

QUALITY AT EXTREME SCALE

Suregons as leaders spearheading high volume centers

Major decisions behind the evolution of a
48-to-2,200-case bariatric program

DR MOHIT BHANDARI

IFSO 2026 • TORONTO

48



2,200

CASES / YEAR

Volume did not create our quality.

Standardization created quality— and quality made volume possible.

01

STANDARDIZE

Reduce unwanted variation

02

MEASURE

Turn outcomes into feedback

03

TEACH

Make the method transferable

Hiring a Director of Research and Clinical Training



Standardization of Bariatric Metabolic Procedures: World Consensus Meeting Statement

Mohit Bhandari ¹, M A L Fobi ², Jane N Buchwald ³;

Bariatric Metabolic Surgery Standardization (BMSS) Working Group:

Collaborators, Affiliations + expand

PMID: 31297742 DOI: [10.1007/s11695-019-04032-x](#)

Background: Standardization of the key measurements of a procedure's finished anatomic configuration strengthens surgical practice, research, and patient outcomes. A consensus meeting was organized to define standard versions of 25 bariatric metabolic procedures.

Methods: A panel of experts in bariatric metabolic surgery from multiple continents was invited to present technique descriptions and outcomes for 4 classic, or conventional, and 21 variant and emerging procedures. Expert panel and audience discussion was followed by electronic voting on proposed standard dimensions and volumes for each procedure's key anatomic alterations. Consensus was defined as $\geq 70\%$ agreement.

Results: The Bariatric Metabolic Surgery Standardization World Consensus Meeting (BMSS-WOCOM) was convened March 22-24, 2018, in New Delhi, India. Discussion confirmed heterogeneity in procedure measurements in the literature. A set of anatomic measurements to serve as the standard version of each procedure was proposed. After two voting rounds, 22/25 (88.0%) configurations posed for consideration as procedure standards achieved voting consensus by the expert panel, 1 did not attain consensus, and 2 were not voted on. All configurations were voted on by $\geq 50\%$ of 50 expert panelists. The Consensus Statement was developed from scientific evidence collated from presenters' slides and a separate literature review, meeting video, and transcripts. Review and input was provided by consensus panel members.

Conclusions: Standard versions of the finished anatomic configurations of 22 surgical procedures were established by expert consensus. The BMSS process was undertaken as a first step in developing evidence-based standard bariatric metabolic surgical procedures with the aim of improving consistency in surgery, data collection, comparison of procedures, and outcome reporting.



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Collaborators

Bariatric Metabolic Surgery Standardization (BMSS) Working Group: Alaa Abbass, Barham K Abu Dayyeh, Munir Alamo, Mohammed Al-Jarallah, Luigi Angrisani, Estuardo J Behrens, Aparna G Bhasker, Camilo Boza, Henry Buchwald, Jean-Marc Chevallier, Pradeep Chowbey, David E Cummings, Jerome Dargent, Maurizio De Luca, Eric J DeMaria, Aureo DePaula, John Dixon, Karin Dolezalova, Martin Fried, Michel Gagner, Manoel Galvao Neto, Ramen Goel, Jan W Greve, Miguel F Herrera, Jacques Himpens, Chih-Kun Huang, Nelson R Huerta, Nicolae N Iordache, Gurvinder S Jammu, Kazunori Kasama, Rajesh Khullar, Shanu N Kothari, Lilian Kow, Muffazal Lakdawala, Andriy S Lavryk, Kamal Mahawar, Tarek Mahdy, Samer Mattar, John Melissas, Vinod Menon, Mohammed K Mirza Gari, Mahendra Narwaria, Abdelrahman Nimeri, Paul E O'Brien, Oral B Ospanov, Arun Prasad, Aurora D Pryor, Almino C Ramos, Rui Ribeiro, Raul Rosenthal, Sergio Santoro, Nicola Scopinaro, Shelby Sullivan, Mohammad Talebpour, Jayasshree Todkar, Antonio Torres, Surendra Ugale, Rudolf A Weiner, Alan C Wittgrove, Natan Zundel

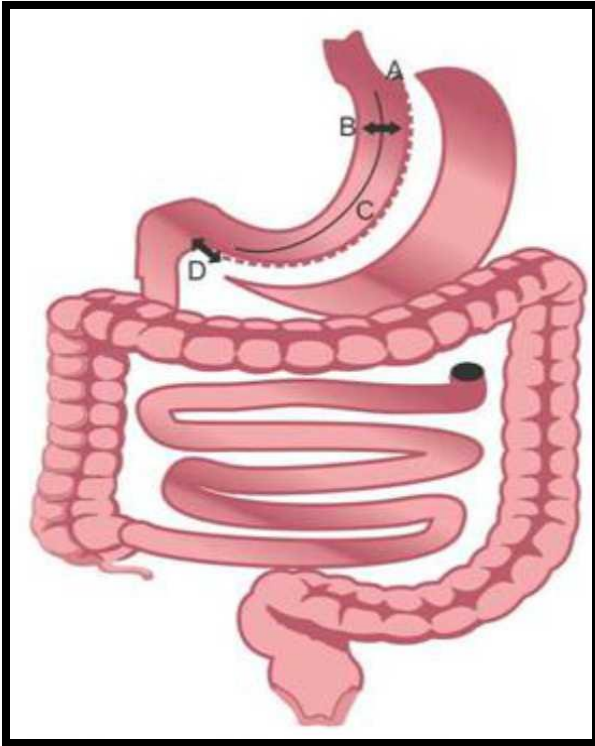
Affiliations

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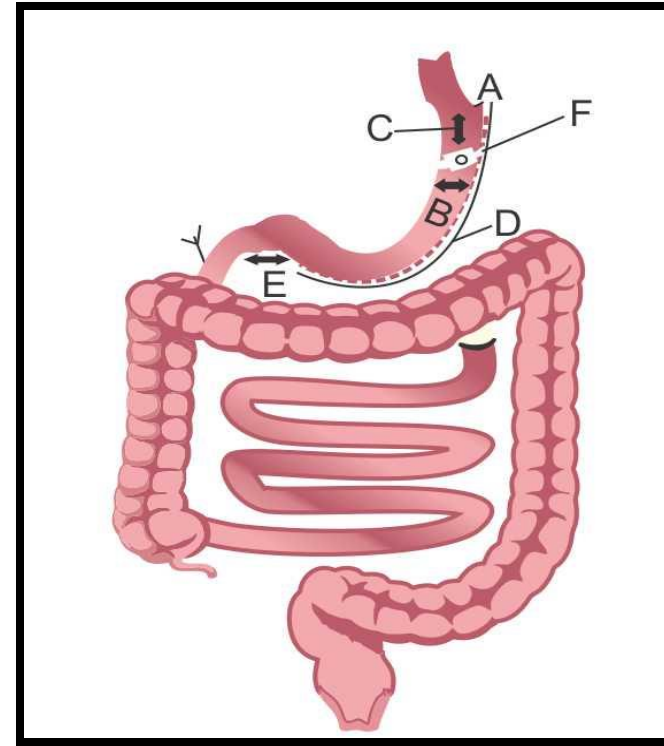


We have also published a research paper based on the meeting held for standardization of bariatric metabolic procedures (PMID: 31297742 DOI:10.1007/s11695-019-04032-x).

