



Technology & Leadership

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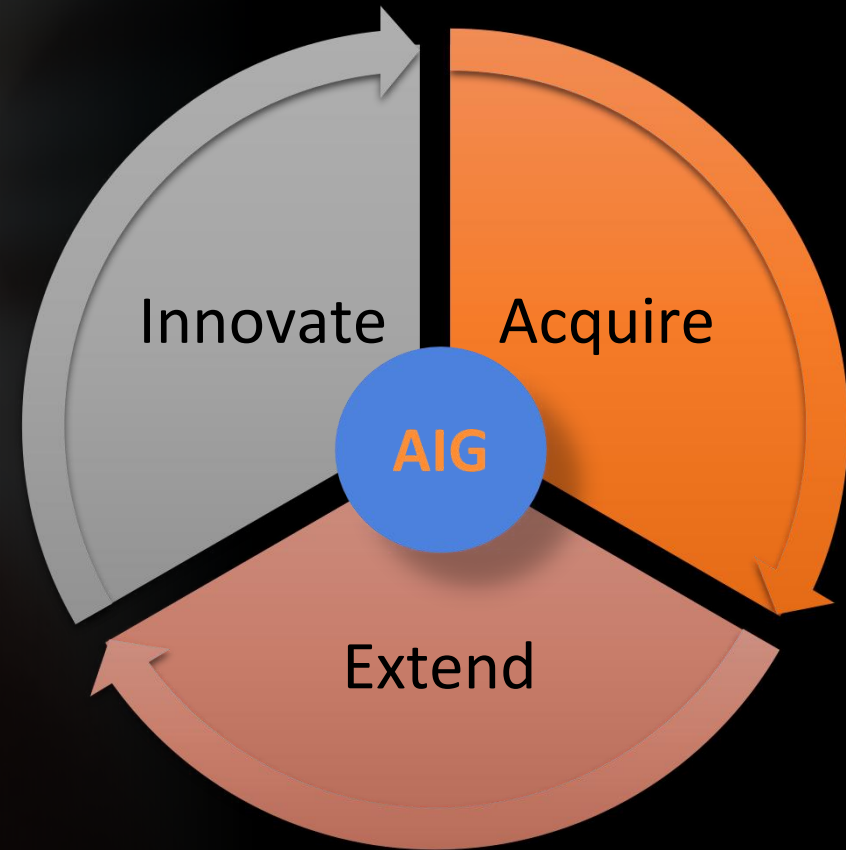
A blue signpost with two signs: 'TECHNOLOGY' and 'LEADERSHIP'. The signpost is a blue pole with a decorative finial at the top. Two rectangular signs are attached to the pole. The top sign is tilted upwards and contains the word 'TECHNOLOGY' in bold, black, sans-serif capital letters. The bottom sign is tilted downwards and contains the word 'LEADERSHIP' in bold, black, sans-serif capital letters. The background is a light gray gradient.

Technology & Leadership

- ✓ Understanding patient / customer needs
- ✓ Taking advantage of data & analytics
- ✓ Embracing new technologies & staying ahead / on par of the competition
- ✓ Collaborating with other institutions or organizations



Technology
AIG Leadership Vision



Latest Technology Con's

- ✓ Latest Tech is expensive
- ✓ Evolving
- ✓ Difficult to keep in pace with frequent upgrades
- ✓ Outcomes / collaborations are unpredictable



Is Conventional Leadership in Technology advancement optimal ? esp. with Made in India & Make in India initiatives

- ✓ West to East technology implementation has limitations
- ✓ Costs
- ✓ Indigenous / Local technology development translates to national / international visibility / recognition
- ✓ Translating to ? East to West technology implementation

