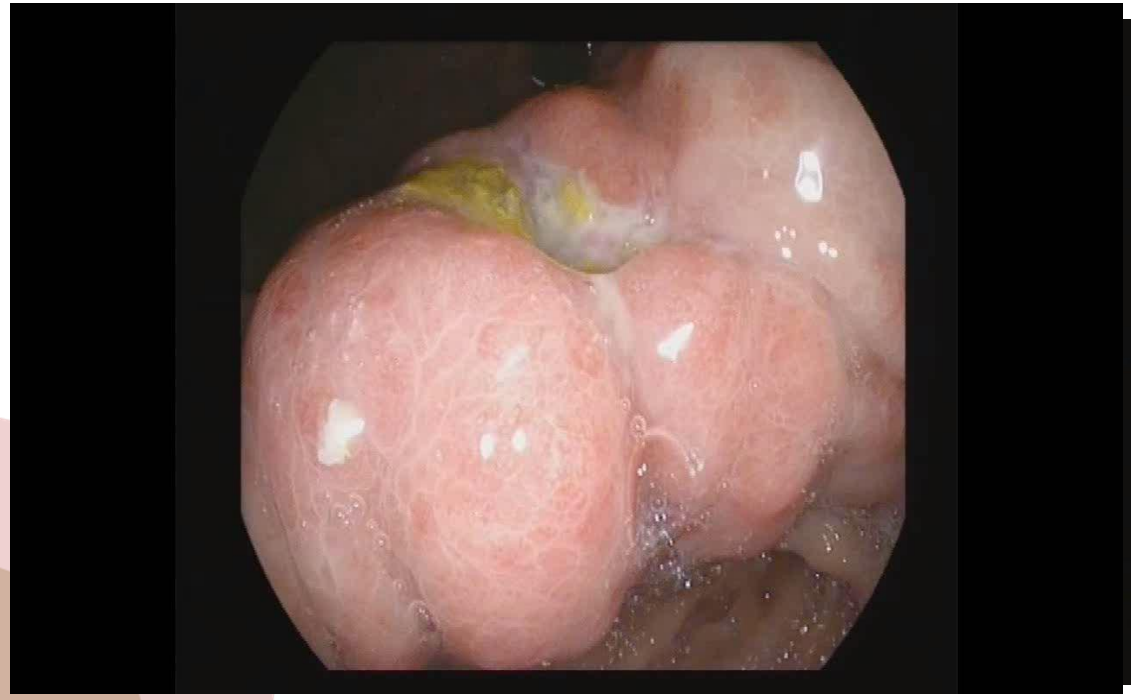
3. Application of endoscopic US-guided tissue adhesive injection as a rescue therapy for post-tissue adhe related gastric wall bleeding.
   Lin MS, Liao SC, Peng YC, Yang SS, Yeh HZ, Chang CS.
   Gastrointest Endosc. 2014 Mar;79(3):514-5. doi: 10.1016/j.gie.2013.10.018. No abstract available.
   PMID: 24262635
   Similar articles Remove from clipboard