Standardization of the Operations

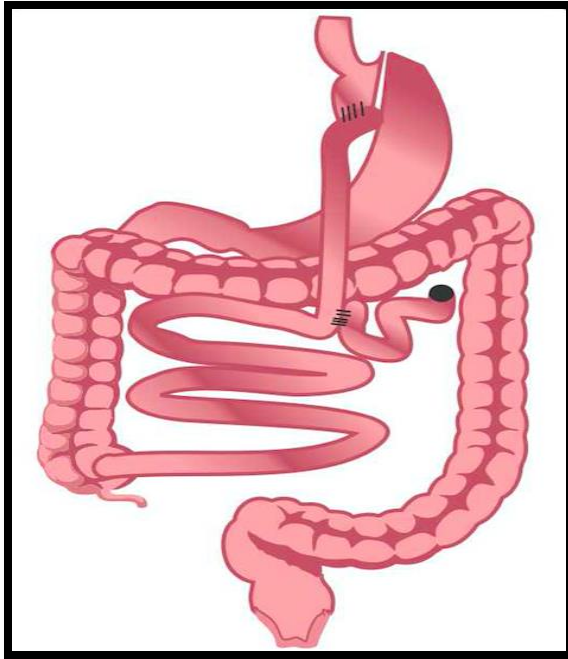


Sleeve Gastrectomy (SG)

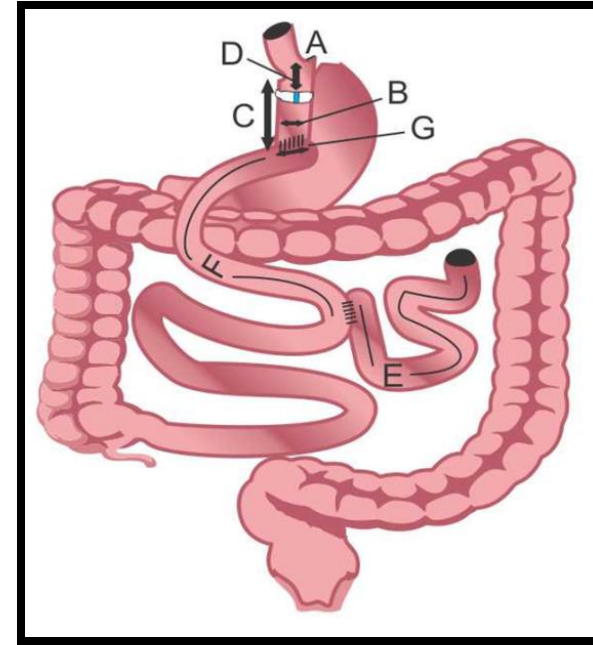


Banded Sleeve Gastrectomy (BSG)

Standardization of the operations

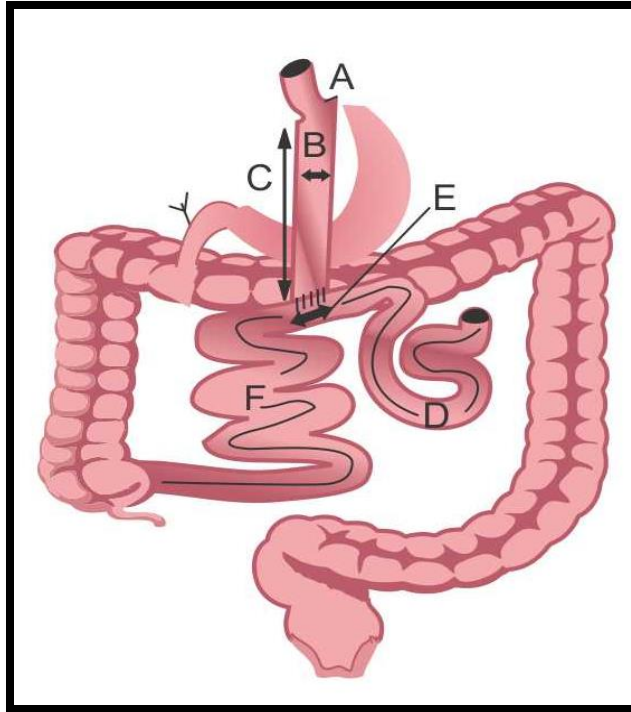


STANDARD GASTRIC BYPASS (GBP)

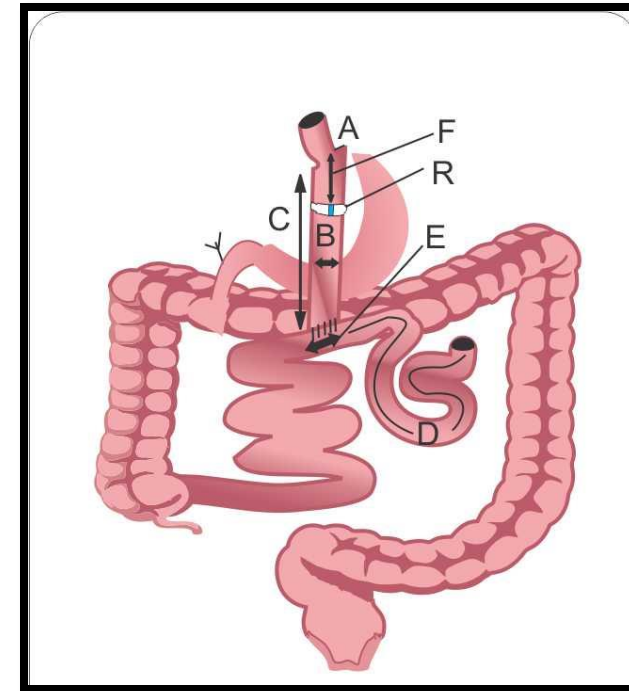


BANDED GASTRIC BYPASS (BGBP)