LEADERSHIP

Leadership roles in Technology advancement Best Practices @ AIG



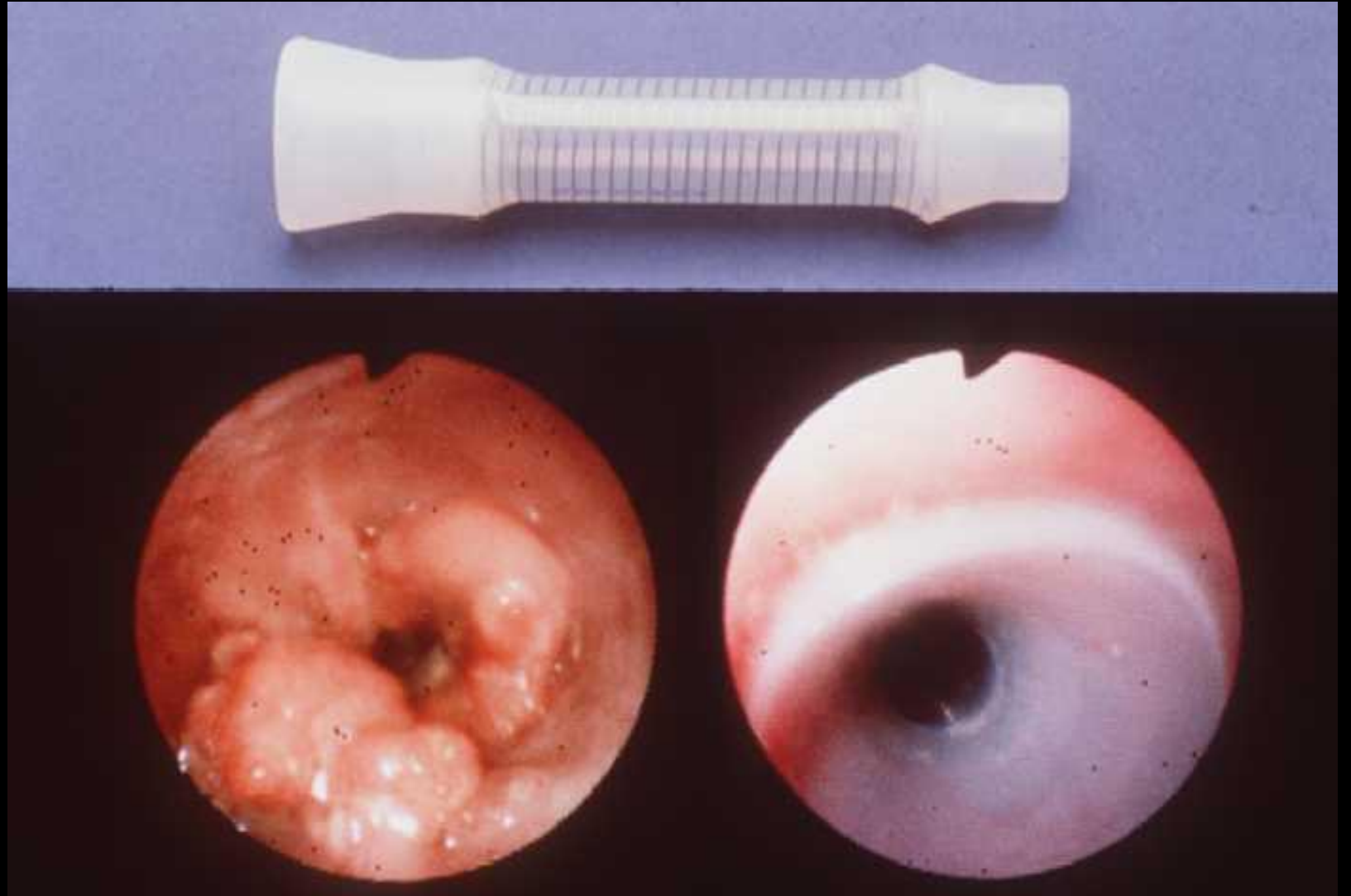
- ✓ To identify & recognize untapped inherent potential
- ✓ Identify areas of clinical / non clinical interest
- ✓ Brain storming sessions
- ✓ Involve them in those areas of interest beyond routine practice
- ✓ Supplement with specific educational courses (ISB , AIG Executive Program)
- ✓ Collaborating with National ,International Institutions & Industries

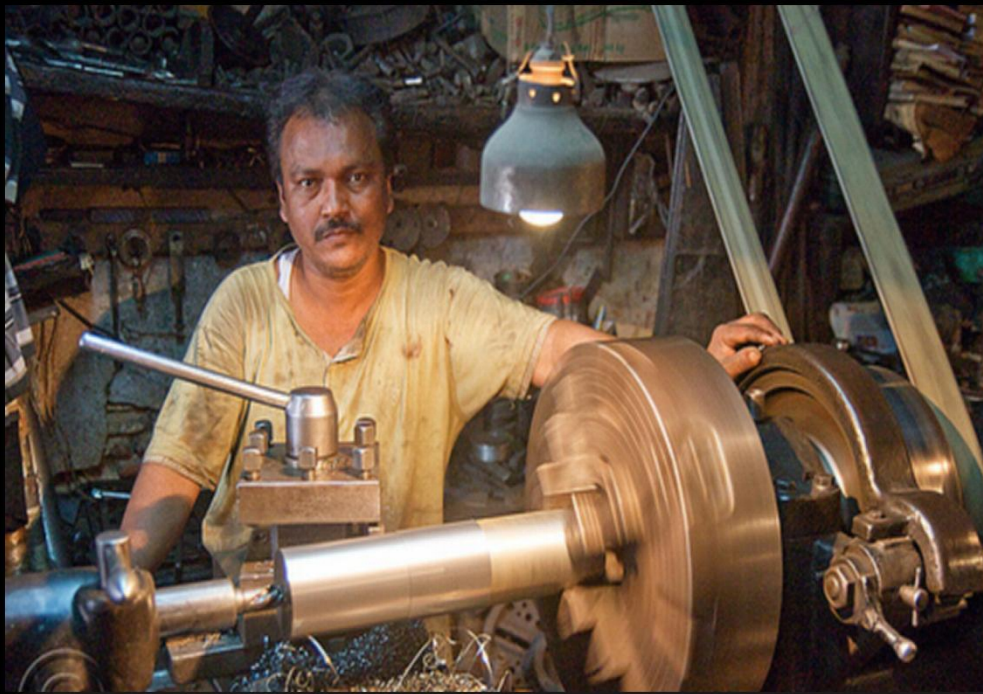
A collection of various medical device prototypes, including stents, endoprosthesis, and surgical instruments, displayed on a blue stage with spotlights. The devices are made of clear plastic or metal and are arranged on different levels of the stage.