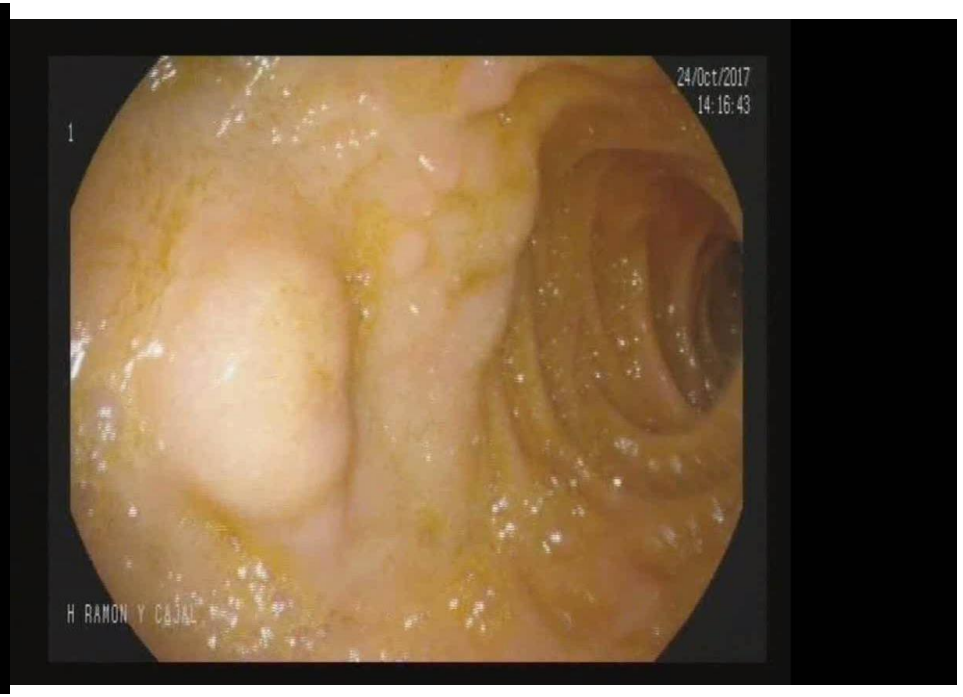
- Inyección de coils





UTILIDAD DE LA USE EN EL DIAGNÓSTICO DIFERENCIAL





Published online: 06.02.2020

¿ENDOSCOPIA O USE?

Review

Thieme

Efficacy and safety of endoscopic ultrasound-guided therapy versus direct endoscopic glue injection therapy for gastric varices: systematic review and meta-analysis

23 estudios (n=851)

28 estudios (n= 3467)

Intervention/out-comes, pooled rate, % (95%CI, I^2)	All EUS modalities	EUS-glue	EUS-coil	EUS-coil/glue	END-glue (comparator group)
Treatment efficacy	93.7 (89.5–96.3, 53.7) 29 cohorts	91 (80–96.2, 40) 9 cohorts	84.2 (54.5–96, 6.5) 3 cohorts	96.7 (93–98.5, 55) 14 cohorts	91.4 (82.8–95.9, 97) 28 cohorts; *P*=0.4
Obliteration of gastric varices	84.4 (74.8–90.9, 77) 21 cohorts	90 (71.3–97, 0) 5 cohorts	N/C	86.2 (75.5–92.7, 74) 12 cohorts	62.6 (42.6–79.1, 97); 13 cohorts; *P*=0.02
Recurrence of gastric varices	9.1 (5.2–15.7, 32) 16 cohorts	15 (8.8–24.5, 0) 5 cohorts	N/C	5.2 (2.6–9.8, 0) 6 cohorts. *P*=0.01	18 (11.4–27.2, 89) 8 cohorts; *P*=0.06
Early rebleeding	7 (4.6–10.7, 0) 20 cohorts	6 (3.1–11.1, 0) 8 cohorts	N/C	7.7 (3.9–14.9, 46) 7 cohorts	5 (3.3–7.4, 72) 23 cohorts; *P* =0.7
Late rebleeding	11.6 (8.8–15.1, 22) 26 cohorts	16.3 (9.7–26.1, 65) 8 cohorts	16.8 (7.3–34.1, 0) 3 cohorts)	9.2 (6.4–13, 0) 12 cohorts	17 (12.3–22.9, 92) 27 cohorts; *P*=0.1

Mohan Babu P et al. EUS-guided therapy vs. glue injection therapy for gastric varices … Endoscopy

Combination therapy *versus* monotherapy for EUS-guided management of gastric varices: A systematic review and meta-analysis

Thomas R. McCarty, Ahmad Najdat Bazarbashi, Kelly E. Hathorn, Christopher C. Thompson, Marvin Ryou
Division of Gastroenterology, Hepatology and Endoscopy, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

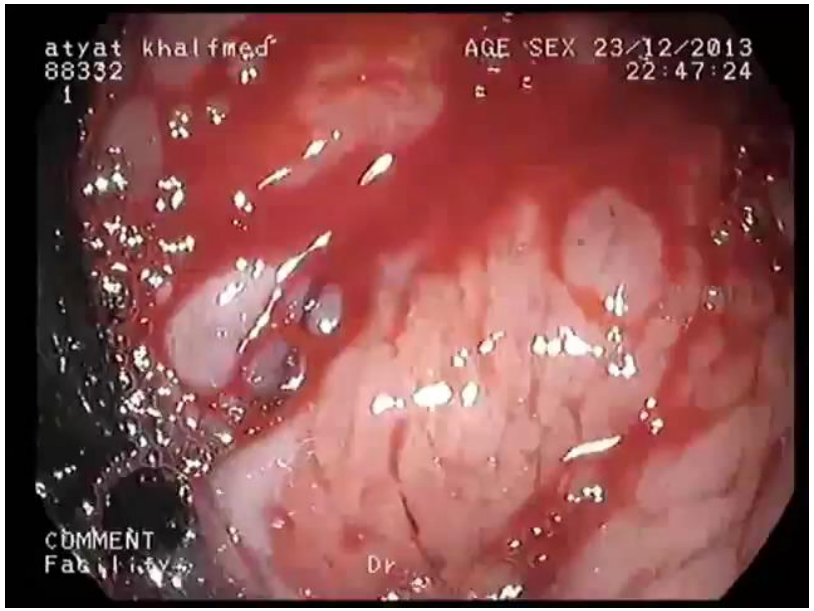
11 estudios (n=536)