Standardization of the operations

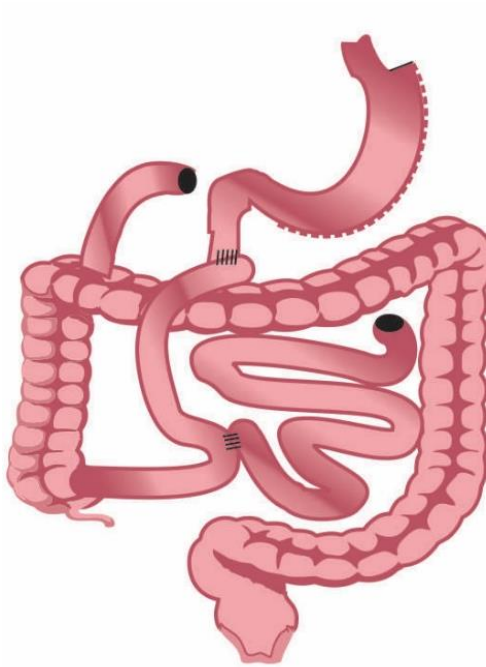


**One Anastomosis Gastric
Bypass (OAGB)**

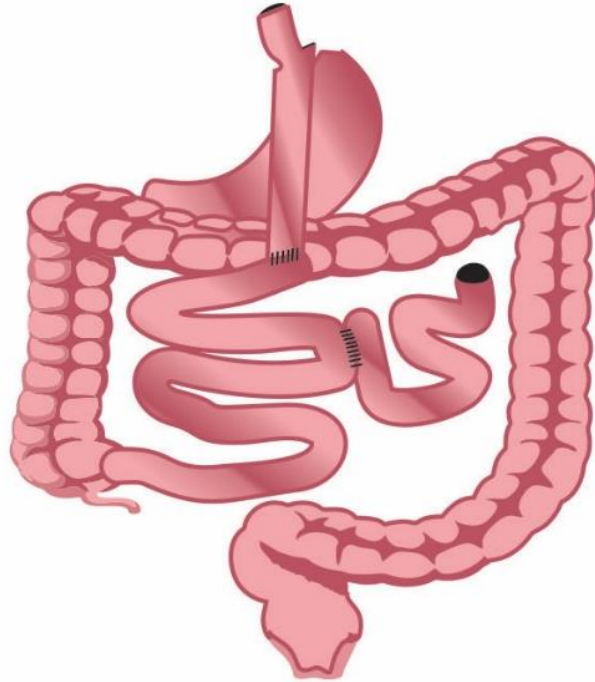


**Banded One Anastomosis Gastric
Bypass (BOAGB)**

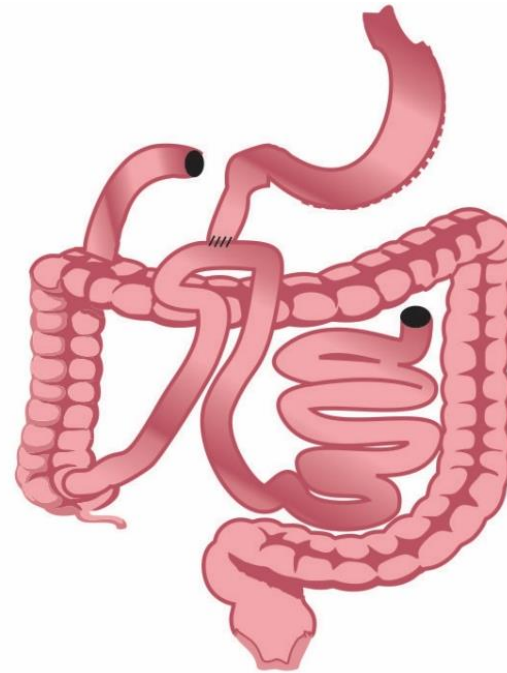
Standardization of the operations



BPD - DS

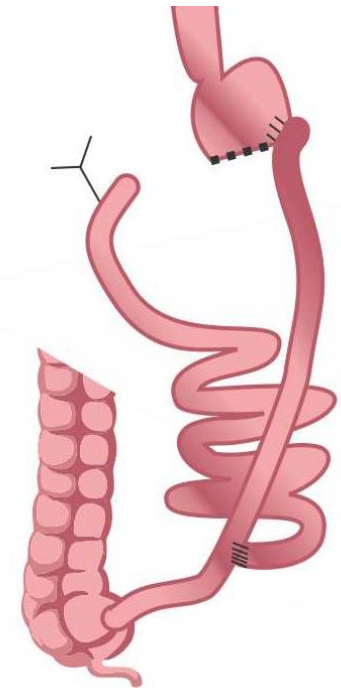


DIVERTED OAGB/MGB



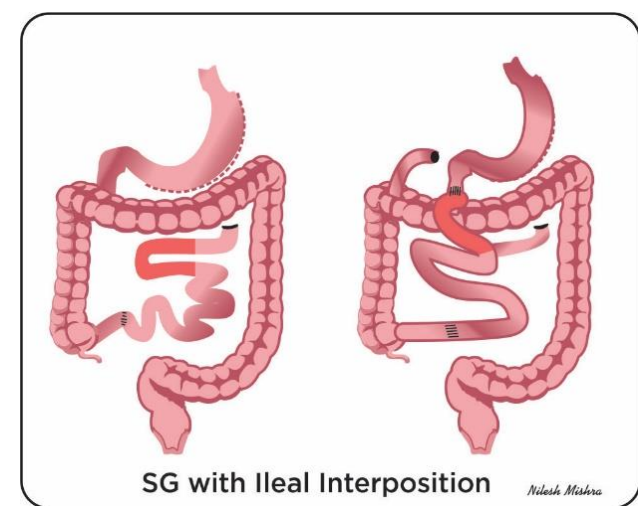
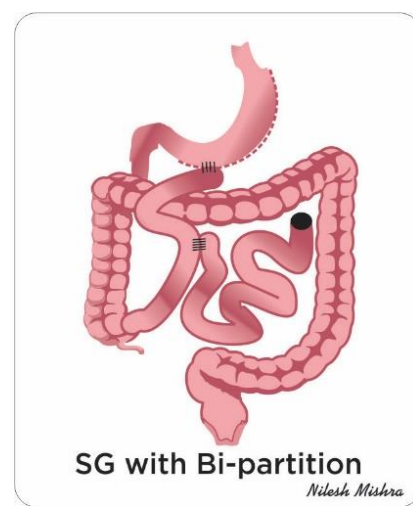
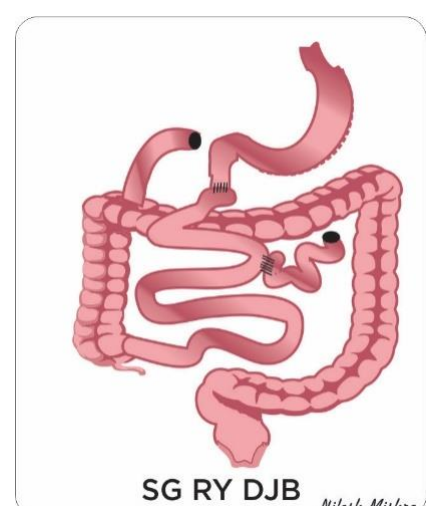
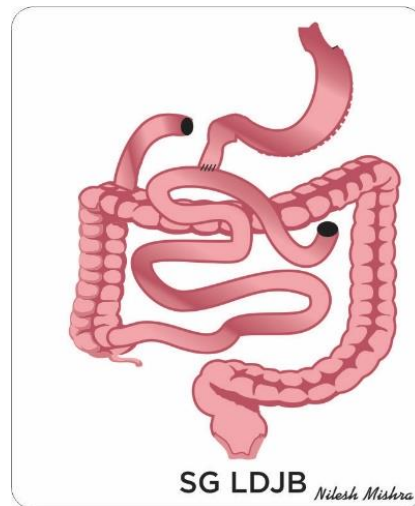
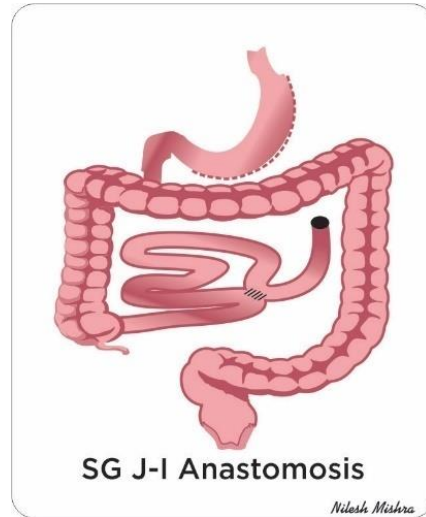
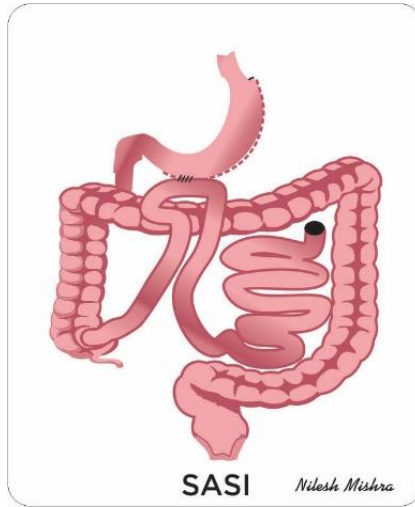
SADI