Extending Technology Translation

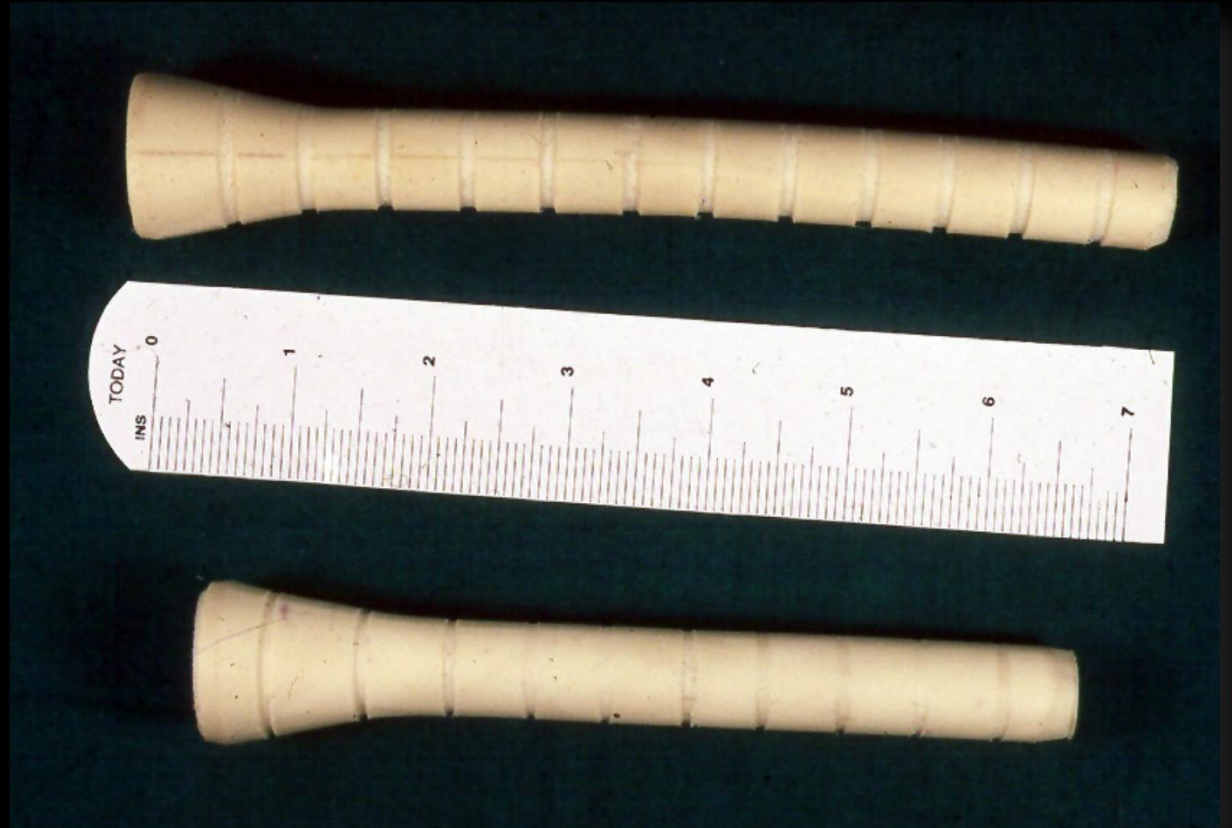
- ✓ NOTES
- ✓ Biliary , Pancreatic & Nagi Stent
- ✓ Esophageal Endoprosthesis
- ✓ Digital Spy
- ✓ Laparoscopy Endoscopy Cooperative Surgery

Oesophageal Cancer - Malignant Dysphagia

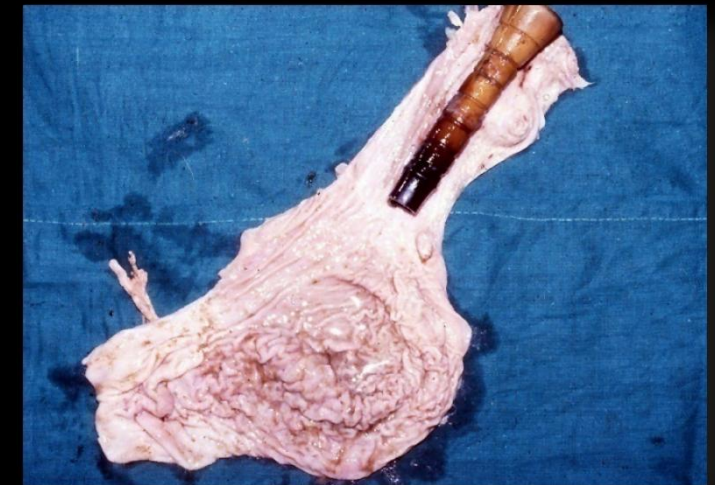




Indigenous Plastic Esophageal Endoprosthesis



Indigenous Plastic Esophageal Endoprosthesis



Rao GV Reddy DN et al ISG 1998

Rao GV, Reddy DN et al Trop Gastroenterol 1998

Indigenous Plastic Esophageal Endoprosthesis



No: 526

Technical Success 500 (95%)

Median Dysphagia Score 1.2 (1-2)

Early complications 50 (10%)

Perforation 36 (7.2%)