- *Sólo Cianoacrilato 234* *- Sólo coil 46*
- *Cianoacrilato + coil 240*

Comparison of treatments	Technical success	Clinical success	Rate of adverse events	Rate of reintervention	Rate of re-bleeding
EUS CYA alone *versus* EUS CYA + Coil (*P*)	97% *versus* 100% (<0.001)	96% *versus* 98% (<0.001)	21% *versus* 10% (<0.001)	26% *versus* 15% (<0.001)	30% *versus* 14% (<0.001)

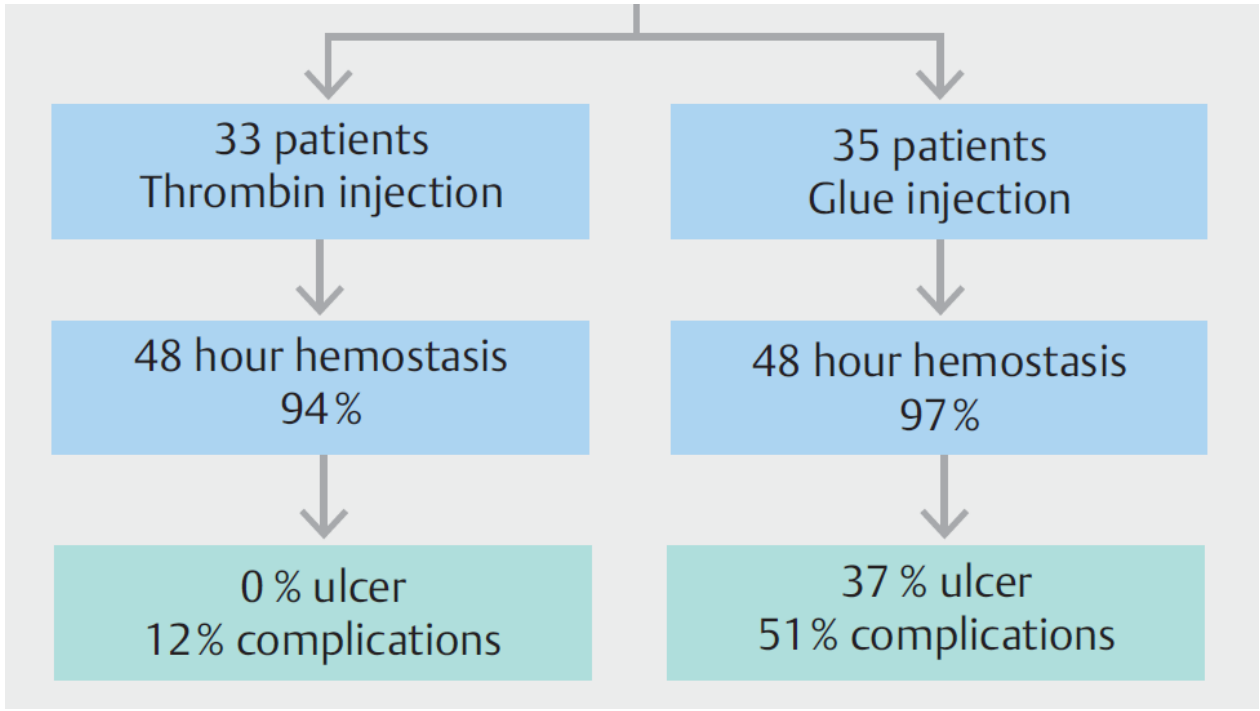
OTROS MÉTODOS DE TRATAMIENTO ENDOSCÓPICO

Early application of haemostatic powder added to standard management for oesophagogastric variceal bleeding: a randomised trial



Ibrahim M. Endoscopy 2014 ;46(Suppl):E263.