Nilesh Mishra



BPD

Standardization of the operations



Development of algorithm for choice of Operation for the patients

Evidence based operations performed at MBRSC From 2010 to 2017---Standardized Operations

Laparoscopic Sleeve Gastrectomy

- 90-120 cc Sleeve
- 2-5cm from pylorus
- Where a sleeve is indicated but a band is contraindicated or not affordable

Banded Sleeve Gastrectomy (BSG) 84% EWL after 60 months

- 90-120 cc Sleeve
- 2-5cm from pylorus
- Ring 6.5-7.5 cm
- At 3-6 cm below GE junction

Banded Gastric bypass (BGBP) 75% EWL 48 months

- Create 6—7cm long **pouch**
- 6.5-7.5 cm ring at 3-5 cm below GE junction and >2cm above anastomosis
- Large Gastroenterostomy > 2cm
- 100cm Roux Limb and 80 cm BP limb for BMI<50
- 100cm Roux Limb and 150 cm BP limb for BMI>50

Mini-Gastric Bypass (MGB) (OAGB) 79% EWL 60 months

- 9-18cm long pouch ~2.5cm wide
- BP Limb length of 180cm BMI<50

Banded Mini-Gastric Bypass(BMGB)(BOAGB)

- 9-18cm long pouch ~2.5cm wide
- Ring 7-7.5 cm
- BP Limb length of 180cm BMI50

Development of Algorithm

Sleeve Gastrectomy (LSG) or Banded Sleeve Gastrectomy (BSG)

- Non-diabetics
- No hiatal hernia or GERD
- H/O Smoking
- H/O alcohol use
- H/O PUD
- Abnormal LFTs. NASH and early Cirrhosis
- Pts. from areas with high incidence of gastric cancer or H pylori infection
- High risks patients and super obese patients as part of a two-staged operation

Gastric Bypass (LGBP) or Banded Gastric Bypass (BGBP)

- Have T2DM with HgbA1c < 8, and duration < 5 years
- Have Hiatal hernia or GERD
- Are Vegetarian
- No nicotine addiction (smoking)
- Have H/O Alcohol intake
- Have NASH at surgery-No cirrhosis
- Not likely to come back for follow up and
- Revision operation of Failed Sleeve gastrectomy, GBP or MGB

Development of Algorithm

One Anastomosis Gastric Bypass-Mini-Gastric Bypass (OAGBP-MGB)

- Have T2DM with HgbA1c ≥ 8 and duration >5 years
- Have No GERD
- Are Non-vegetarian
- Have poor dentition
- **Most likely to return for follow up at the clinic**
- No H/O alcohol intake
- No Nicotine addiction (smoking)
- Normal LFTs.
- No NASH at surgery or cirrhosis
- **Commitment by our program to have 100% follow up of these patient**

Revision Operation

- Sleeve to Banded RY with 100 cm AL limb and 180 cm BP Limb
- MGB to diverted MGB for Reflux .Existing BPL and 100cm AL
- MGB to GBP for PCM or reversal to normal anatomy for PCM—interim gastrostomy feeding
- GBP to BGBP with 180cm BP limb for Weight regain or inadequate weight loss BMI <40
- GBP to BGBP with 300cm common limb for Weight regain or inadequate weight loss BMI >40

Choice of Bariatric Metabolic Surgery Operations

These other operations are used selectively based on patients needs and the surgeons determination

- Gastric Bypass
- Sleeve Gastrectomy
- Mini-Gastric Bypass
- Biliopancreatic Diversion with DS.
- Single Anastomosis Duodeno-ileostomy
- Gastric Plication
- Banded Gastric Plication
- Endoscopic Gastroplasty
- Adjustable Gastric bands
- Balloon Implantation
- Ileal interposition

Choice of Bariatric Metabolic Surgery Operations

Single incision laparoscopic and robotic approaches are available at patients' requests and the discretion of the surgeon

The platform came before the innovation

2017

THE PLATFORM BEGINS

A multidisciplinary quality system is built around bariatric care.

2020

GLOBAL EXPERTISE JOINS

Professor Manoel Galvão Neto joins and strengthens endoscopy, teaching and innovation.

2021

ALLURION IN INDIA

The swallowable-balloon pathway expands care beyond conventional surgery.

The lesson: partnerships and process architecture preceded every major technology leap.



Dr Manoel Galvao Neto

Clinical Director- Dept Bariatric Endoscopy
Mohak Bariatric and Robotic Surgery Center
Indore- Mumbai- Hyderabad- Bangaluru



Routine Intraoperative endoscopy exams

- Routine intra-operative EGD
- Patients are consented for the endoscopy and the possibility of altering the choice of the operation is discussed with the patient.
- The alternate operations is consented for by the patient.

Routine Intraoperative endoscopy exams

- **Intraoperative Endoscopy**

- ✓ Do-able
- ✓ Cost effective
- ✓ Safe
- ✓ Convenient for patient and surgeon
- Helps in the diagnosis of asymptomatic UGI pathology like severe esophagitis, gastric ulcers, polyps etc.
- *The solution to the controversy on pre bariatric procedures endoscopy*

Endoscopy as part of routine Post Operative CARE

**Endoscopy as part of routine
postoperative check up in patients with
sleeves and OAGB**

Introduction

Bariatric and metabolic endoscopy procedures efficiently replicate some of the anatomical features and the physiological effects of the traditional weight-loss surgical approaches, while at the same time being more applicable, entirely reversible, less-invasive, safer and more cost effective

Less invasive

Reversible

Repeated

Low cost

Where Bariatric Endoscopy Fits

- **Between Lifestyle/Medications and Surgery:**

It offers a *less invasive option* for weight loss **before** considering surgery or **instead of** surgery for selected patients.

- **Before Surgery ("Bridge Therapy"):**

For *high-risk, severely obese patients* who need weight loss to safely undergo bariatric surgery (example: ESG – Endoscopic Sleeve Gastroplasty).

- **Primary Therapy (for Weight Loss):**

As the **main treatment** in patients who don't qualify for surgery or decline surgery (example: Intragastric balloon, ESG).

- **After Surgery (Revisional/Salvage Therapy):**

To manage *weight regain* or *complications* after bariatric surgery (example: transoral outlet reduction - TORe after gastric bypass).