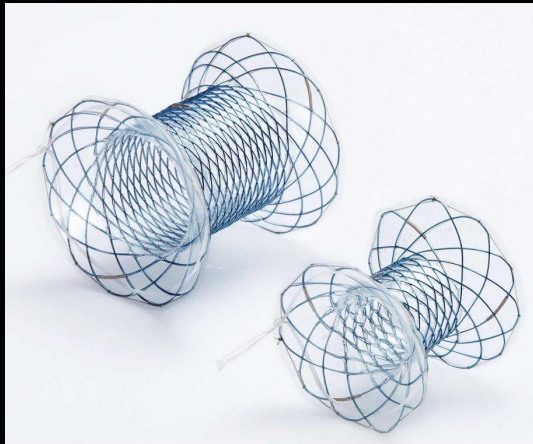
Stridor 8 (1.6%)

Bleeding 6 (1%)

Late Complications 70 (14%)

Mortality 25 (5%)

Nagi LAMS (Lumen Apposing Metal Stent) Most widely used globally for Biliopancreatic diseases



Patent : Dr D Nageshwar Reddy , AIG Hospitals

KEANU REEVES LAURENCE FISHBURNE



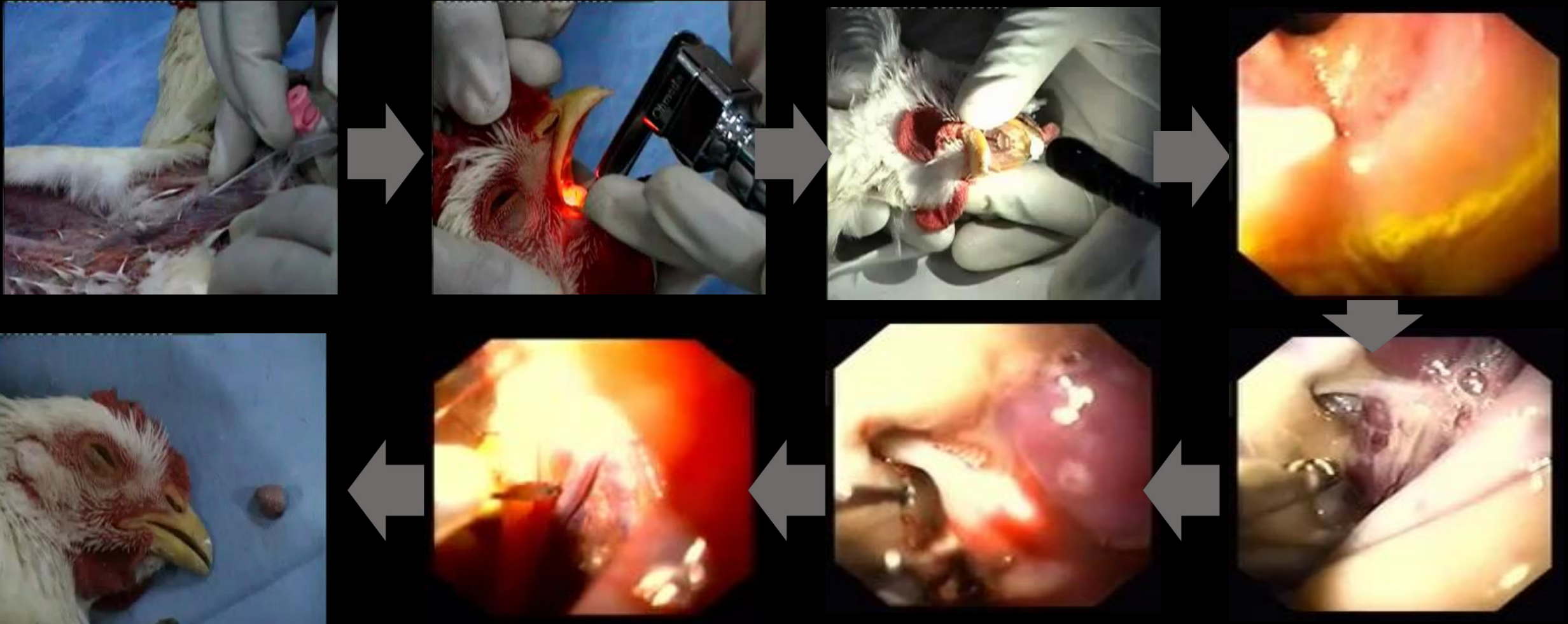
THE MATRIX

WARNER BROS. PRESENTS
A FILM BY THE WACHOWS
KEANU REEVES LAURENCE FISHBURNE "THE MATRIX" CAROL-LINE TRESS LUCY LIU JORGE LUCAS
"THE MATRIX" CASTING BY JANE WOODS COSTUME DESIGNER JEFFREY M. PERKINS
PRODUCTION DESIGNER ANDREW A. KOSOVE EXECUTIVE PRODUCERS JONATHAN PERKINS AND JONATHAN PERKINS
PRODUCED BY JONATHAN PERKINS AND JONATHAN PERKINS WRITTEN BY LAURENCE FISHBURNE AND JONATHAN PERKINS
DIRECTED BY THE WACHOWS
www.whatisthematrix.com

