XXVIII IFSO World Congress

9-12 September 2025 | Santiago, Chile

SADI-S: STANDARDIZED APPROACH AND TECHNICAL CONSIDERATIONS

Presenter

Luis Ocaña-Wilhelmi (Spain)

Lecture Time

08:12 - 08:24

0180 - OAGB AND SADI-S (ID 11)

Session Type

Parallel Session

Date

Wed, 10.09.2025

Session Time

08:00 - 09:30

Room

Hall G

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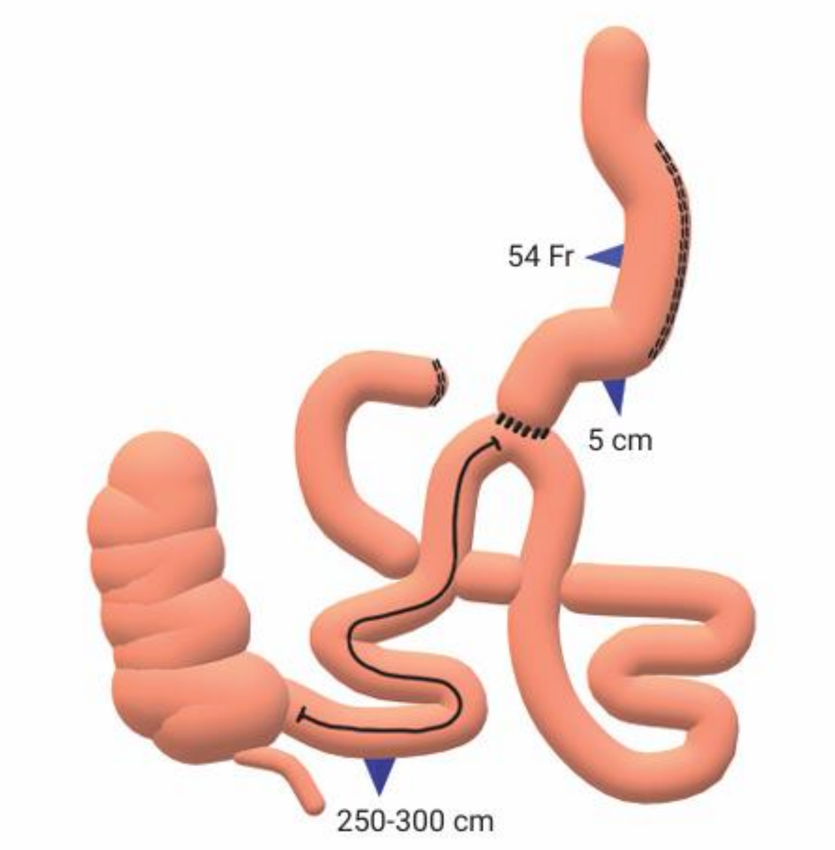
Disclosure Slide

	No, nothing to disclose
	Yes, please specify:

SADI-s



SADI-s

The SADI-S was introduced in 2007 by Sánchez-Pernaute and Antonio Torres as a modification of the biliary-pancreatic diversion with duodenoileal switch, a simpler technique in which a sleeve gastrectomy is performed and the duodenum is subsequently anastomosed to an ileal loop.

> Obes Surg. 2007 Dec;17(12):1614-8. doi: 10.1007/s11695-007-9287-8. Epub 2007 Nov 27.

Proximal duodenal-ileal end-to-side bypass with sleeve gastrectomy: proposed technique

Andrés Sánchez-Pernaute [1], Miguel Angel Rubio Herrera, Elia Pérez-Aguirre, Juan Carlos García Pérez, Lucio Cabrerizo, Luis Díez Valladares, Cristina Fernández, Pablo Talavera, Antonio Torres

Proximal duodenal-ileal end-to-side bypass with sleeve gastrectomy is a new bariatric technique based on the biliopancreatic diversion with duodenal switch in which after the sleeve gastrectomy, the duodenum is anastomosed to the ileum in a Billroth-II fashion. A 200-cm common channel-alimentary limb is devised. Anticipating an appropriate weight loss, at least similar to that obtained after gastric bypass, theoretical benefits for operated patients are a shorter operative time, the performance of only one anastomosis, and no mesentery opening. A prospective trial is now being conducted to find out the results of the procedure and to compare them to those obtained with gastric bypass and standard duodenal switch.

SADI-s

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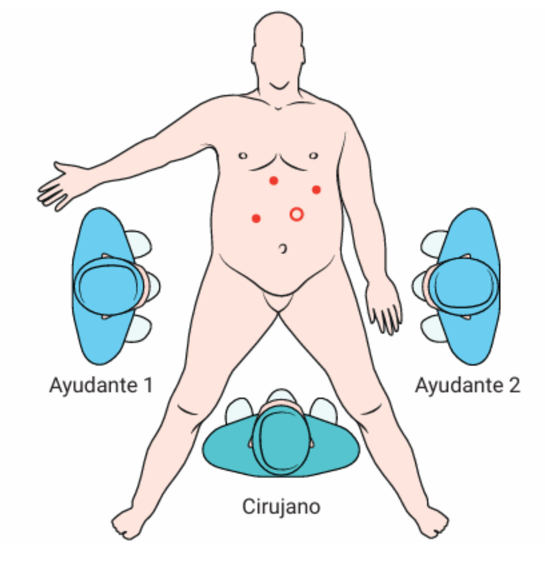
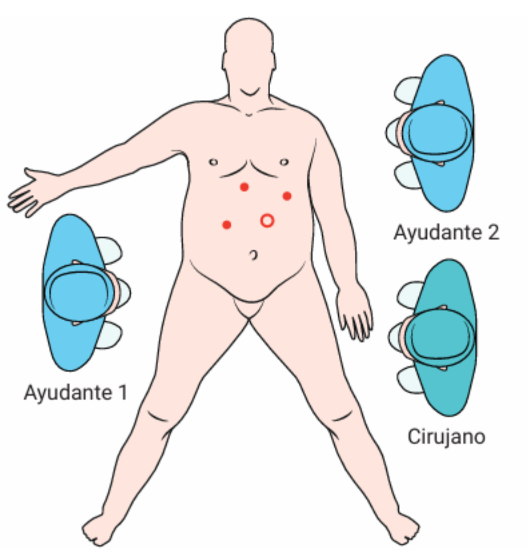
SADI-s



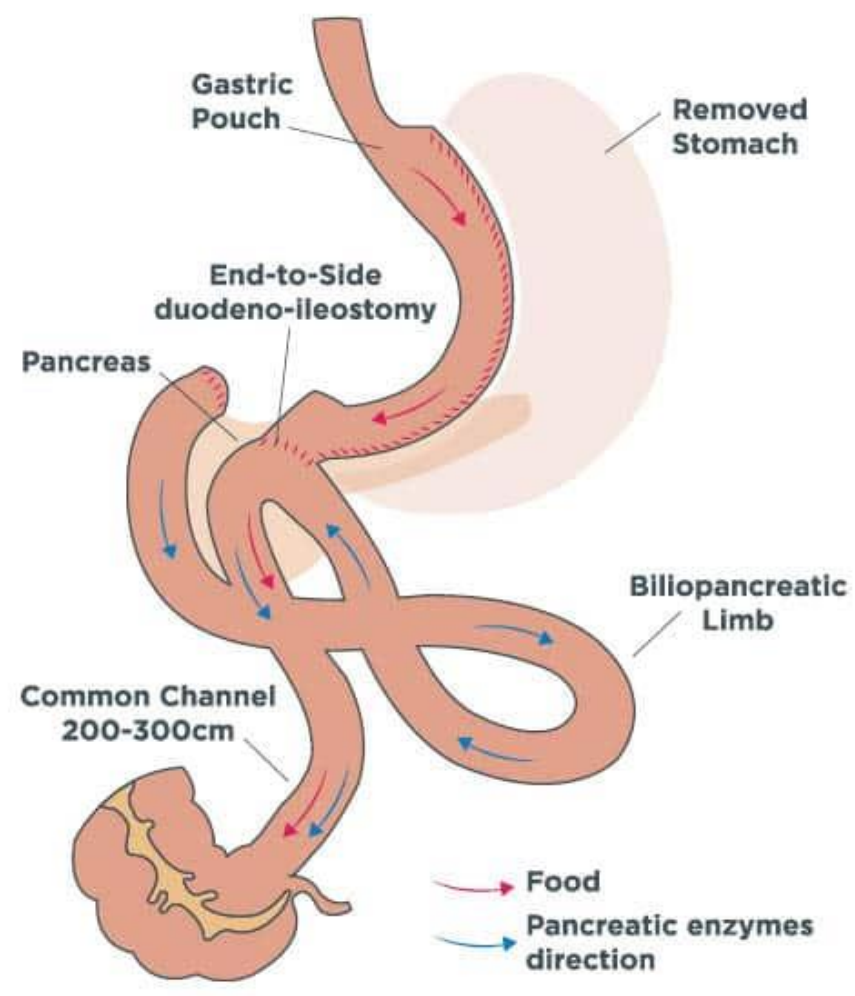


Primus

Left Hand/Liver Ret.
Right Hand
10 – 12 cm
Scope
Left Hand/Liver Ret.
Right Hand
Duodenum
Left Hand

PHYSIOLOGY

The reduction to a single anastomosis resulted in a **reduction in surgical time and postoperative morbidity** related to anastomotic leak and other complications. **Roux-en-Y duodenal drainage is not necessary**, as the duodenoileal anastomosis is not under tension and does not present biliary reflux as it is a **postpyloric anastomosis**. Furthermore, **the mesentery opening is avoided**, which reduces the likelihood of internal hernia.