Patient Selection:

Situation	Endoscopic Option	Key Criteria
Primary weight loss therapy	Intragastric Balloon, ESG	BMI 30–40 kg/m ² (or 27+ with comorbidities); no large hiatal hernia or severe reflux
Bridge to surgery	Balloon, ESG	BMI >50 kg/m ² ; need for pre-surgical weight reduction
Post-surgery weight regain	TORe, Re-suturing	Enlarged gastrojejunal anastomosis, dilated gastric pouch
Complications post-surgery	Stent placement, endoscopic drainage	Staple line leaks, fistulas, marginal ulcers

Endoscopic treatment of obesity : New technologies

PRIMARY THERAPY

- Intra Gastric Balloons
- Tissue Apposition Techniques
 - Surgery Endoscopic sleeve gastroplasty (ESG)
- Nutrient Diverting Therapies
 - Endobarrier
 - Magnet anastomosis
 - Mucosal resurfacing

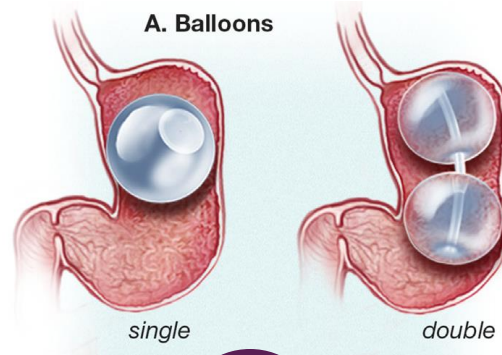
Endoscopic treatment of obesity : New technologies

SECONDARY THERAPY (for weight regain after surgery)

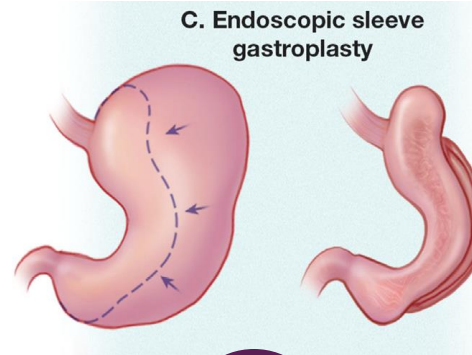
- Trans Oral Outlet Reduction
- Revision Obesity Surgery Endoscopic
- Argon Plasma Coagulation

Interventions on the Stomach

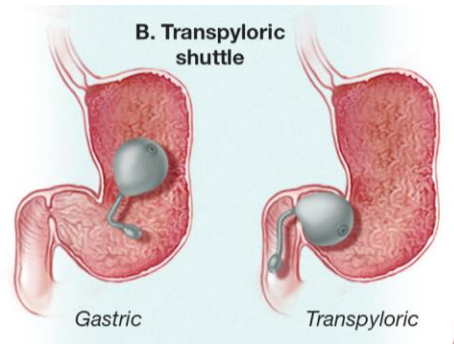
Endoscopic Bariatric Therapies



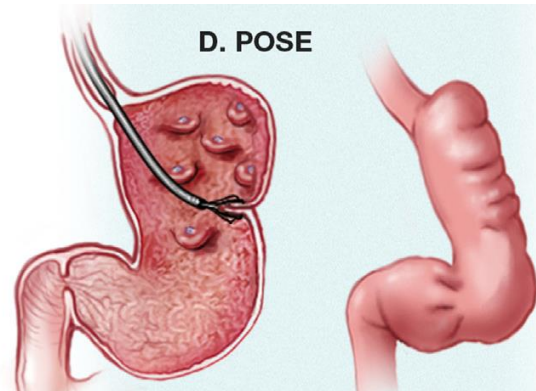
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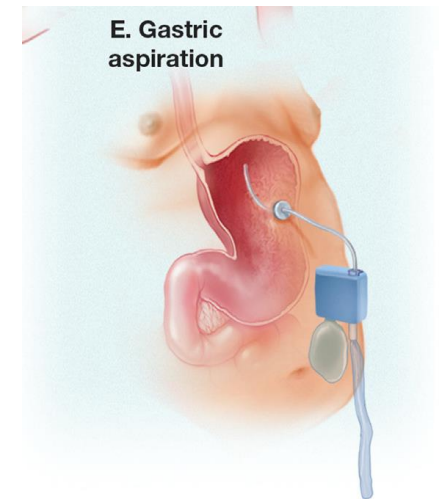
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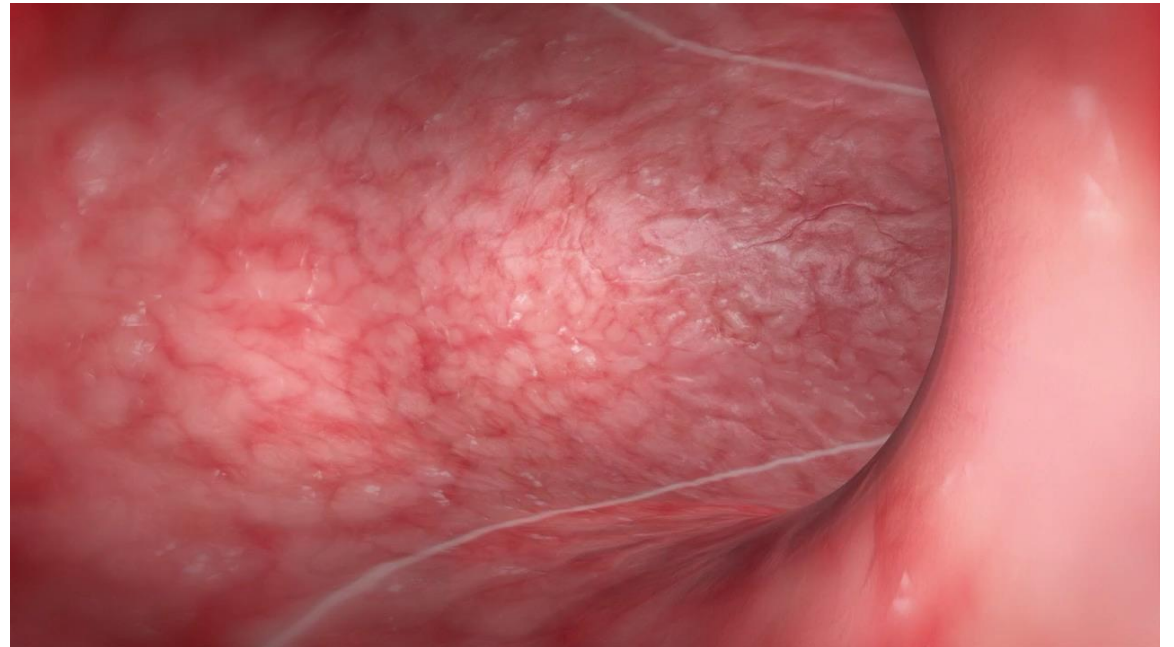
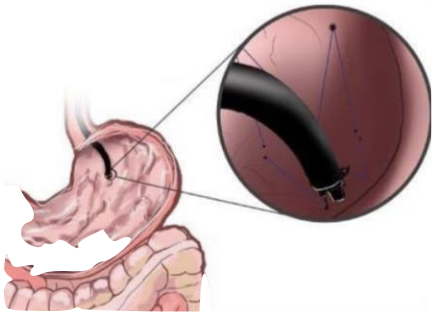