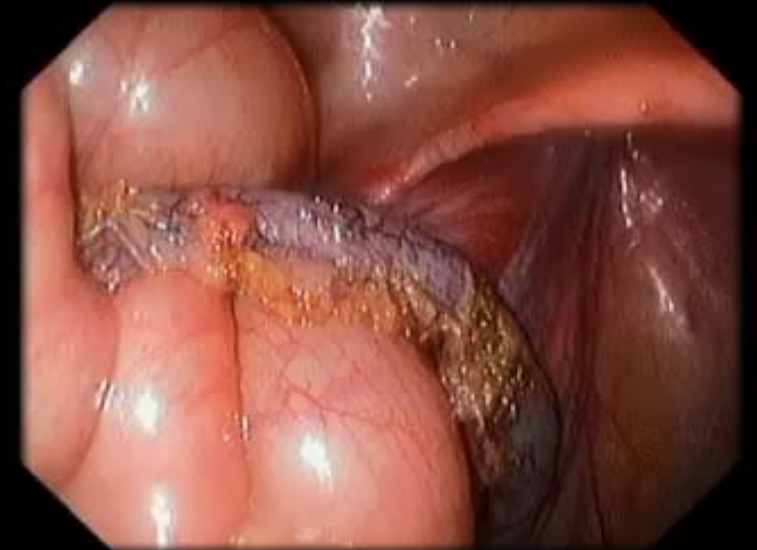
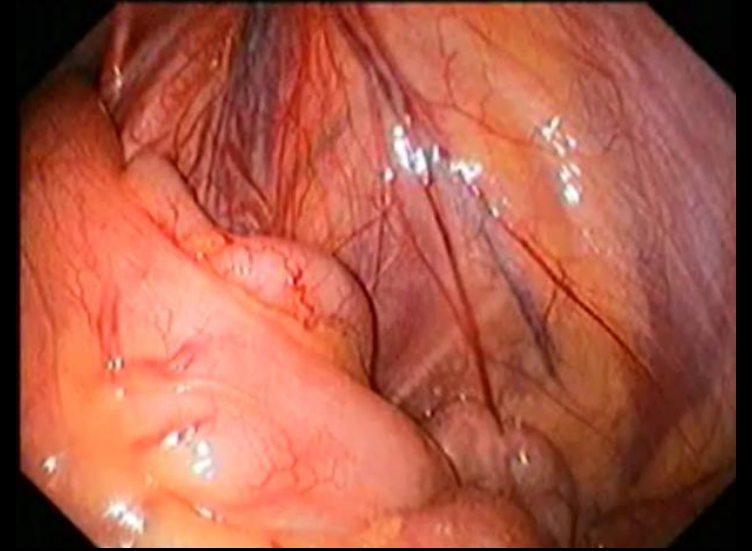
ON MARCH 31ST THE FIGHT FOR THE FUTURE BEGINS.



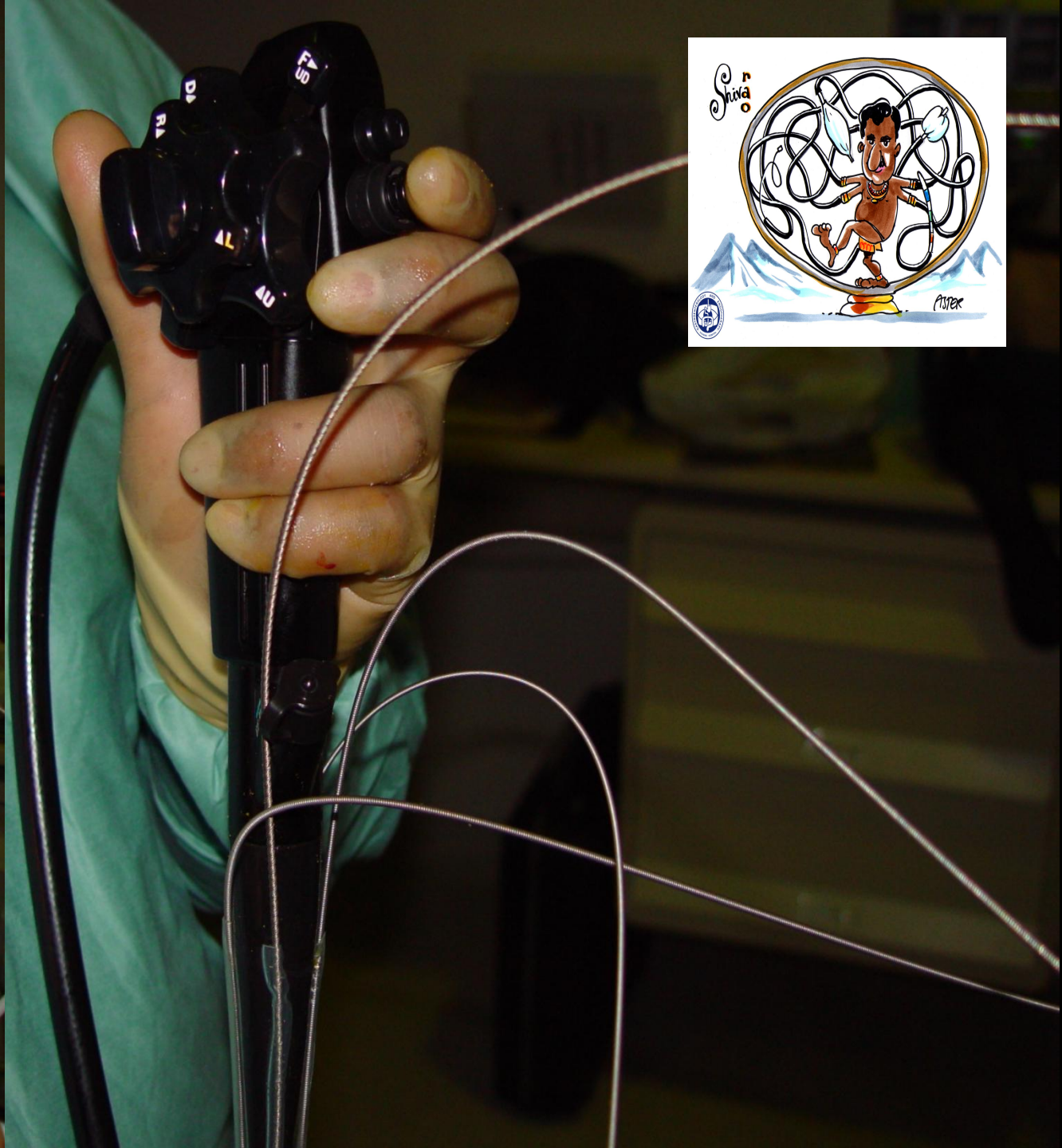
Natural Orifice Transluminal Endoscopic Surgery (NOTES) Hen Model