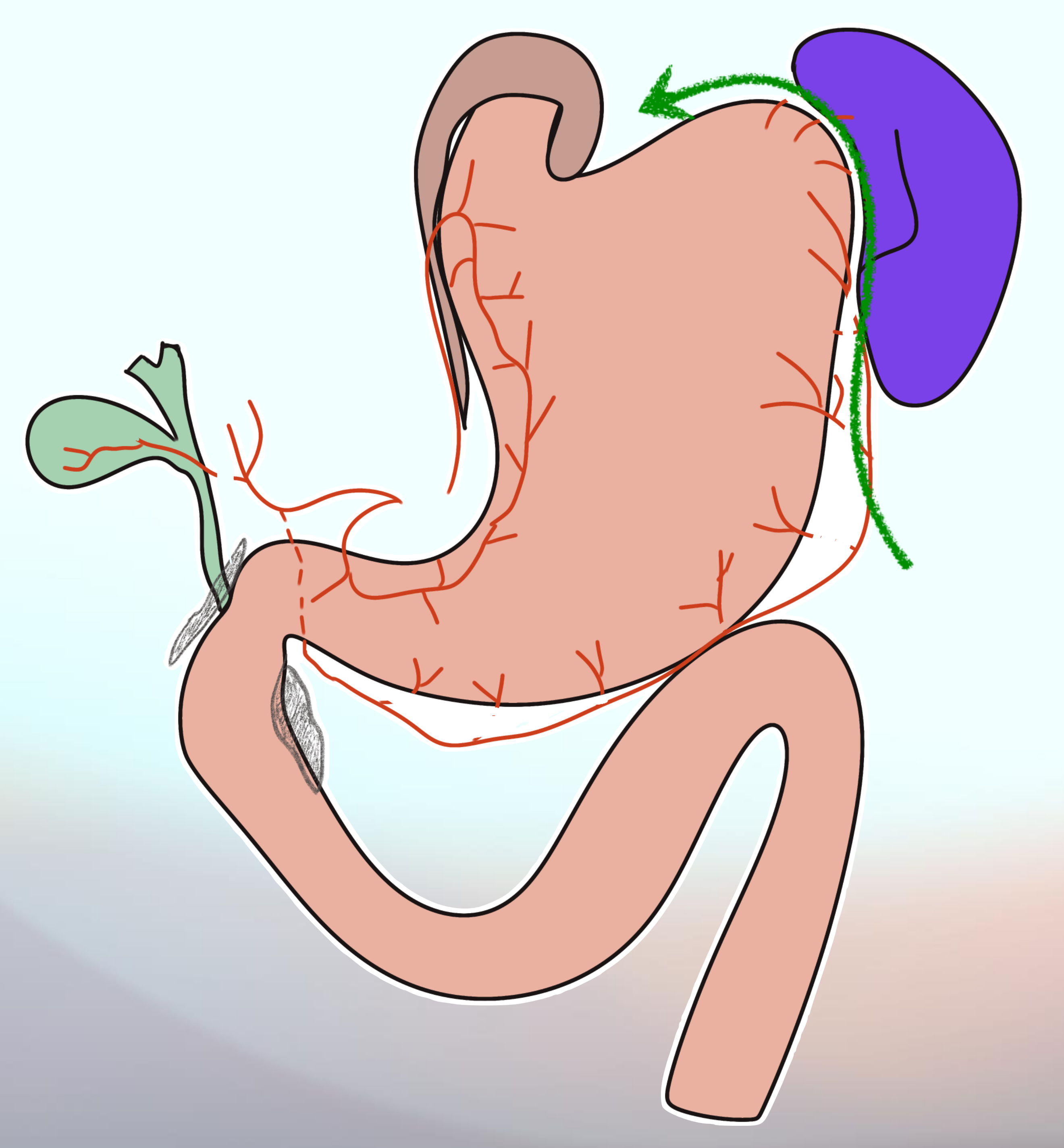


Postoperative Care:

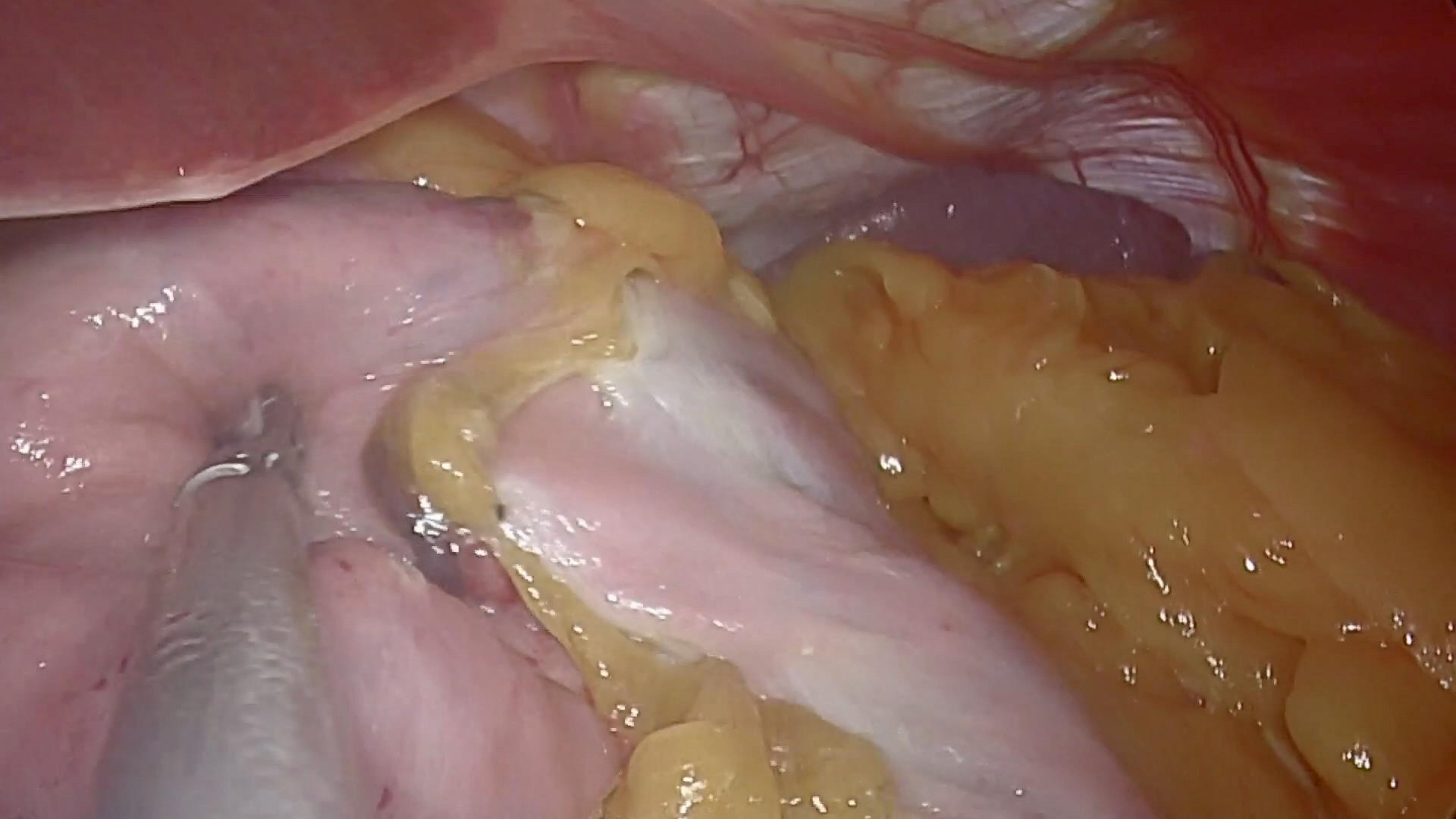
After extubation, the patient is preferably transferred to a resuscitation unit, from where they are transferred to the ward as soon as they meet discharge criteria. On the afternoon of the procedure, they rise from the chair and begin to drink sips of water. If there are no complications, a low-calorie diet is started on the second day after surgery. On the third day, the abdominal drain is removed, and the patient is discharged.

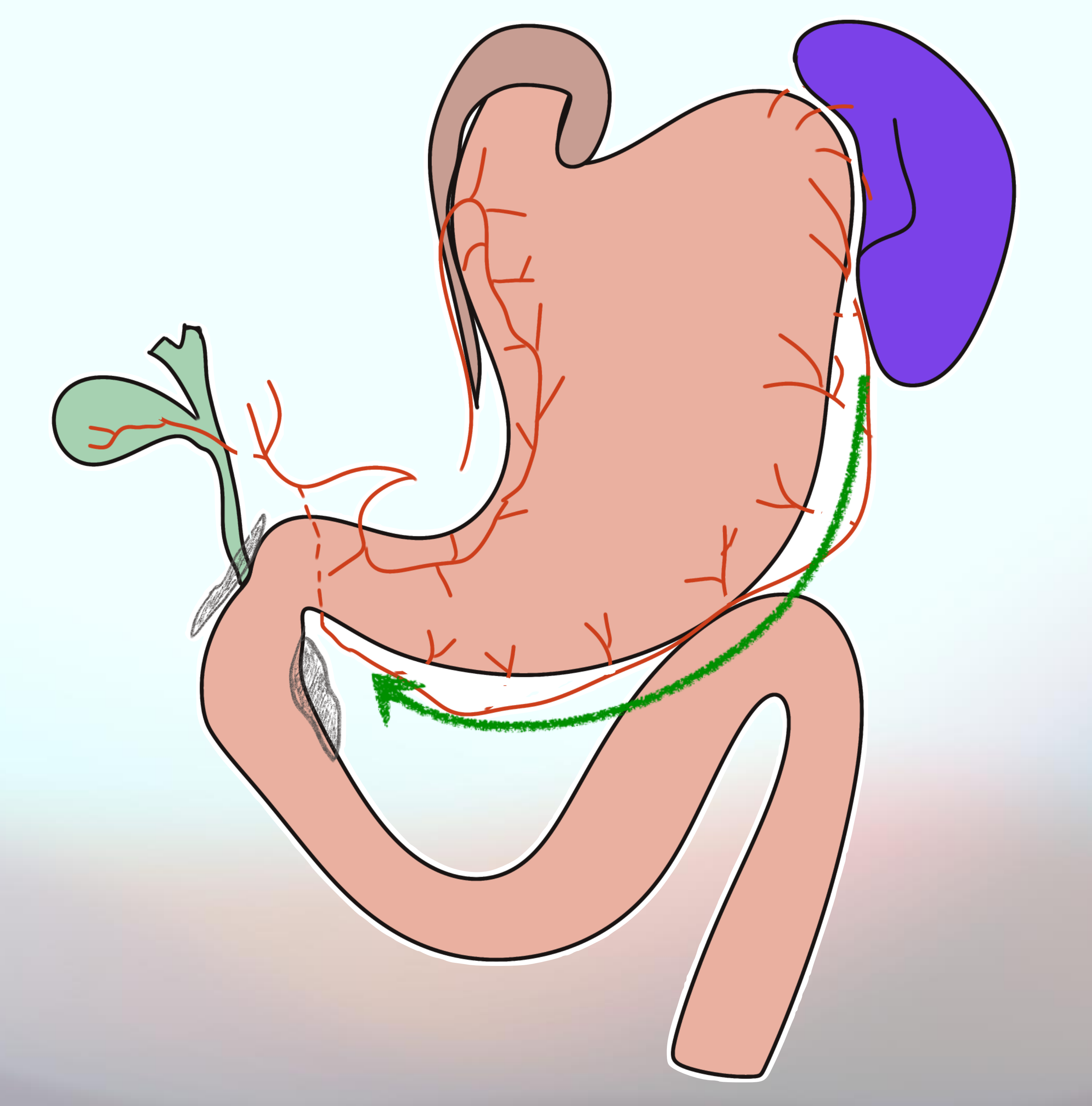
Follow-up:

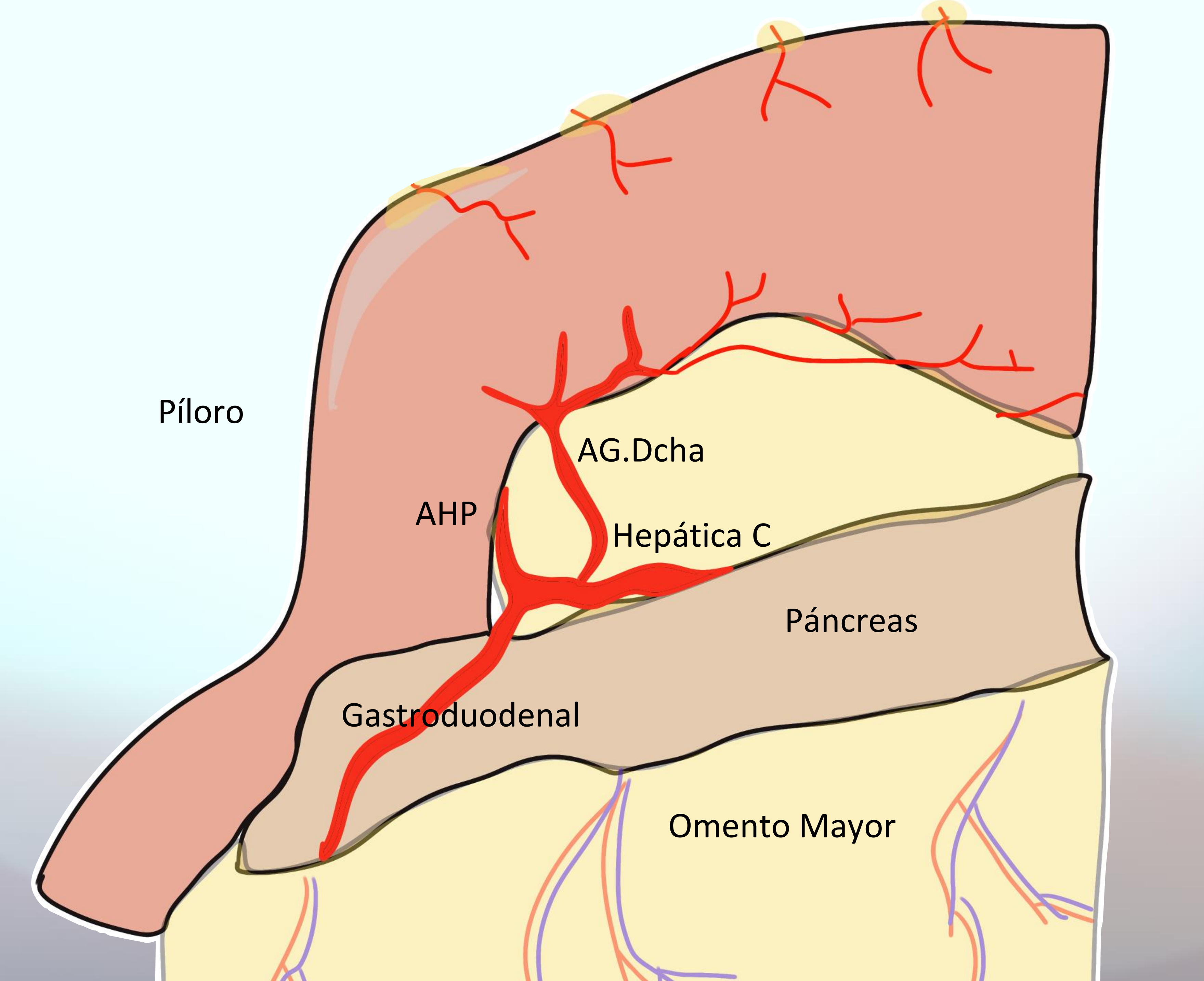
During follow-up, the patient will maintain a high-calorie diet for the first month postoperatively, consisting of self-prepared high-protein shakes containing approximately 800 calories per day. **Multivitamin, calcium, and iron supplements will be administered initially, and serum levels will be monitored with serial blood tests.** The patient will have regular surgical and endocrinology consultations indefinitely. Three to four consultations per year will be made during the first two years, followed by one consultation per year thereafter.



1. Disección y movilización completa de fundus

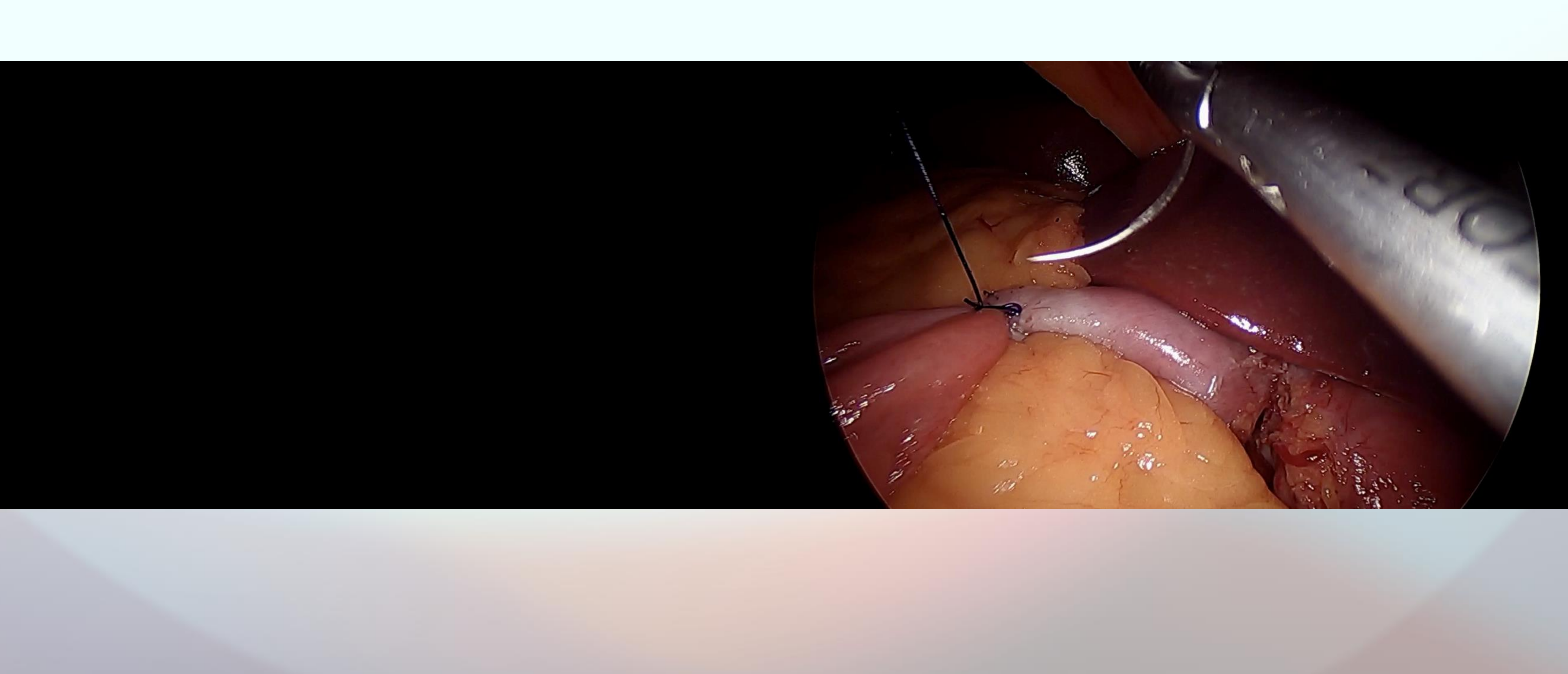


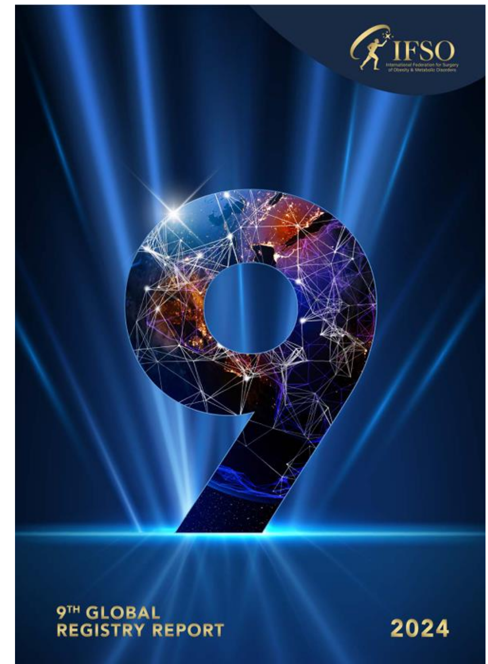



Píloro
AG.Dcha
AHP
Hepática C
Páncreas
Gastroduodenal
Omento Mayor

Disección Antro-Duodeno y A. Gástrica D.

G. Vertical y Sección Duodenal





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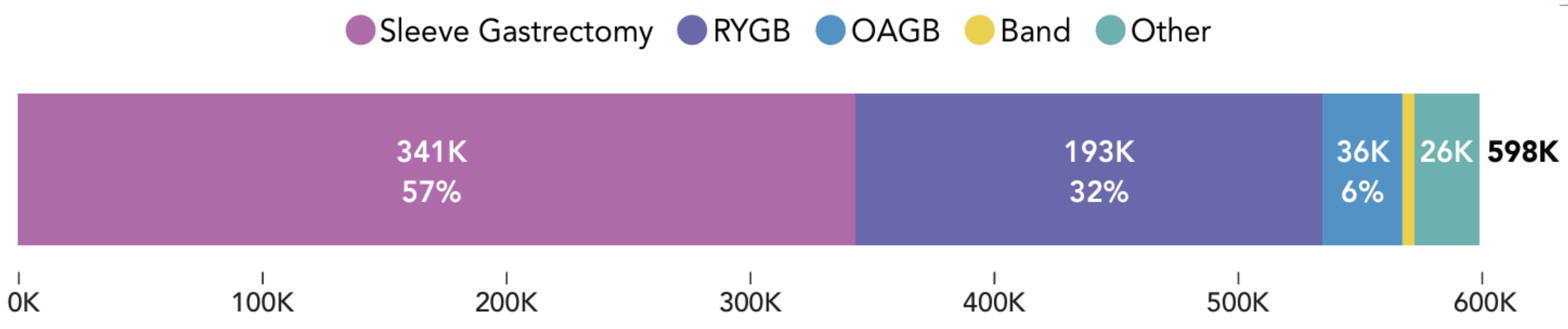

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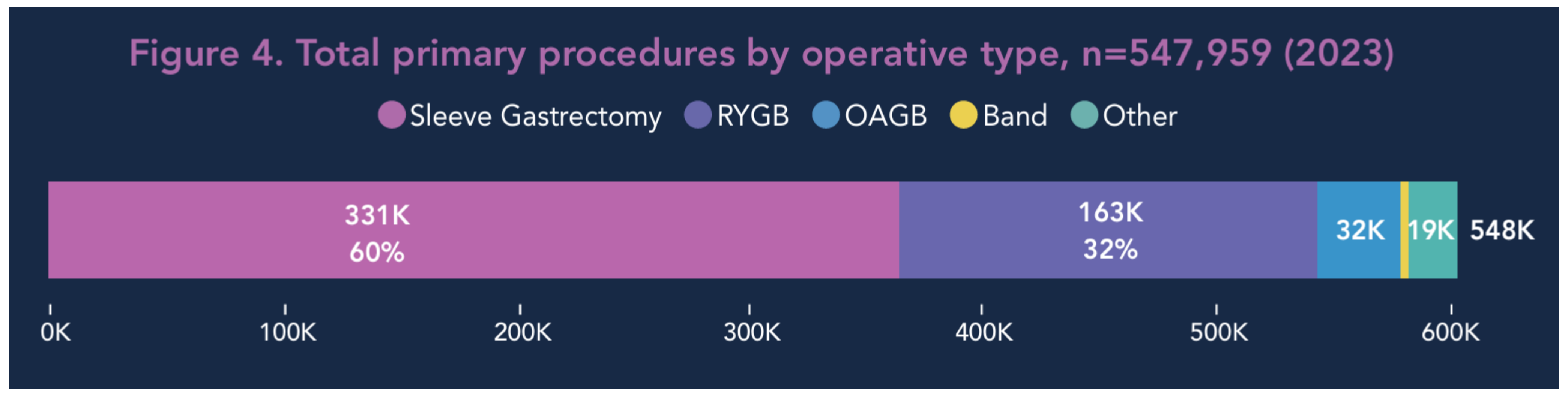
Figure 4. Total primary procedures by operative type, n=547,959 (2023)