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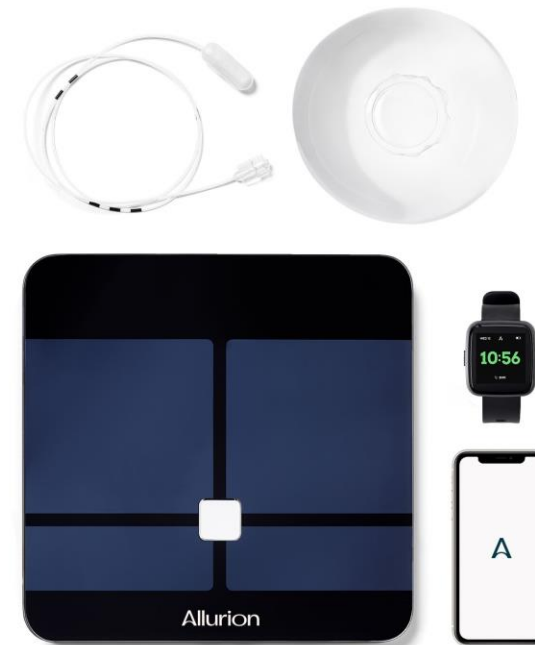
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Endoscopic Gastroplasty

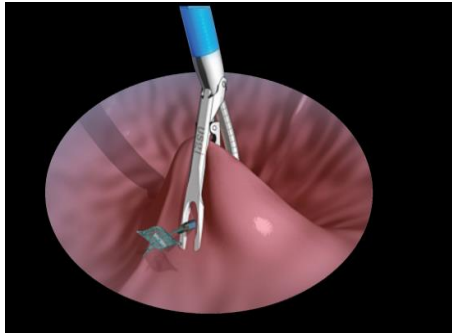
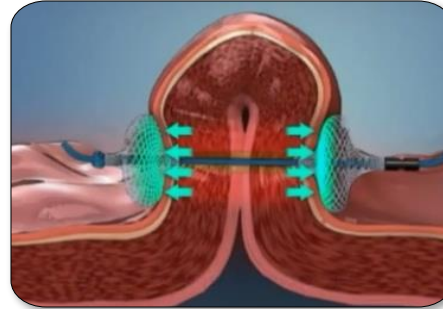
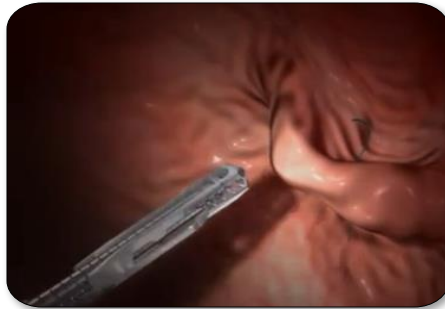


FUTURE TRENDS FOR OBESITY & DIABETES

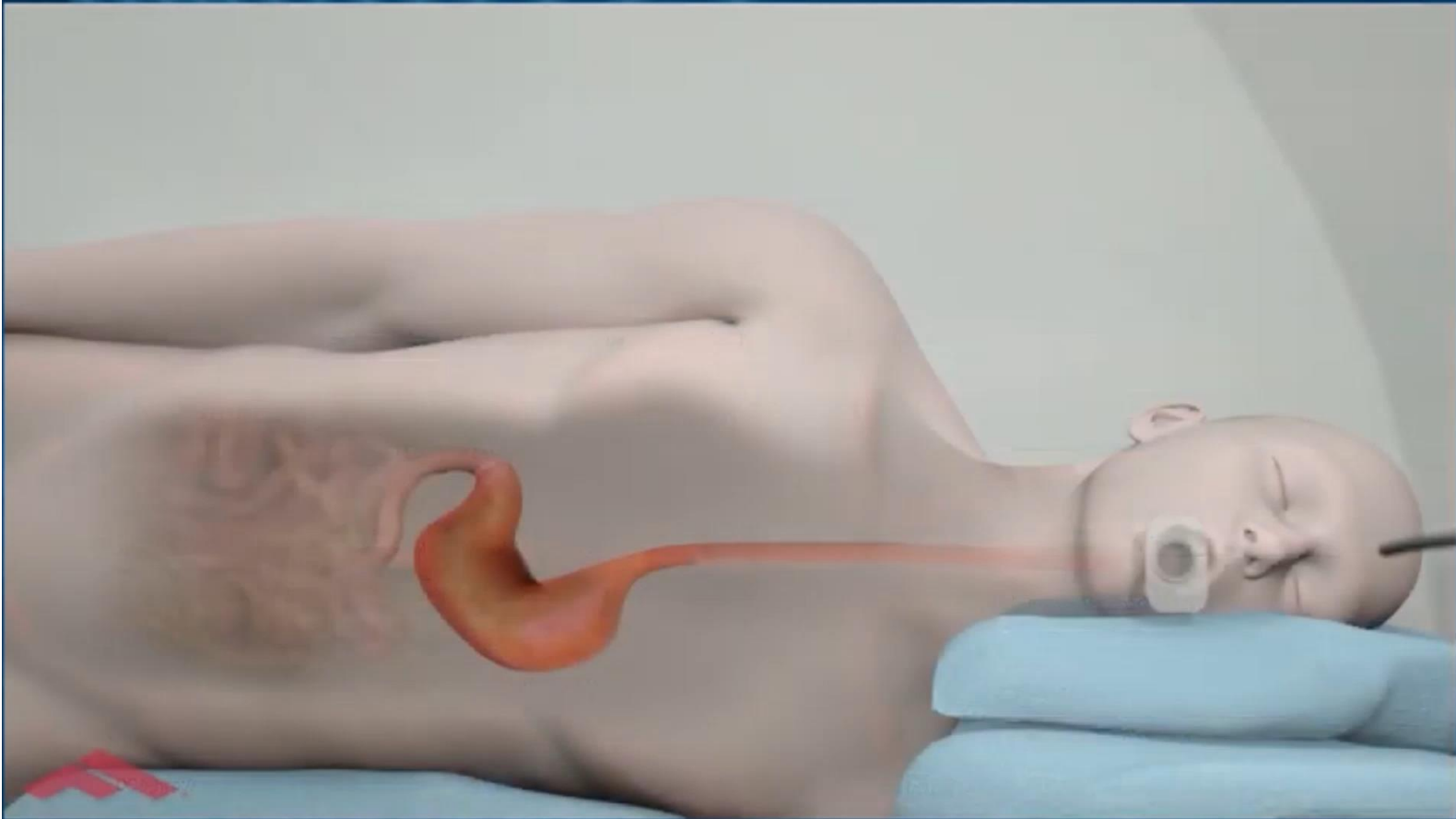
Swallow Balloon



Primary Obesity Endolumenal Surgery (POSE)



Mucosal resurfacing



Magnet anastomosis

- Magnetic compression anastomosis (magnamosis) uses a pair of self-centering magnetic "Harrison Rings" to create an intestinal anastomosis without sutures or staples.
- Each magnet is placed within the lumen of a desired segment of the intestine and brought together, or "mated."
- The magnets then pass through the bowel



The program expanded without losing its discipline

2022

COMBINATION THERAPY

Medicines combine with procedural treatment.