A prospective, randomized trial of thrombin versus cyanoacrylate injection in the control of acute gastric variceal hemorrhage



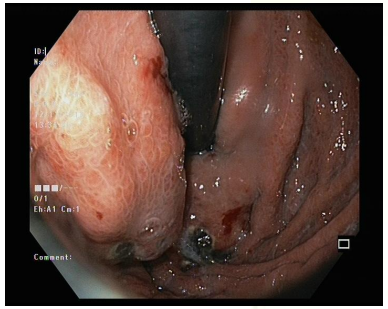
Lo GH. Endoscopy 2020

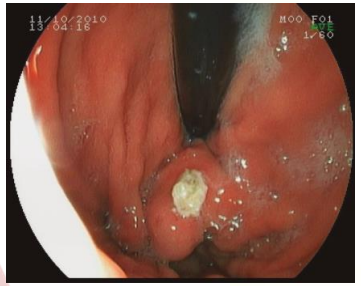
3. VARICES GÁSTRICAS QUE HAN SANGRADO

EUS-guided injection of cyanoacrylate for bleeding gastric varices

Yuk Tong Lee, MB, ChB, MRCP, Francis K. L. Chan, MD, FRCPI, Enders K. W. Ng, MD, FRCS, Vincent K. S. Leung, MBBS, MRCP, Kai Bo Law, MB, ChB, FRCS, Man Yee Yung, BN, S. C. Sydney Chung, MD, FRCP, FRCS, Joseph J. Y. Sung, MD, PhD, FRCP, FACG

Hong Kong, China



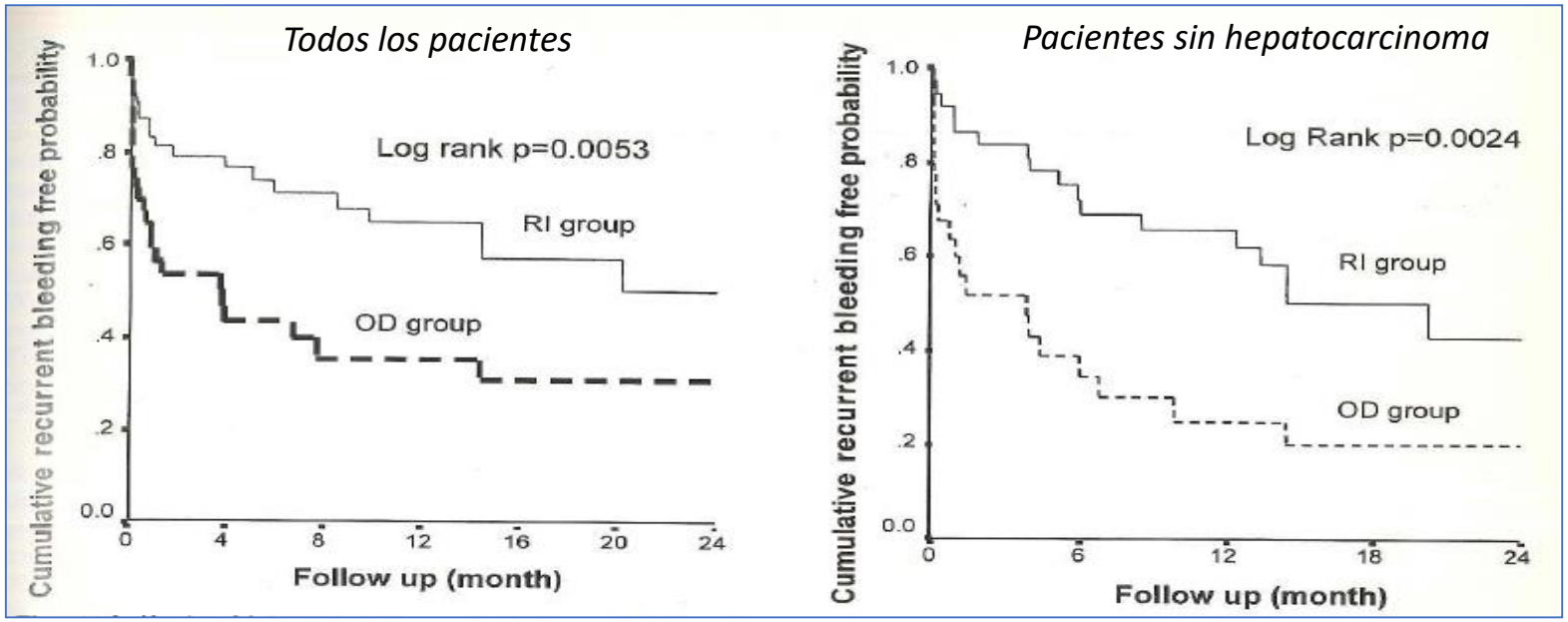


Background: Bleeding gastric varices is a highly fatal condition. Recurrent bleeding after hemostasis achieved by endoscopic methods is common, and obliteration of gastric varices is difficult to assess. Our aim was to investigate the use of endosonography (EUS) in monitoring cyanoacrylate injection to obliterate gastric varices.