Sleeve Gastrectomy
RYGB
OAGB
Band
Other
331K
60%
163K
32%
32K
19K
548K
0K
100K
200K
300K
400K
500K
600K

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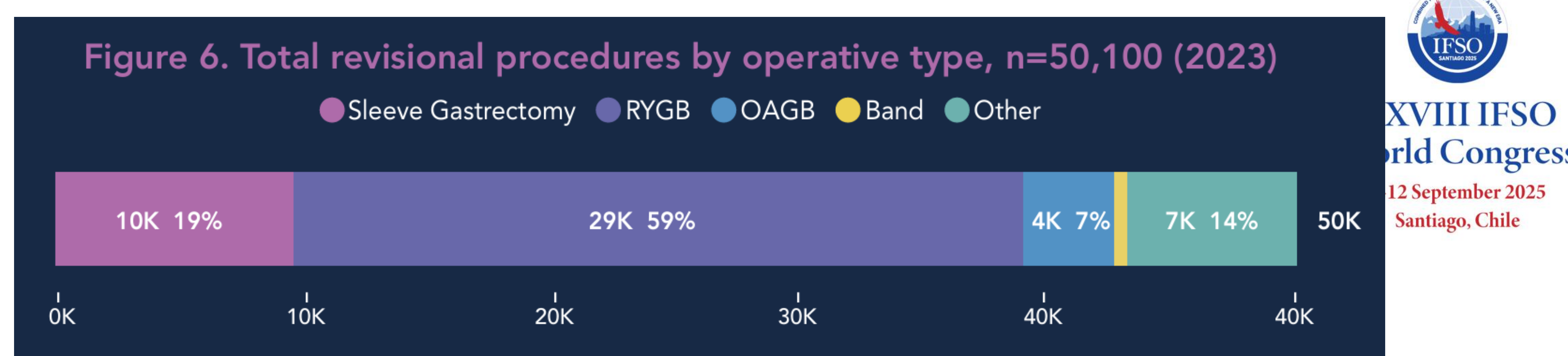

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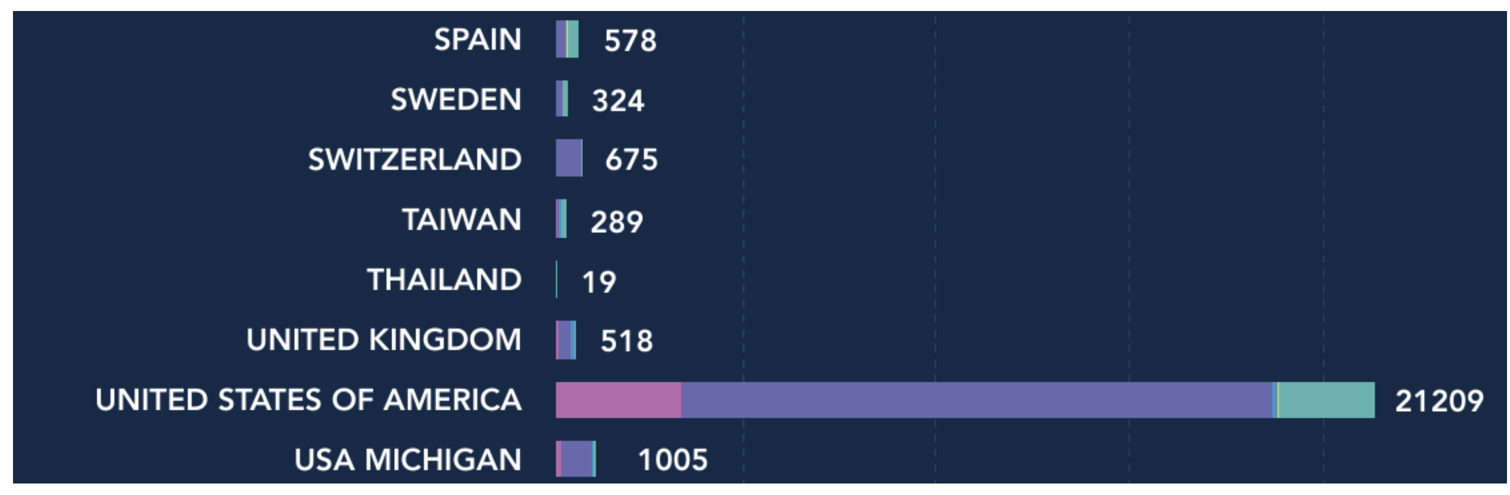

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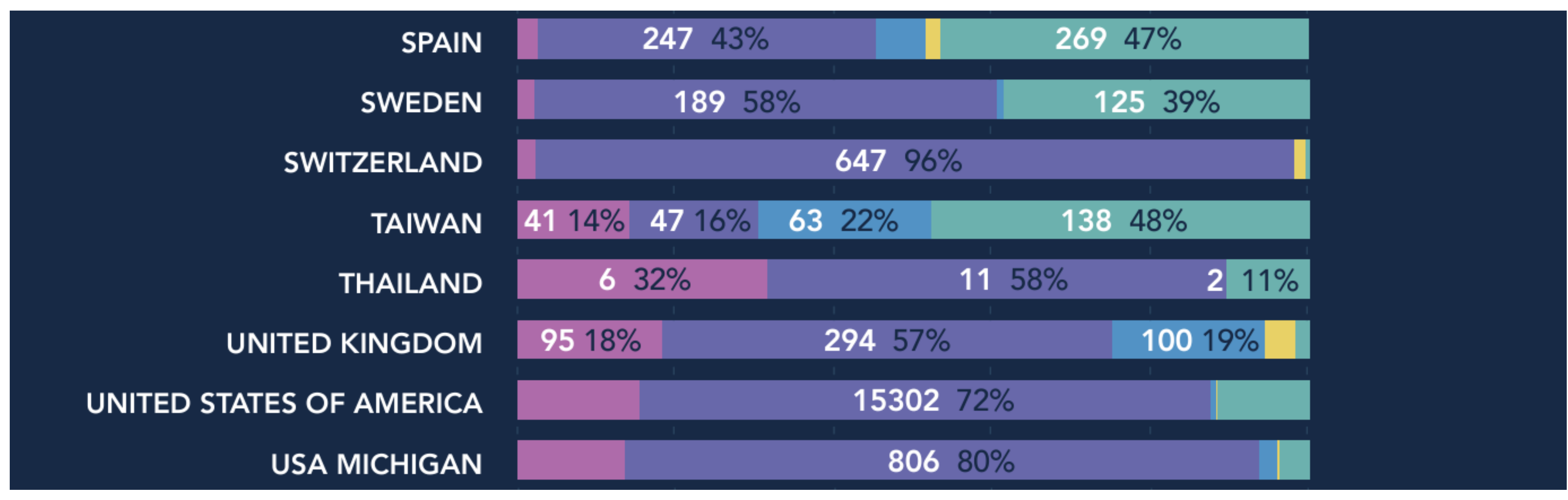

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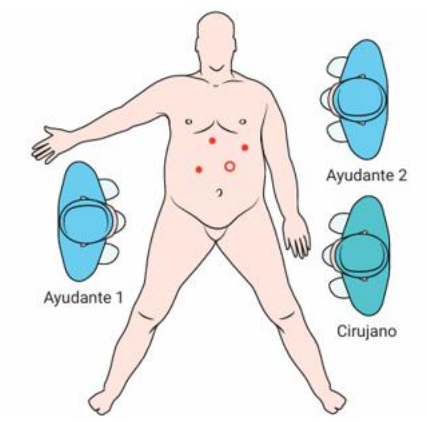
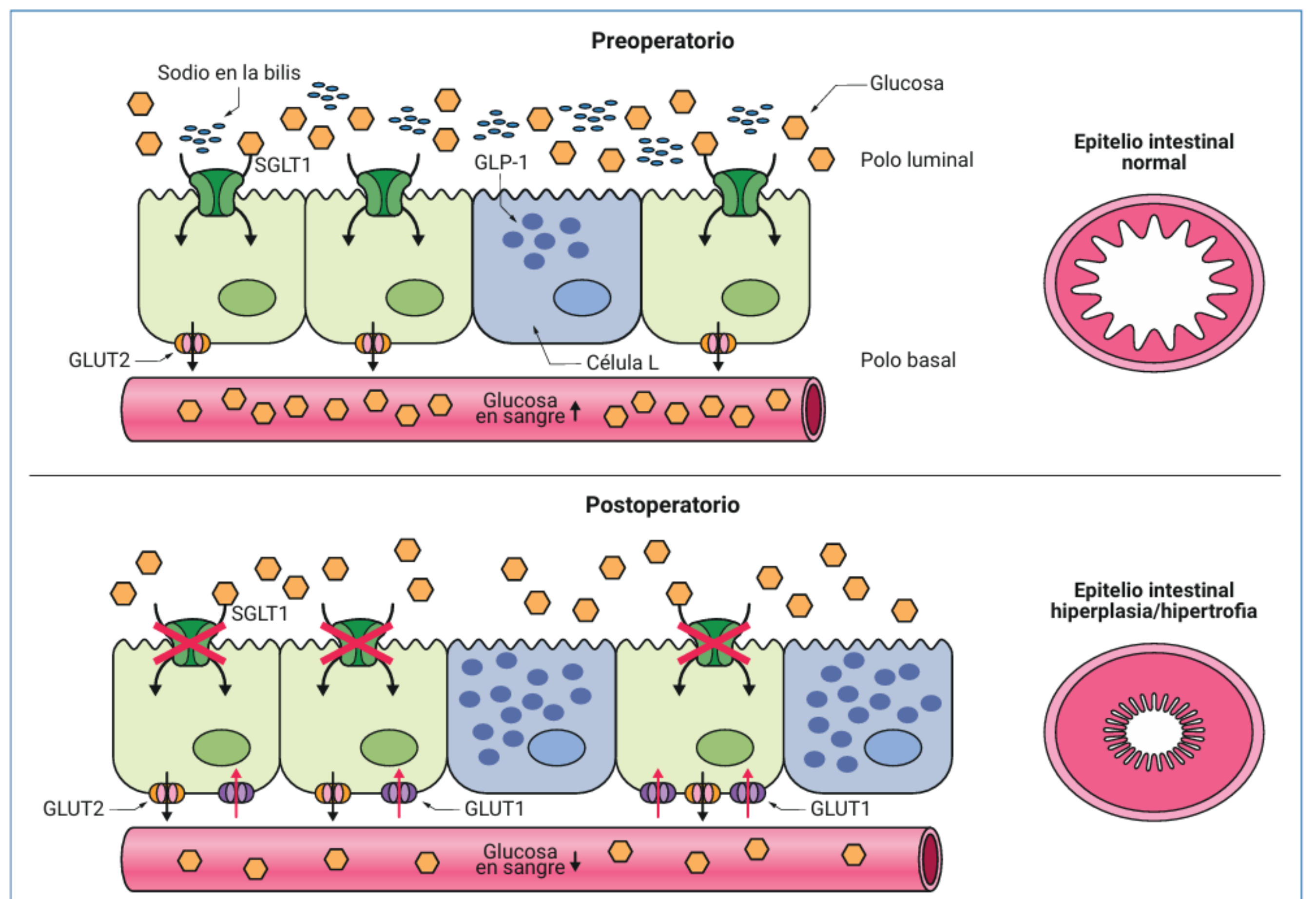