2023–25

ROBOTICS + IRCAD

Largest-volume robotic bariatric program; IRCAD comes to India.

2025

MAGNETIC SURGERY

Magnetic anastomosis: precision made more reproducible.

2026

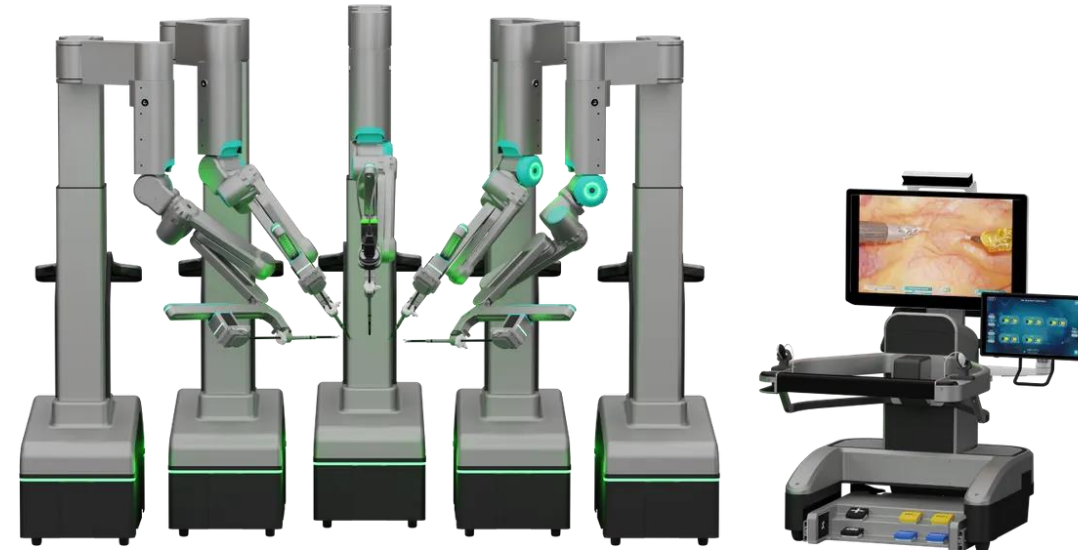
TELESURGERY + MEDICINE

Remote surgery matures. Prof. David Cummings leads Obesity Medicine.

CLINICAL TRIALS • DRUGS + ENDOSCOPY | DRUGS + SURGERY

Technological Infrastructure

- Robotic System: SSI Innovations (Made in India)
- Communication: 1 Gbps fiber-optic with backup
- For long distance MPLS line (point to point connectivity)
- Latency: < 14 ms
- HD 3D video feed
- Secure control interface