Methods: Patients who presented with bleeding gastric varices were treated with bolus injection(s) of cyanoacrylate (0.5 mL cyanoacrylate mixed with 0.7 mL Lipiodol) until bleeding was controlled; 47 patients received "on-demand" injection only in response to recurrent bleeding (on-demand group). Another group of 54 patients underwent biweekly EUS followed by repeated injection of cyanoacrylate (repeated-injection group) until all gastric varices were obliterated. The primary outcome was recurrent bleeding–free interval and survival rate.

Results: The two groups of patients were comparable demographically. Although the rates of early (≤48 hour) bleeding recurrence were similar with repeated or on-demand injection (7.4% versus 12.8%, $p = 0.5$), late recurrence of bleeding (>48 hour) was significantly reduced in the repeated-injection group (18.5% versus 44.7%, $p = 0.0053$, odds ratio 0.28 (95% CI [0.12, 0.69]). Cumulative probability of recurrent bleeding–free interval was higher in the repeated-injection than the on-demand group (log-rank test, $p = 0.0053$). There was a numeric trend toward improved survival in the repeated-injection group.

Conclusion: Gastric varices obliteration with cyanoacrylate under EUS monitoring reduces recurrent bleeding and may improve survival. (Gastrointest Endosc 2000;52:168-74.)



Resangrado: Inyecciones repetidas 18,5% vs a demanda 44,7%

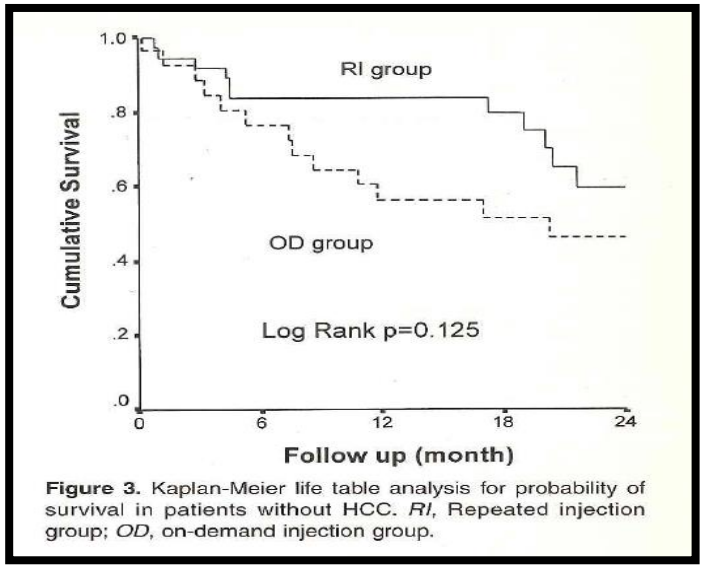
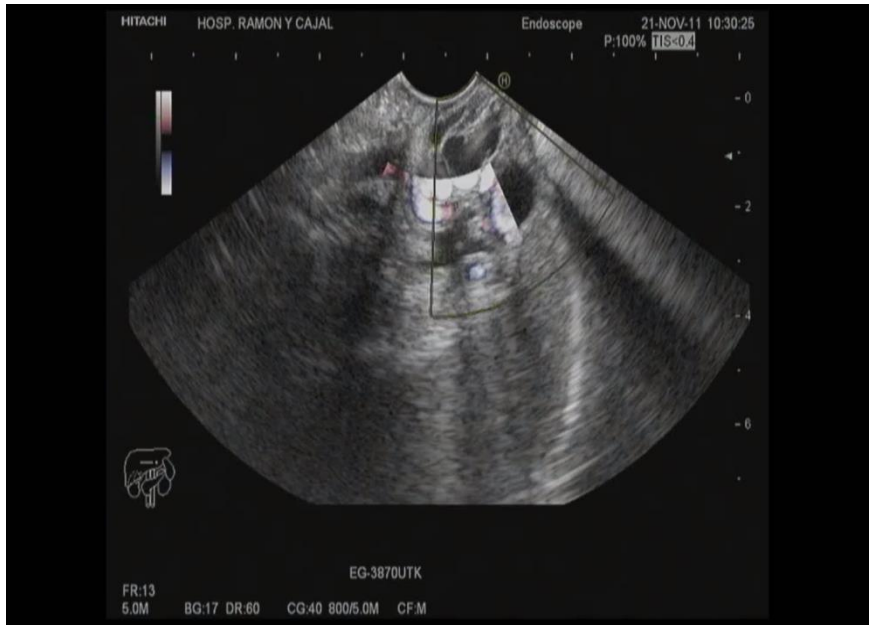
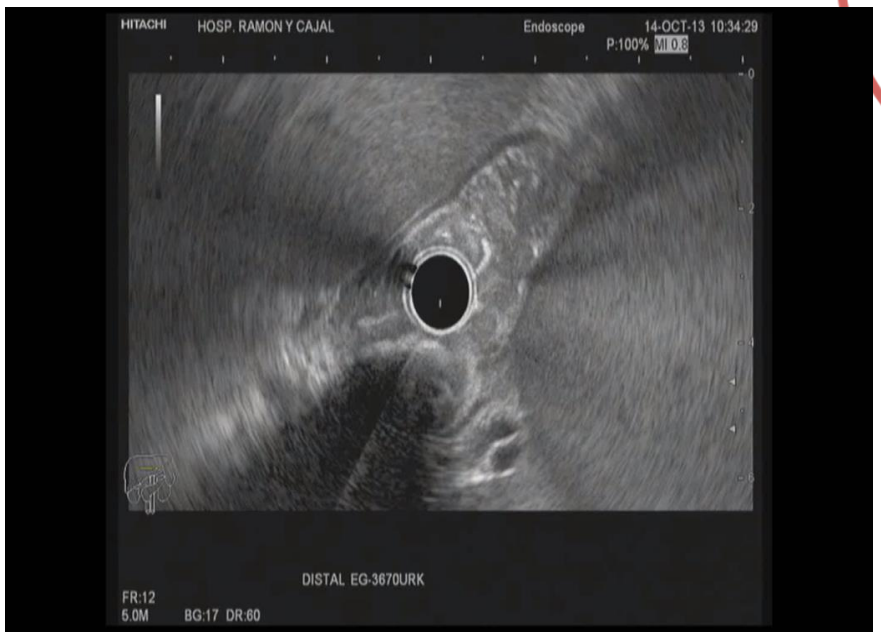