Ayudante 2
Ayudante 1
Cirujano



.- Importante reflejar dónde se produce la absorción de cada nutriente

	Banda gástrica	Gastrectomía vertical	Bypass gástrico en Y de Roux, Derivación biliopancreática, Switch duodenal, BAGUA, SADI
Efecto metabólico	**Técnicas no derivativas**		**Técnicas derivativas**
Restricción calórica, reducción de peso y adiposidad	+	++	+++
Disminución de apetito y saciedad	+	++	+++
Exclusión duodenal	–	–	+++
Efecto incretínico	–	++	+++
Tránsito intestinal acelerado	–	+/–	+++
Modificación de la bilis	–	+/–	+++
Remodelación intestinal	–	–	+++
Cambios en la macrobiota	–	+	+++
Señales neurohormonales	+	+	+++

Tabla 32-2. Suplementación en función de la intervención quirúrgica

	Multivitamínico	Hierro	Vitamina B_{12}	Calcio/vitamina D	Vitamina A/E/K	Zinc/cobre
Gastrectomía vertical	Sí	Valorar	Valorar	Valorar		
Bypass gástrico	Sí	Sí	Sí	Sí	Valorar	Valorar
Derivación biliopancreática	Sí (×2)	Sí	Valorar	Sí (dosis elevada)	Valorar	Valorar

En España, en el año 2007 se introdujo la última modi
f
 icación de la derivación biliopancreática, el cruce duodenal en una anastomosis, llamado SADI-S por sus siglas en inglés (single anastomosis duodeno-ileal bypass with sleeve gastrec tomy) (Fig. 39-3). Manteniendo el espíritu de la derivación biliopancreática, al observarse la no necesidad de dividir el intestino en dos asas tras la preservación pilórica, el SADI-S consigue repetir los resultados de sus antecesores (derivación biliopancreática [DBP] y derivación biliopancreática con in terruptor duodenal [DBP-DS]) con la menor complejidad

técnica que le otorga la reconstrucción en una sola asa y el incremento del canal común al hacerlo coincidir con el ali mentario, todo ello, sorprendentemente, sin comprometer la pérdida de peso. El SADI-S mantiene las mismas longi tudes que la técnica de Scopinaro, pero juntas en una sola asa, lo que podría incrementar la absorción calórica –aunque esto no se ha confirmado en estudios de evolución ponderal a más de 5 años–, pero sobre todo mejora la circulación en terohepática, disminuye la cantidad de sales biliares que al canzan el colon y reduce por tanto la irritación de la mucosa del intestino grueso, su secreción de agua y electrólitos hacia la luz intestinal y los movimientos intestinales. Se esperaría también una mayor absorción de vitamina D, que no se ha demostrado en la práctica clínica, y de micronutrientes.

 Una vez abandonadas las técnicas exclusivamente malab sortivas, los bypasses intestinales sin disminución del tamaño gástrico, las tres cirugías descritas anteriormente son varia ciones alrededor de un mismo concepto: moderada restric ción y bypass gastrointestinal o duodenointestinal con canal alimentario y común conocidos y cortos (200 + 100, 200 + 50) y canal biliopancreático largo. Cada una intenta aportar una ventaja respecto a las otras, pero sus efectos metabólicos y ponderales son muy similares, así como sus complicacio nes nutricionales y las posibilidades de revisión y reversión.

PROBLEMAS NUTRICIONALES DE LAS DERIVACIONES BILIOPANCREÁTICAS

Las complicaciones nutricionales a largo plazo de las deriva ciones biliopancreáticas son compartidas por todas las téc nicas. Si bien existen distintas posibles insuficiencias deriva das de los déficits de absorción, los problemas derivados de la insuficiente absorción de hierro, calcio o vitaminas liposo lubles son, en general, fácilmente solucionados con aportes externos. Sin embargo, los problemas secundarios a la insu f
iciente absorción de proteínas o al sobrecrecimiento bac teriano pueden ser muy graves y comprometer la vida del paciente.

El metabolismo proteico se compromete tanto por la disminución de la absorción como por el incremento de la pérdida endógena. El tamaño del estómago, la longitud del intestino en contacto con los alimentos –el canal alimenta rio– y la longitud del canal común son los tres responsables de esta alteración del metabolismo proteico: el estómago dis minuye su capacidad para hidrolizar proteínas, la superficie absortiva del intestino disminuye y la actividad de las enzi mas pancreáticas se retrasa. Los mecanismos que causan la pérdida endógena de proteínas se conocen peor, pero parece que la exposición de la mucosa intestinal a la acción de los ácidos gástricos sin el tampón biliar junto con la alteración

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The reduction to a single anastomosis resulted in a reduction in surgical time and postoperative morbidity related to anastomotic leak and other complications. Roux-en-Y duodenal drainage is not necessary, as the duodenoileal anastomosis is not under tension and does not present biliary reflux as it is a postpyloric anastomosis. Furthermore, the mesentery opening is avoided, which reduces the likelihood of internal hernia.

Postoperative Care:

After extubation, the patient is preferably transferred to a resuscitation unit, from where they are transferred to the ward as soon as they meet discharge criteria. On the afternoon of the procedure, they rise from the chair and begin to drink sips of water. If there are no complications, a low-calorie diet is started on the second day after surgery. On the third day, the abdominal drain is removed, and the patient is discharged.

Follow-upDuring follow-up, the patient will maintain a high-calorie diet for the first month postoperatively, consisting of self-prepared high-protein shakes containing approximately 800 calories per day. Multivitamin, calcium, and iron supplements will be administered initially, and serum levels will be monitored with serial blood tests. The patient will have regular surgical and endocrinology consultations indefinitely. Three to four consultations per year will be made during the first two years, followed by one consultation per year thereafter.

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SADI-S is a technique that, as previously explained, is derived from biliopancreatic diversion, maintaining its fundamental principles: the development of an intestinal diversion with a known common channel, and with malabsorptive intent, preferably fat malabsorption, and with preservation of the enterohepatic cycle. In addition, a moderate gastric restriction is added, performing a calibrated vertical gastrectomy with a larger diameter tube than usual. However, it is a very versatile technique because, depending on the surgeon's preferences or the patient's characteristics, it can be performed as a gastric bypass, with a narrower tube, and a duodenum-jejunal bypass with more than 300 cm of common channel, or it can adhere to standard malabsorptive principles, as our team routinely performs.The main objective of the surgery is common to all other bariatric surgeries: to prevent morbidity and mortality related to obesity and metabolic syndrome, as well as to improve the patients' quality of life. This is achieved through sufficient and sustained weight loss.

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It is currently known that duodenal-pancreatic bypass, anastomosis of the stomach or duodenum to the ileum, pyloric preservation, resection of the gastric fundus, and the reduction in fat absorption that occurs by shortening the common channel are all mechanisms involved in the metabolic improvement of type 2 diabetes mellitus, so SADI-S should be considered as an appropriate option for these patients.In patients at high surgical risk, SADI-S can be considered for a two-stage surgery, starting with a sleeve gastrectomy. It can also be used as revision surgery in cases of absence of weight loss, weight regain, or absence of remission of comorbidities.It should be noted that sleeve gastrectomy is one of the most commonly used procedures worldwide. It is a highly effective technique as a single procedure in morbidly obese patients, but it has also proven to be a suitable option as a first step in the surgical treatment of super-morbidly obese patients or patients at high surgical risk. In cases of insufficient weight loss or weight regain, with an anatomically normal first sleeve gastrectomy, it is ideal to choose malabsorptive techniques as a second step, especially if the patient was initially super-morbidly obese, as these techniques are the most effective for this type of patient. SADI-S is a malabsorptive surgery that offers satisfactory weight loss results in patients who have had a previous sleeve gastrectomy.

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As a general rule, the indications for performing SADI-S are similar to those for other procedures, keeping in mind that it is especially useful in super-morbidly obese patients and as a second-stage or revision surgery after sleeve gastrectomy. In published studies, the average body mass index (BMI) of patients undergoing SADI-S was 44.3 kg/m2 to 58.4 kg/m2.Patients can be considered candidates for SADI-S if they meet the following criteria:• Long-standing obesity (3-5 years).• Failure of previous dietary treatment prescribed by a specialist (a low-calorie diet followed correctly and supervised by an endocrinologist or dietitian, for at least 6 months, without achieving the desired weight loss or with rapid subsequent recovery).• Age between 18 and 65 years.• Indications based on BMI and comorbidities: – Patients with a BMI greater than 40 kg/m2. – Patients with a BMI greater than 35 kg/m2 with one or more severe comorbidities related to obesity, including: type 2 diabetes mellitus, heart disease, hypertension, sleep apnea syndrome, severe arthropathy, obesity hypoventilation syndrome, dyslipidemia, nonalcoholic fatty liver disease or nonalcoholic steatohepatitis, Pickwickian syndrome, pseudotumor cerebri, gastroesophageal reflux disease (GERD), asthma, venous stasis disease, severe urinary incontinence, severely impaired quality of life due to obesity, chronic kidney failure requiring dialysis or kidney transplant.• Ability to understand the procedure and the associated risks.• Motivation to undergo surgery. Ability to understand and follow the recommended preoperative and postoperative hygiene and dietary measures, as well as follow-up care.Enviar comentariosPaneles lateralesHistorialGuardado

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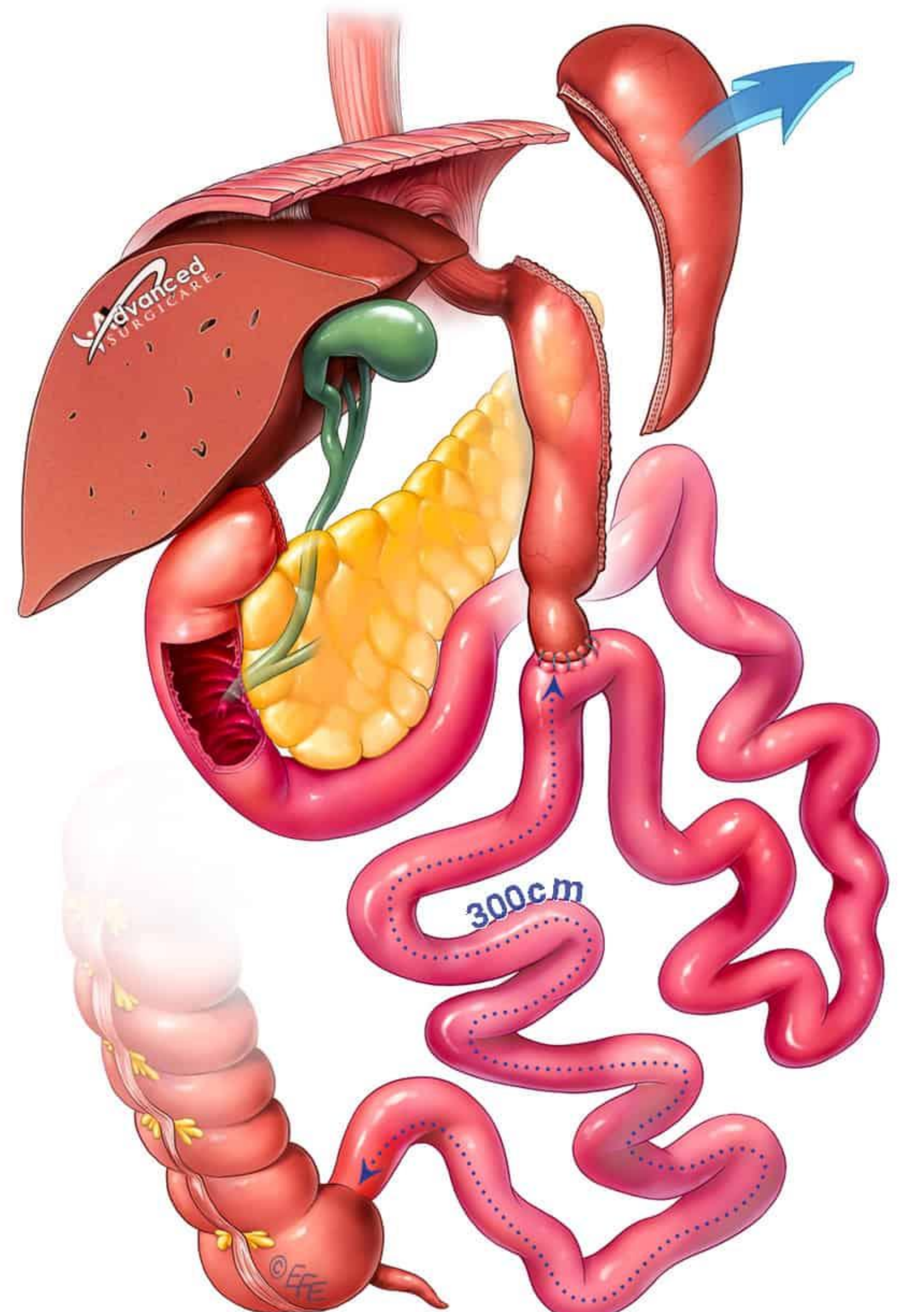

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A Sleeve Gastrectomy is initially performed.