Natural Orifice Transluminal Endoscopic Surgery "NOTES"



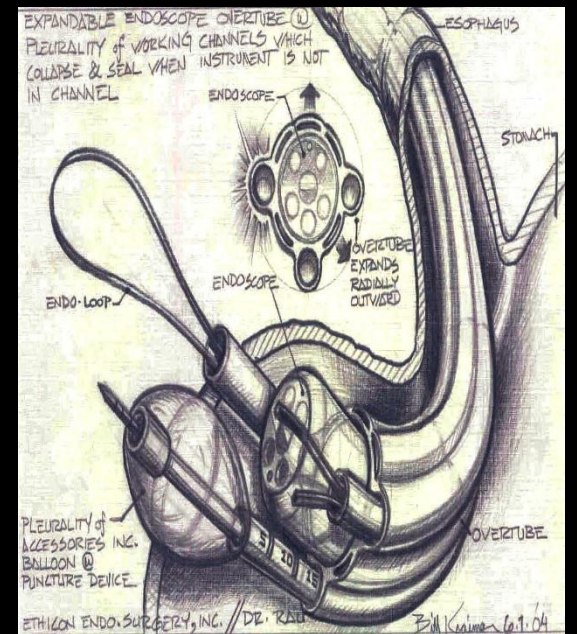
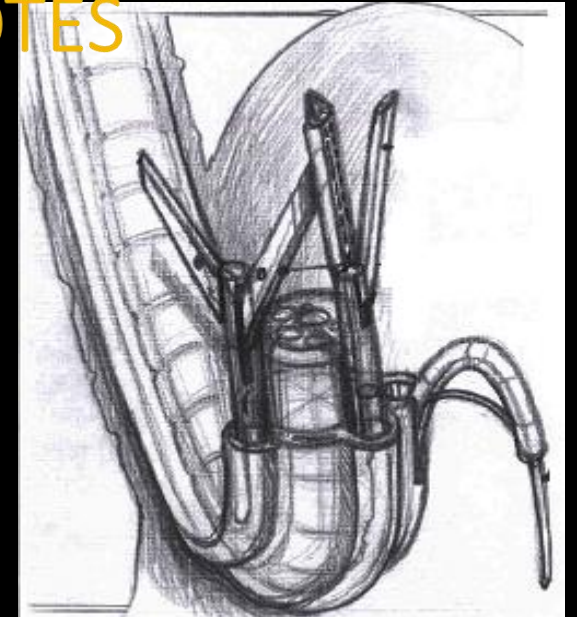
World's First Transgastric Appendectomy @ AIG



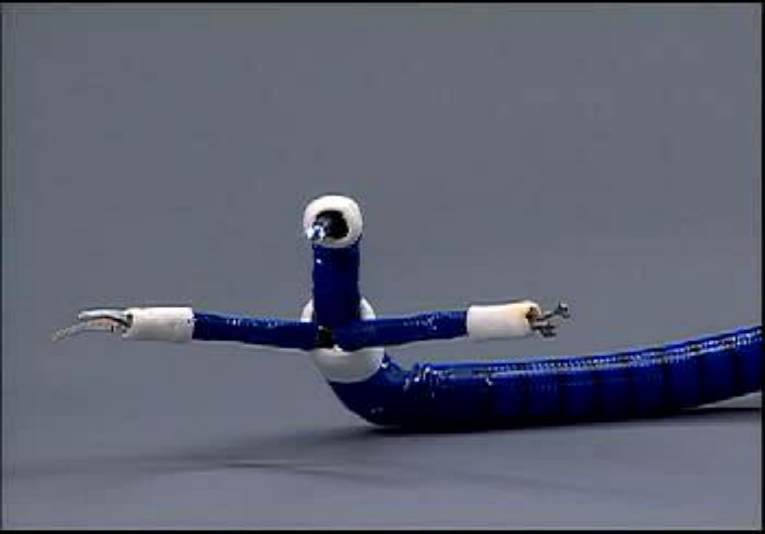


The Development and Testing of a Toolbox for NOTES

- Swain CP¹, Bergstrom M², Faigel DO³, Sheppard BC³, Rao GV⁴, Fockens P⁵, Gelrud A⁶, Park PO²
 - The NOTES Development Group ,Ethicon Endo-Surgery
 - *Disclosure: All named authors act as consultants to Ethicon Endo-Surgery*