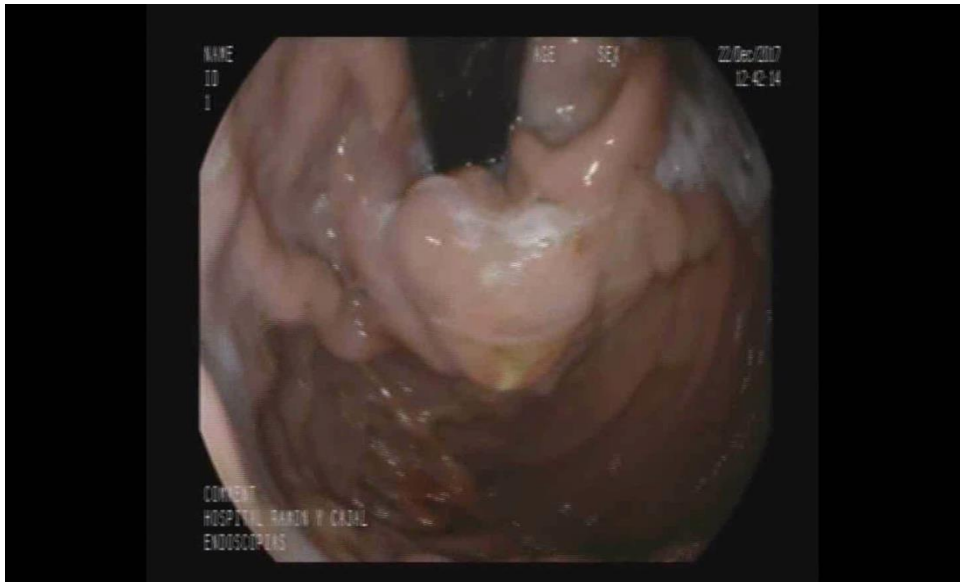
Figure 3. Kaplan-Meier life table analysis for probability of survival in patients without HCC. *RI*, Repeated injection group; *OD*, on-demand injection group.