A connection between the duodenum and small intestine is made.

Presentat

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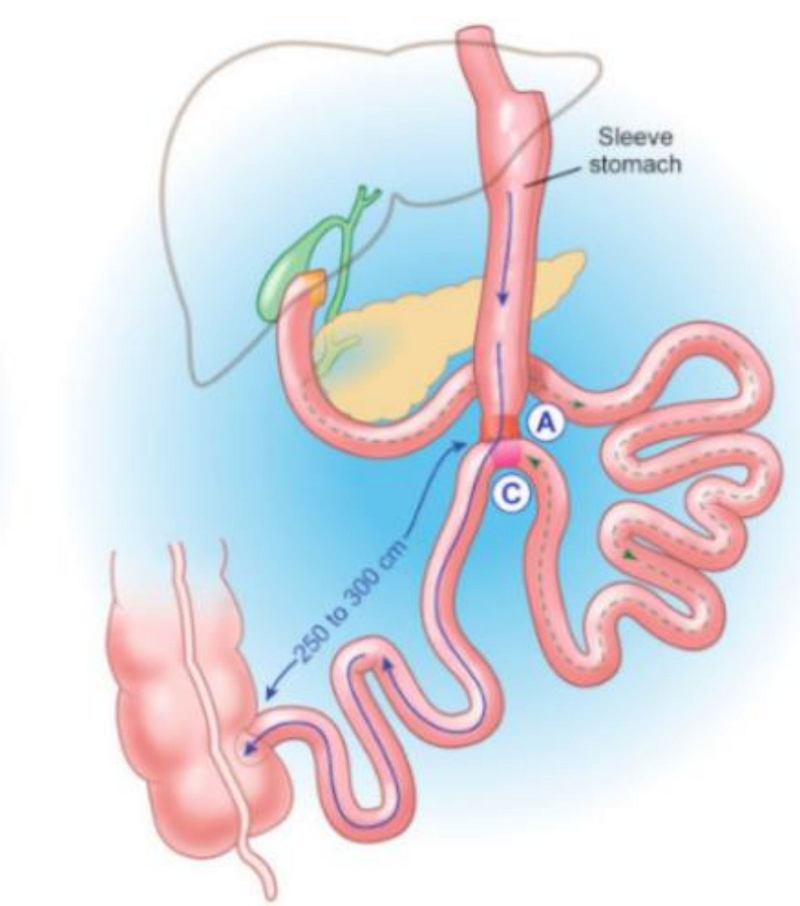

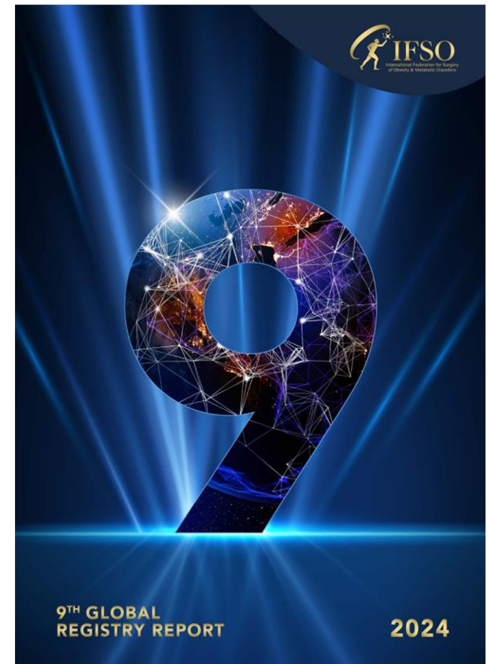

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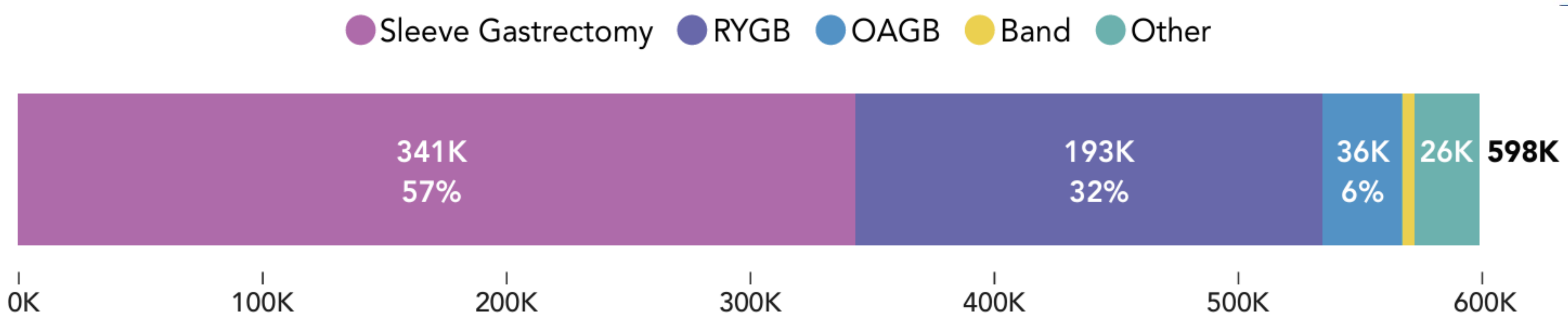

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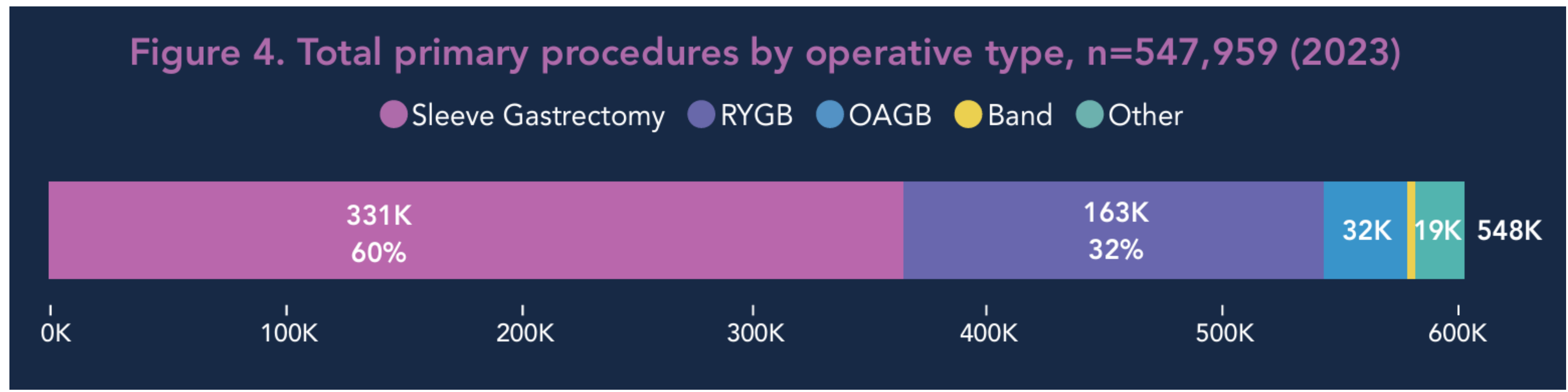

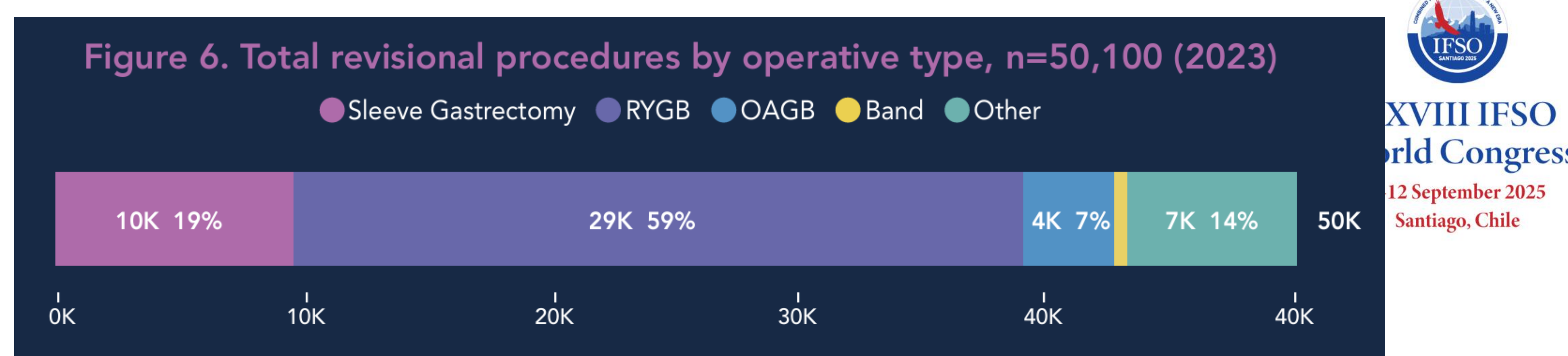
Figure 6. Total revisional procedures by operative type, n=50,100 (2023)
Sleeve Gastrectomy
RYGB
OAGB
Band
Other
10K 19%
29K 59%
4K 7%
7K 14%
50K
0K
10K
20K
30K
40K
40K
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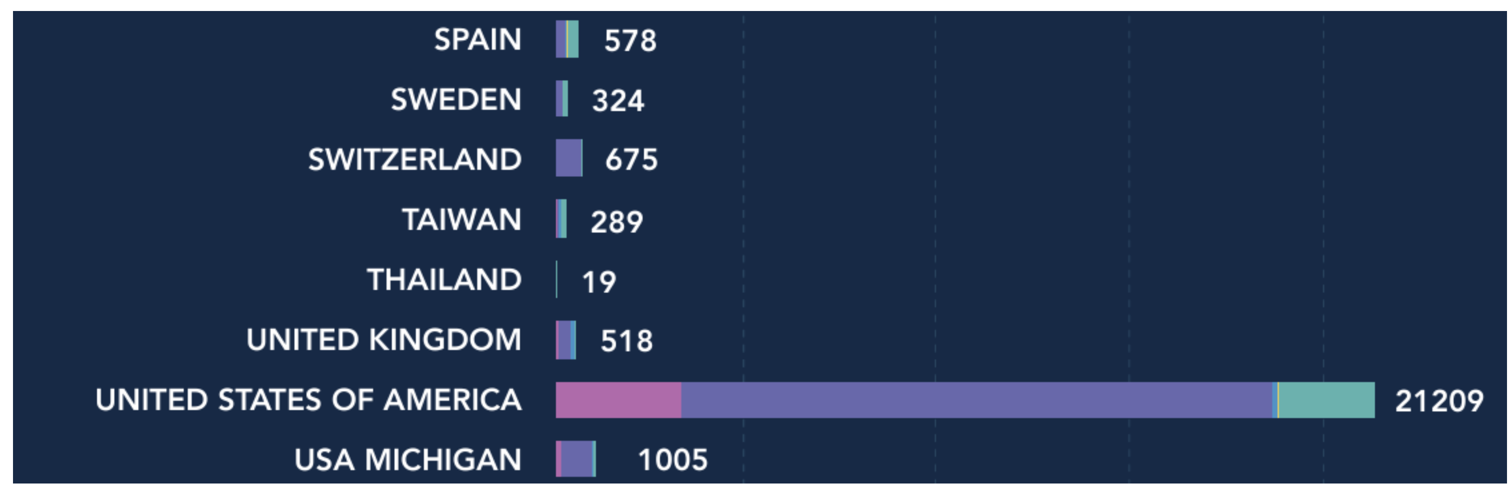
SPAIN 578
SWEDEN 324
SWITZERLAND 675
TAIWAN 289
THAILAND 19
UNITED KINGDOM 518
UNITED STATES OF AMERICA 21209
USA MICHIGAN 1005