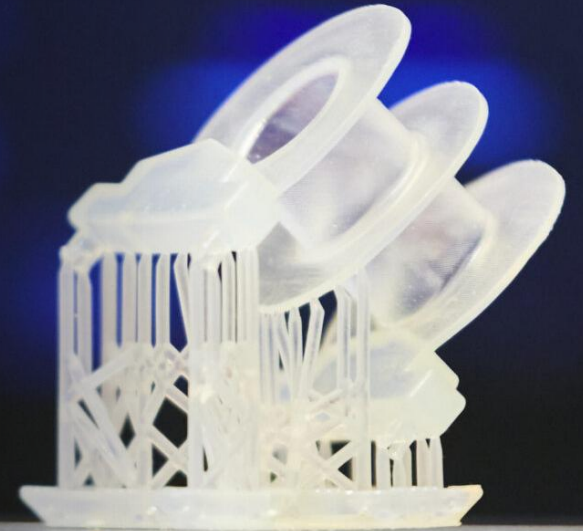
¹Imperial College, London; ²Sahlgrenska University Hospital, Goteborg, Sweden; ³Oregon Health Sciences University, Portland, Oregon; ⁴Asian Institute of Gastroenterology, Hyderabad, India; ⁵Amsterdam Medical Center, Amsterdam, The Netherlands, ⁶University of Cincinnati Medical Center, Cincinnati, Ohio



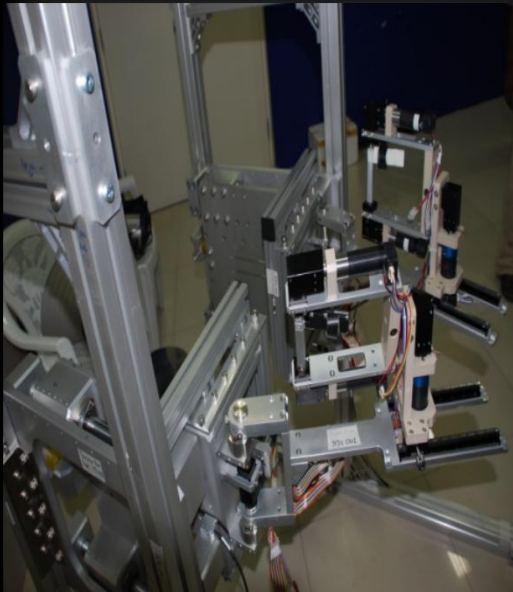
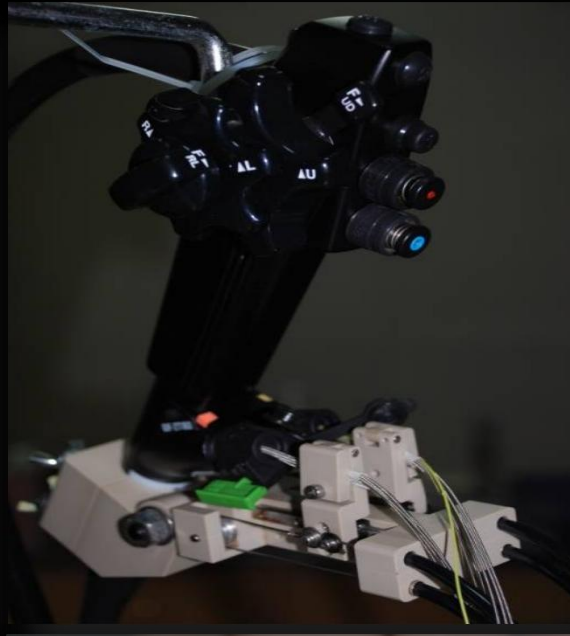
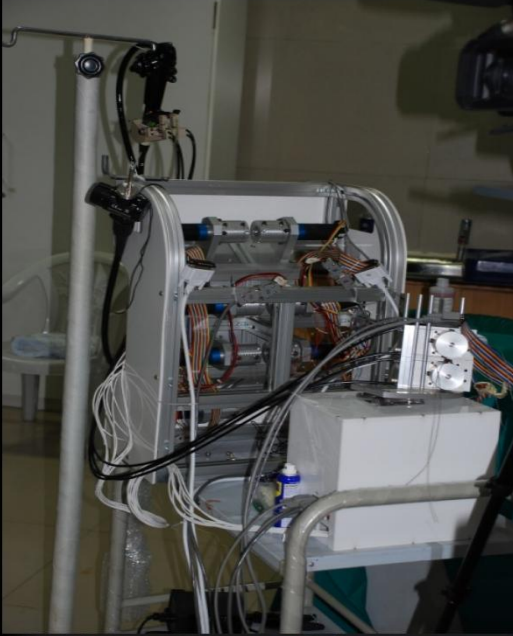
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Acquire / Involve Prototype Technology Evaluation