Lee YT. Gastrointestinal Endosc 2000

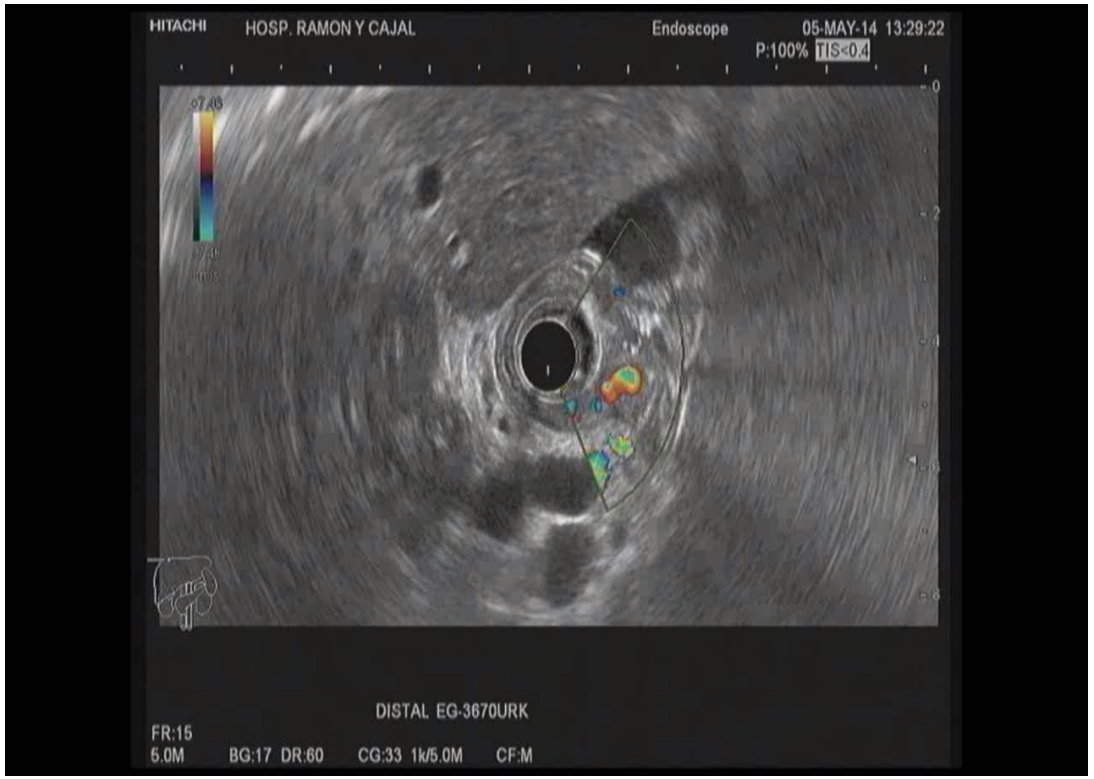
CONTROL TRAS TRATAMIENTO MEDIANTE **USE** TRATAMIENTO

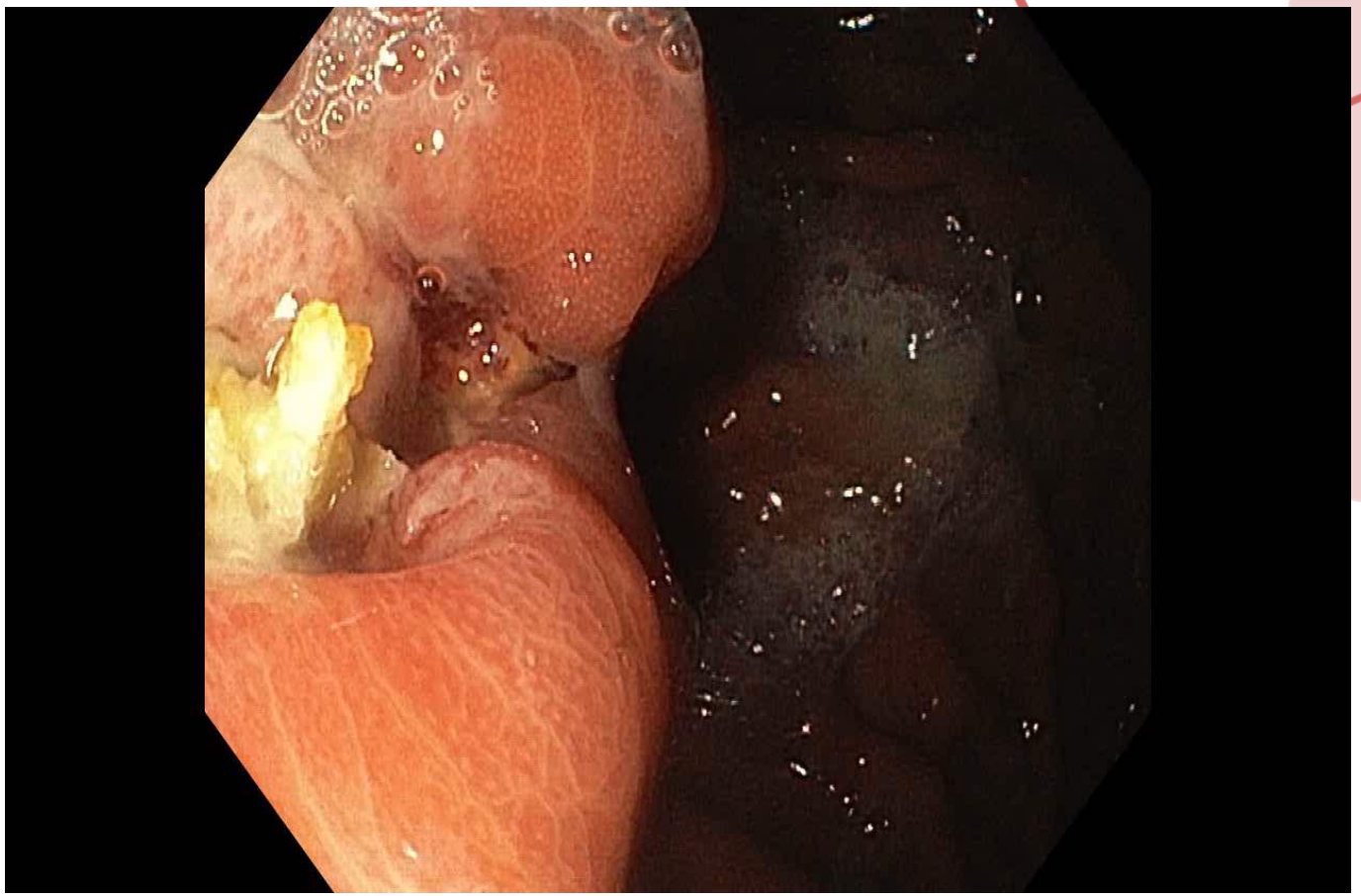




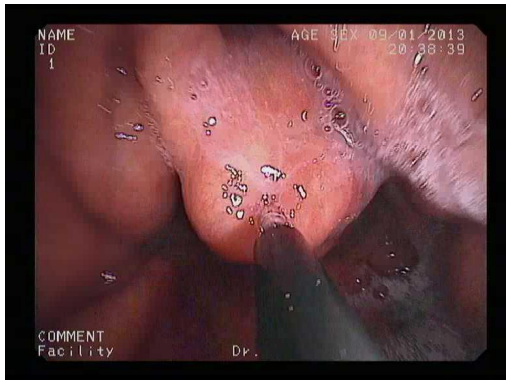


RETRATAMIENTO ENDOSCÓPICO





¿ENDOSCOPIA O USE PARA INYECCIÓN DE CIANOACRILATO?



DIGESTIVO
RAMON Y CAJAL
MADRID

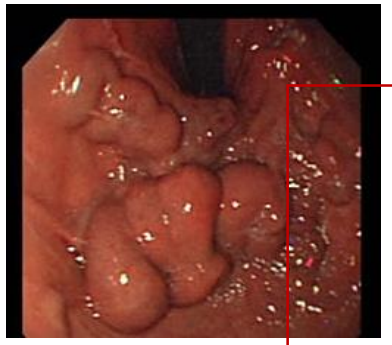
*… procedimiento **efectivo** en el control de la hemorragia por VG*

*… **fácil de aplicar** en la endoscopia urgente y **seguro***

*… la **inyección mediante ecoendoscopia** puede ser especialmente útil en situaciones especiales (sangrado activo/retratamientos)*
y permite introducción de coils
*… el **tratamiento ecoendoscópico combinado** con Inserción de coil + cianoacrilato podría ser la estrategia más eficaz y segura*