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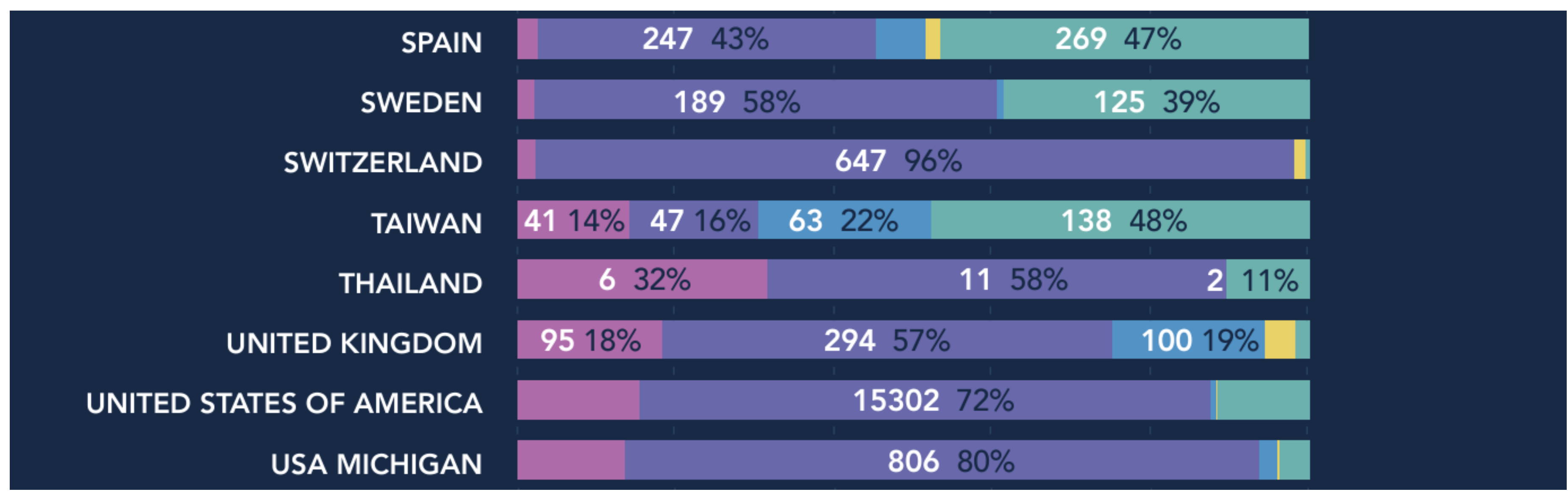

Primary procedures

Primary procedures—defined as the initial metabolic bariatric surgery an individual undergoes—accounted for 543,000 interventions. SG remains the predominant choice in nearly all reporting countries. However, procedures categorized as “other” are gaining traction in specific regions, reflecting an evolving treatment landscape. Differentiating and consistently reporting these newer techniques within registry datasets will be essential for accurate monitoring and evaluation.

Revisional procedures

A total of 50,500 revisional procedures were reported, comprising 8.5% of all recorded interventions. These include conversional procedures (in which one surgical type is changed to another due to weight recurrence, adverse events, or recurrence of metabolic disease) and corrective procedures (e.g., internal hernia repair or stricture dilation). Reported rates vary considerably by country, ranging from 1% in China and Thailand to 29% in Colombia, reflecting differences in initial procedural preferences, expertise, follow-up protocols, and potentially the impact of medical tourism. Not all registries reported on revisional procedures (Brazil, South Africa).

RYGB is the most frequently performed revisional procedure, accounting for 58% of such cases, whereas SG constitutes fewer than 20%. Notably, not all registries record the indications for revision, limiting the ability to assess long-term treatment trajectories. Ongoing efforts are focused on enhancing data completeness to better capture patient outcomes over extended periods of care.

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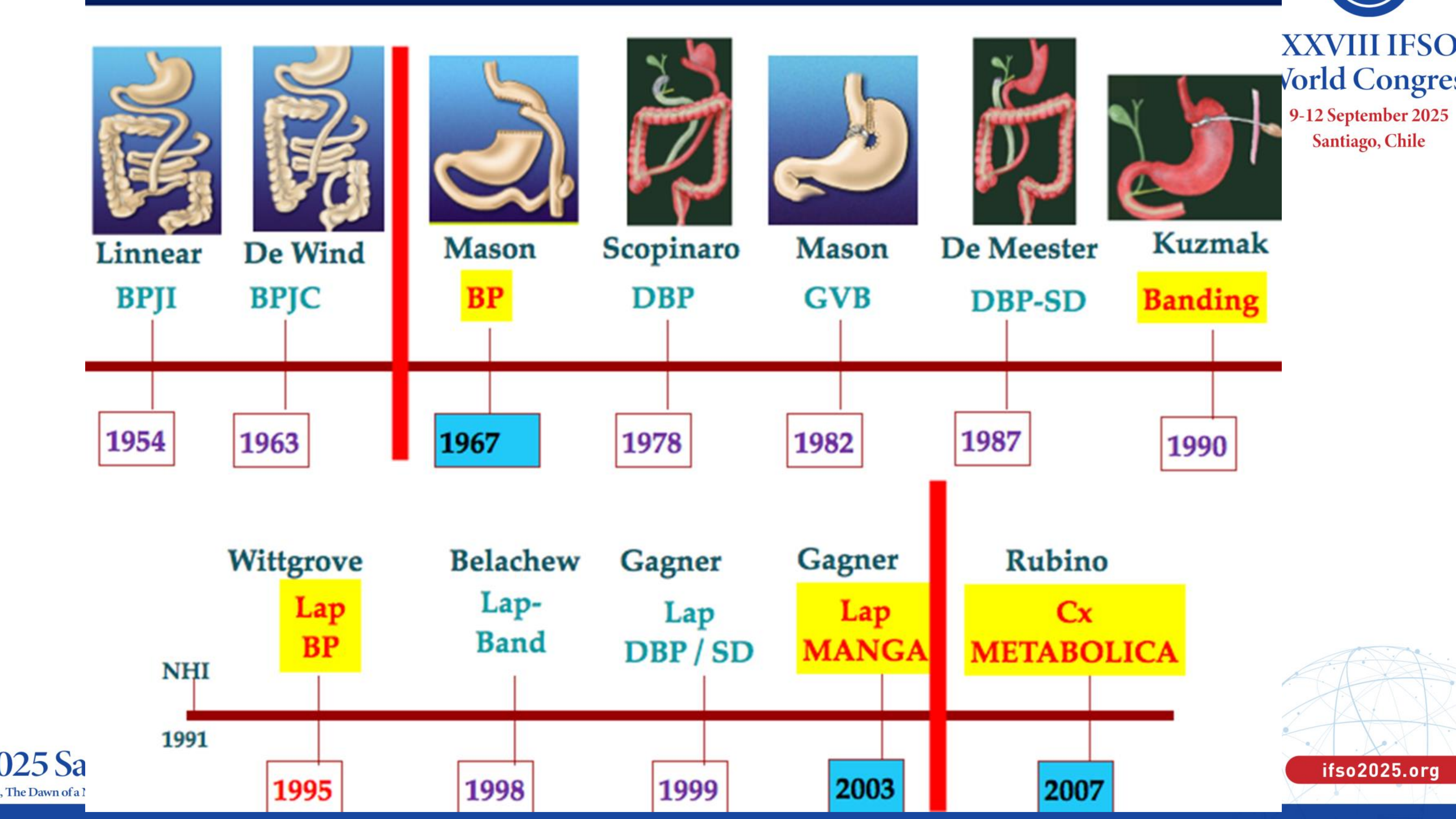

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MILESTONES IN BARIATRIC SURGERY

1950s
- WHO Recognizes Obesity as disease 1948
- Varco Jejunoileal bypass 1953

1960s
- Variations of Jejuno-ileal bypass 1963
- Mason & Ito 1st Gastric Bypass 1966

1970s
- Scott, Wolfe, Buchwald Introduction of "Metabolic Surgery" 1970
- Scopinaro BPD 1976
- Griffin & Pories Roux-en-Y Configuration 1977
- Wilkinson & Peloso Non-adjustable Gastric Band 1978

1980s
- Hallberg, Forsell, Kuzmak Adjustable Gastric Band 1980
- ASBS Founded 1983
- Mason Vertical Banded Gastroplasty 1982
- Hess & Hess BPD with Duodenal Switch 1988
- Hallberg, Forsell, Kuzmak Adjustable Gastric Band 1980

1990s
- NIH Guidelines Published 1991
- Wittgrove and Clarke 1st Laparoscopic Bypass 1993
- Pories RYGB causes diabetes resolution 1995
- IFSO Founded 1995
- Fellowship Council 1997

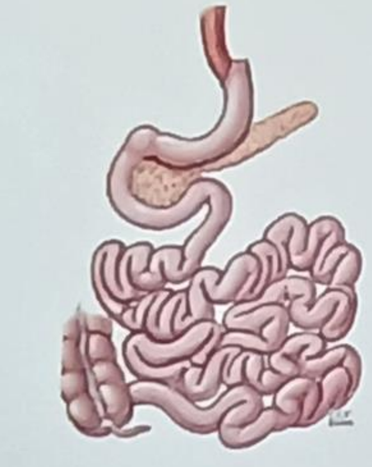
2000s
- Cummings et al. Role of Ghrelin & Weight loss 2002
- Gagner et al. Sleeve Gastrectomy 2003
- Bariatric Surgery Accreditation 2003
- Medicare coverage 2006
- ASBS -> ASMBS Name Change 2007
- SOS Trial 2007
- Adams et al. RYGB reduces mortality 2007
- Le Roux et al. Role of PYY & GLP-1 2007