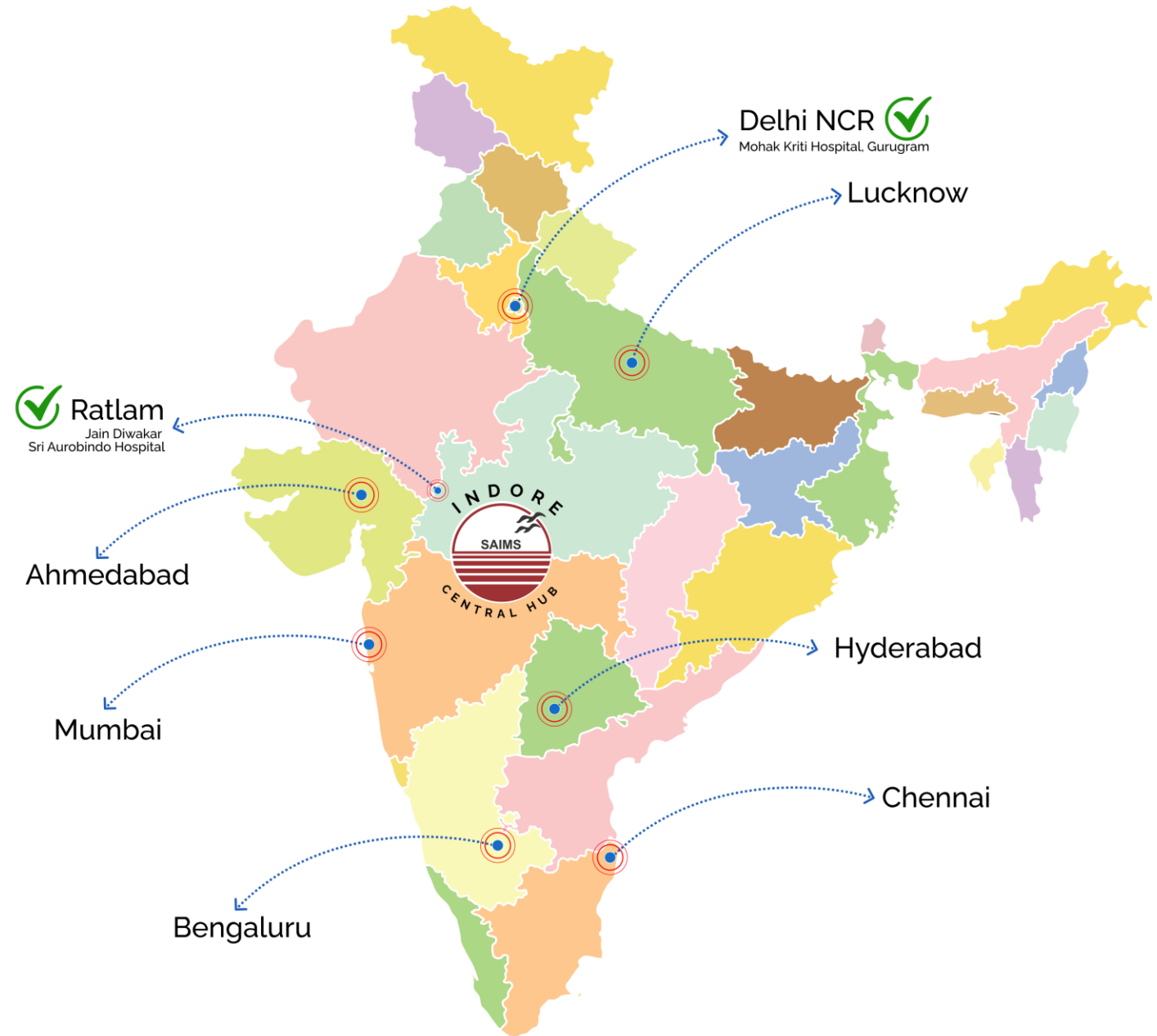


ROBOTIC OAGB with OTOTLoc™

EXPANDING TELE-ROBOTIC SURGERY

NETWORK – POWERED FROM INDORE

Delivering Advanced General, Bariatric & Obs-Gyne Surgeries to Network Hospitals



1	SSi HQ, Gurugram
2	RGCI Hospital, New Delhi
3	Aster CMI Hospital Bengaluru, Karnataka
4	Marengo Asia Hospitals, Faridabad
5	Marengo Asia Hospitals, Gurugram
6	Marengo Asia Hospitals, Ahemdabad
7	Dr. SPS Home, New Delhi
8	Ruban Hospital, Patna, Bihar
9	Manipal Hospital, Jaipur
10	GMC Hospital, Nagpur, Maharashtra
11	Fortis Escort Hospital, New Delhi
12	Preeti Hospital, Hyderabad
13	Apex Hospital, Moradabad
14	Tirumala Medcover Hospitals, Andhra Pradesh
15	SAIMS IRCAD Hospital, Indore, Madhya Pradesh
16	Her Health Hospital, Bhopal, Madhya Pradesh
17	Prashanth Hospital, Chennai, Tamilnadu
18	Dharan Hospital, Salem, Tamilnadu
19	Fortis Flt Lt Rajan Dhall Hospital, Vasant Kunj, New Delhi
20	Yenepoya Univercity Medical College, Manglore
21	Swagat Super Speciality Hospital, Guwahati, Asam
22	Apollo Speciality Hospitals Vanagaram, Chennai
23	Fortis Escorts Hospital, Jaipur
24	Fortis Hospital and Kidney Institute, Kolkata, West Bengal
25	Kriti Hospital, Gurugram, Haryana
26	Apollo Proton Cancer Centre, Tharamani, Chennai
27	Dr. Kamlesh. Tandon Hospital & Test Tube Baby Centre, Agra, Uttar Pradesh
28	Malla Reddy Narayana Hospital, Hyderabad, Telangana
29	Jain Diwakar Sri Aurobindo Hospital, Ratlam, Madhya Pradesh
30	Shanti Memorial Hospital, Cuttack, Odisha
31	Dr. Prem Super-Speciality & Cancer Hospital, Panipat, Haryana
32	Apollo Cancer Centres, Hyderabad, Telangana
33	Apollo Hospital, Aragonda, Andhra Pradesh
34	Hindusthan Hospital, Coimbatore, Tamil Nadu
35	Prakriya Hospitals, Bengaluru, Karnataka
36	Shantiraj Hospital, Udaipur, Rajasthan
37	Metro Heart Institute with Multispeciality, Faridabad, Haryana
38	Sri Sathya Sai General Hospital, Puttaparthi, Andhra Pradesh
39	Assam Medical College and Hospital, Dibrugarh, Assam

Build a system-dependent program

SYSTEM > HEROICS

Individual brilliance matters.
But consistency comes from design.

01

PREPARE

Patient selection, optimization and a shared operative plan

02

EXECUTE

Standard instruments, steps, roles and escalation pathways

03

RECOVER

Predictable analgesia, mobility, discharge and surveillance

The operation became one step in the care pathway.

Reduce variation before chasing speed

STANDARDIZE

- Core operative sequence
- Instrument set-up
- Team roles and call-outs
- Complication algorithms

PERSONALIZE

- Anatomy and prior surgery
- Metabolic risk
- Revision strategy
- Procedure selection

CONSISTENCY ≠ RIGIDITY

Create a dedicated bariatric team

One team. One rhythm. One language.



At high volume, the greatest safety advantage is a team that anticipates the next step before it is spoken.

Adopt technology only when it improves the system

PRECISION

Robotics + advanced
endoscopy

ROBOTICS

REPRODUCIBILITY

Standardized expert-level
execution

ENDOSCOPY

REACH

Telesurgery + remote
mentoring

TELESURGERY

MAGNETS

Technology was the means; safer, repeatable care was the goal.

Make the clinical program accountable to evidence

MEASURE → **AUDIT** → **PUBLISH** → **IMPROVE**

Prospective databases and publications turn activity into learning.

DRUGS + ENDOSCOPY

Trials test whether combined pathways outperform isolated treatments.

DRUGS + SURGERY

Evidence guides sequencing, selection and long-term maintenance.

Use volume as a learning engine

1,800–
2,000+

cases every year at mature scale

Exposure compounds judgment—
when every case is captured and reviewed.

WHAT SCALE TRAINED US TO SEE

- Rare anatomy becomes recognizable
- Revision patterns become predictable
- Early warning signals become visible

Measured volume turns activity into mastery.

Build an ecosystem that can absorb complexity

Complexity became routine—never casual.

PRIMARY CARE

Sleeve and bypass

Metabolic surgery

COMPLEX CARE

Revisions and
conversions

Super-obesity

MULTIMODAL CARE

Advanced endoscopy

High-risk pathways

Difficult patients are managed inside an experienced infrastructure—not treated as exceptions.

Make training part of the quality system

**IRCAD
INDIA**

**Teaching became
our internal audit.**

2020

Professor Manoel Galvão Neto joins

- Structured courses and repeatable technique
- Dual-console robotic training
- Visiting international faculty
- Live clinical exposure and continuous challenge

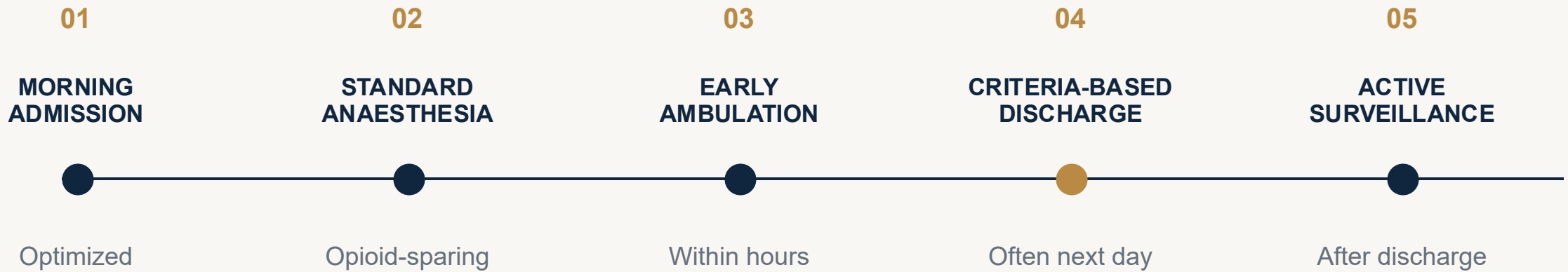
**If a method cannot be taught clearly, it has not been
standardized deeply enough.**



ircad
India



Engineer predictable recovery—not merely early discharge



Short stay is the consequence of predictable recovery—not the target itself.

Keep redesigning the model after it succeeds

SURGERY INTEGRATED OBESITY CARE

SURGERY

Durable metabolic intervention

ENDOSCOPY

Less-invasive procedural options

MEDICINES

Longitudinal obesity treatment

DATA + TRIALS

Evidence to sequence and combine

**PROFESSOR
DAVID CUMMINGS**

**Head of
Obesity Medicine**

A medical-scientific layer for
lifelong care

Allurion • Combination therapy • Robotics • Magnets • Telesurgery



Dr David E Cummings

Head of Obesity Medicine at Mohak Bariatric and Robotic Surgery Centre & IRCAD India, Indore

**The safest high-volume centre
is not the centre with the fastest surgeon.**

**It is the centre where
excellence has become routine.**

STANDARDIZE

MEASURE

TEACH

REDESIGN