*… utilidad de la **ecoendoscopia** seguimiento y diagnóstico diferencial*

Tratamiento de la hemorragia por varices gástricas



Varices gástricas

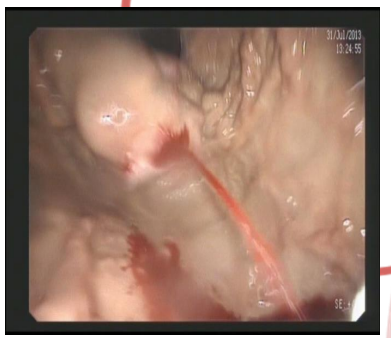
Sin hemorragia previa

Profilaxis primaria

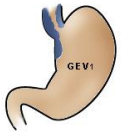
Beta-bloqueantes

Hemorragia aguda

Antibióticos
Drogas vasoactivas



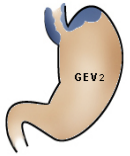
Endoscopia < 12 h

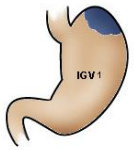


GOV1

Ligadura con bandas
Obliteración con pegamento

GOV2, IGV





Obliteración con pegamento

Control

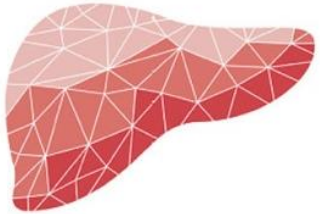
NO

TIPS ± embolización

SI

Profilaxis secundaria

Continuar inyecciones adhesivos tisulares + beta-bloqueantes



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