2010s
- Sleeve Gastrectomy as Standalone Operation 2011
- STAMPEDE Trial Schauer et al. 2012
- Mingrone & Rubino Type 2 Diabetes RCT 2012
- Obesity as a Disease AMA 2013
- SLEEVEPASS Trial 2018

2020s
- Cohen et al. RYGB RCT for Nephropathy 2022
- IFSO/ASMBS Expand Guidelines for bariatric surgery 2022
- Schiavon RYGB RCT for Hypertension 2024

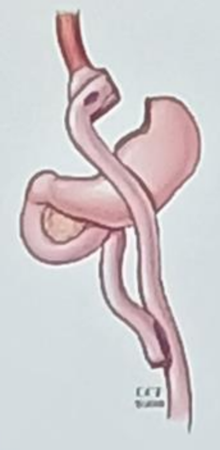
Corpodean F, Kachmar M, Albaugh V, Schauer P. SAGES Manual of Bariatric Surgery 2024, in press

Bariatric/Metabolic Surgery 2024



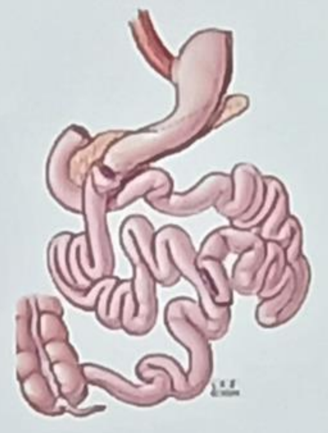
Sleeve Gastrectomy

69%



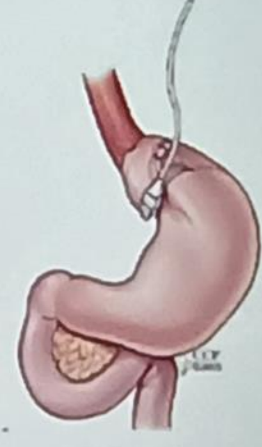
Gastric Bypass

27%



Duodenal Switch
SADI

3.0 %



Gastric Banding

1.0%

pb

ASMBS 2022, ASMBS.O

fectiveness of Anti-obesity Medications vs. Lifestyle an Bariatric Surgery for Treating Obesity

Bariatric Sur

Tirzepatide*

Semaglutide

Phentermine Topiramate

Naltrexone Bupropion

Orlistat

Liraglutide

Phentermine

Lifestyle

Incretin-Based Therapies

XXVIII IFSO
orld Congress

9-12 September 2025
Santiago, Chile

Surgical
Risk Calculator

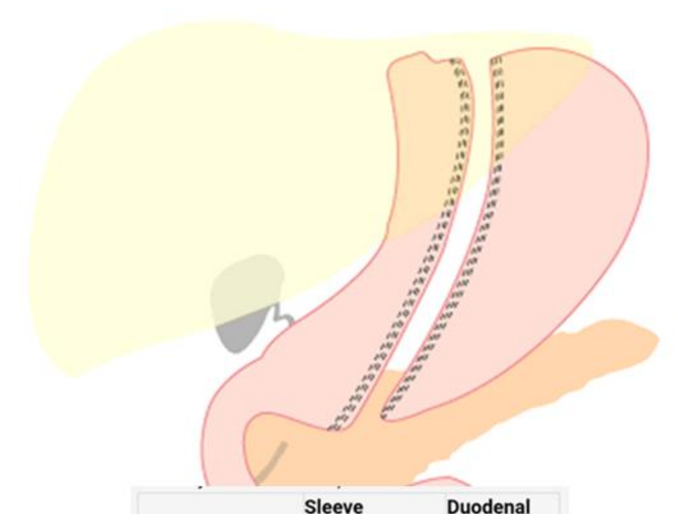
Home | About | FAQ | ACS Website | ACS NSQIP Website

Welcome to the ACS NSQIP Surgical Risk Calculator

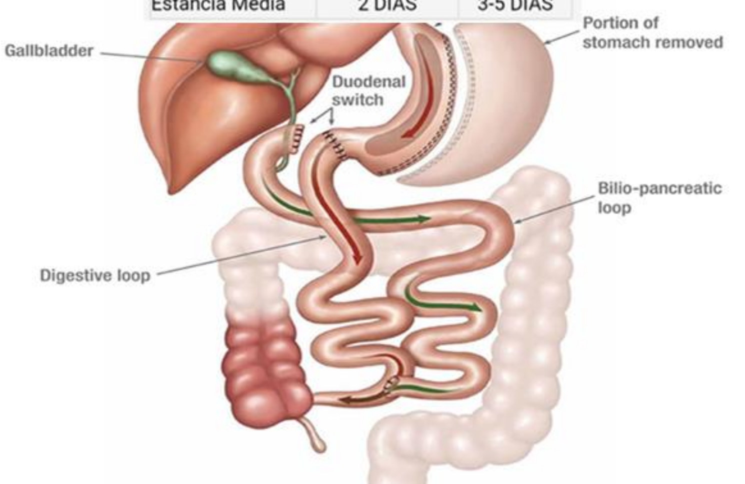
Version: 4.0.2

Last parameter update: April 2025

With this tool you can enter preoperative information about your patient to provide estimates regarding your patient's risk of postoperative complications.



	Sleeve Gastrectomy	Duodenal Switch
Riesgo de Compl. Grave	3,4%	9,3%
Cualquier Complicación	4,2%	12,5%
Reintervención	1,3%	2,9%
Readmisión	3,9%	9,5%
Mortalidad	0,1%	0,5%
Estancia Media	2 DÍAS	3-5 DÍAS



XXVIII IFSO
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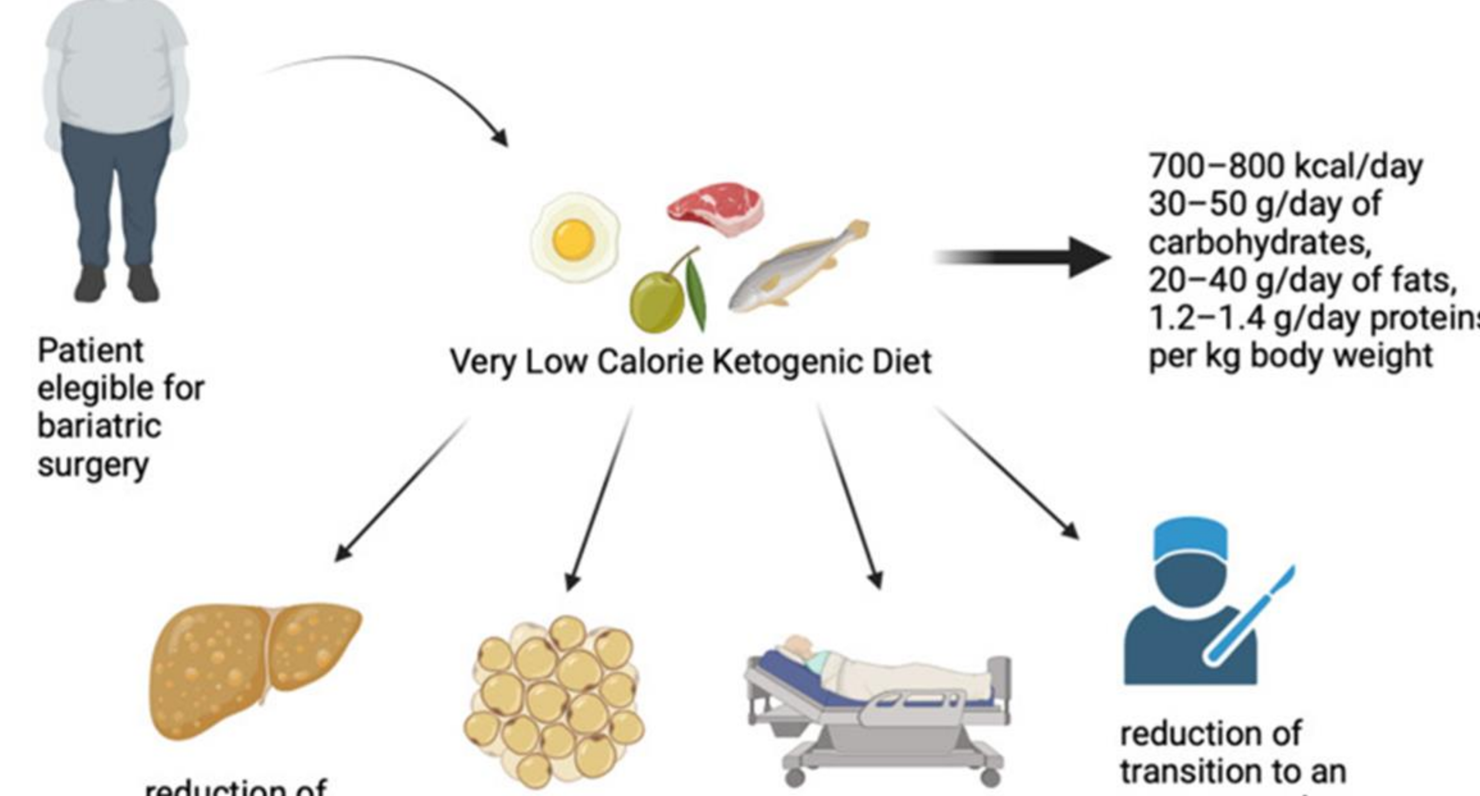


Grupo de Trabajo

Endocrinólogo y Nutricionista

Psicólogo

U. de Cirugía Bariátrica y Metabólica

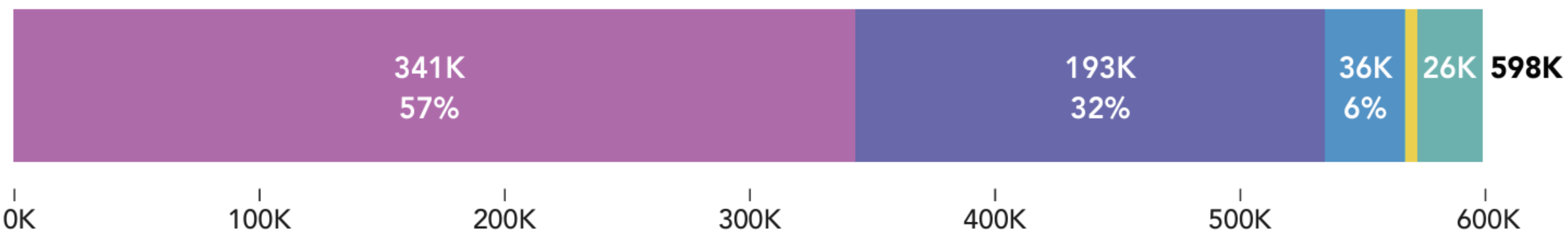
Preparador Físico

IFSO
SANTIAGO 2025

Nutrición

IFSO
SANTIAGO 2025

IFSO
SANTIAGO 2025



Procedure trends

Sleeve Gastrectomy (SG) continues to be the most performed metabolic bariatric procedure worldwide, followed by Roux-en-Y Gastric Bypass (RYGB) and One Anastomosis Gastric Bypass (OAGB). Procedures categorized as "other" are not increasing in frequency and include Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S), Biliopancreatic Diversion (BPD), Adjustable Gastric Banding (AGB), Single Anastomosis Sleeve Ileal Bypass (SASI), Transit Bipartition, and endoscopic interventions. Given the slowly growing relevance of these techniques, future editions of this report aim to provide separate, more detailed analyses of these emerging procedures.