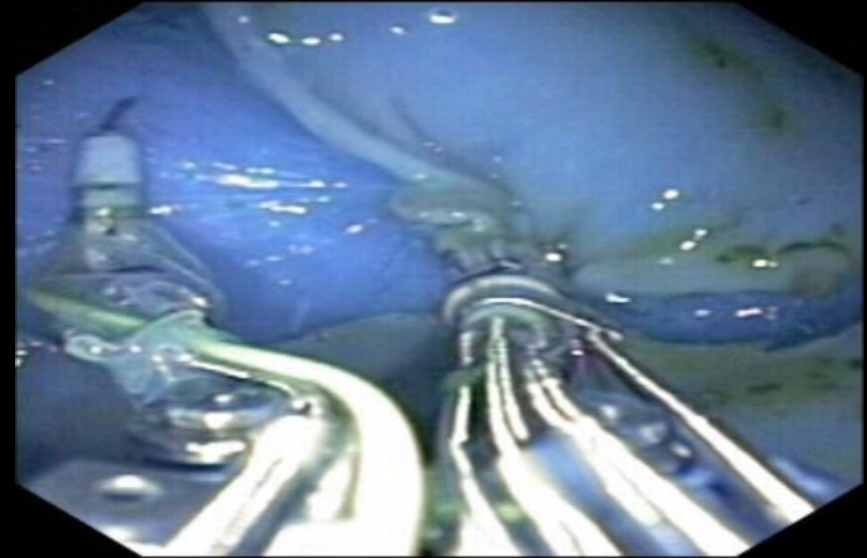
- ✓ Endo Robotics
- ✓ Endobrain
- ✓ Yellow Enhancement
- ✓ Speed Boat



Flexible Endoscopic Master Slave Robotic System



First Flexible Endoscopic Master Slave Robotic System

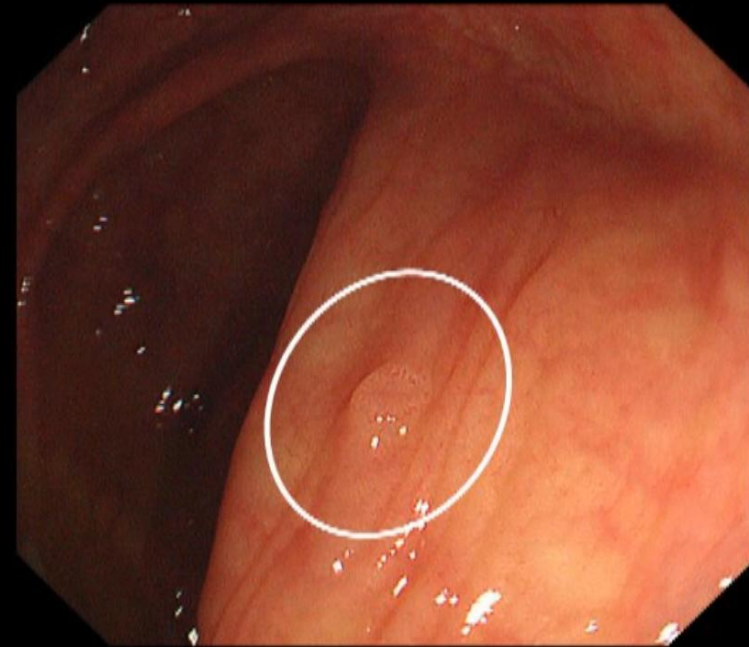


Robotics Comput Assist Surg 2008 Endoscopy 2012
Clin Gastroenterology and Hepatology 2012

EndoBRAIN (Cytoscopy + AI)



Adenoma (3mm, 0-IIa, ascending colon)







OLYMPUS

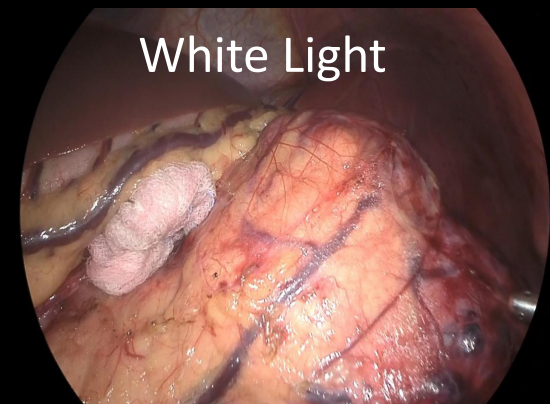
Your Vision, Our Future



Yellow Enhancement
Indo Japanese Govt Collaboration



Laparoscopic Anterior Resection White Light vs Yellow Enhancement



White Light

Yellow Enhancement

0
0

1338

YE CAF

remote switch

mode

balance

comment



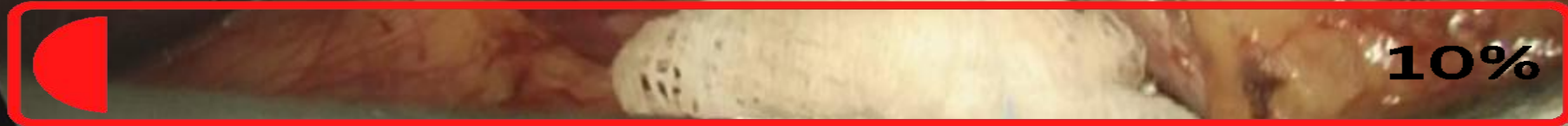
Innovate



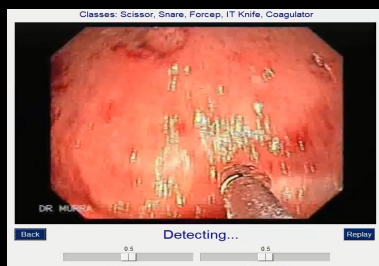
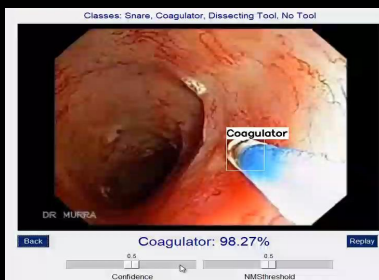
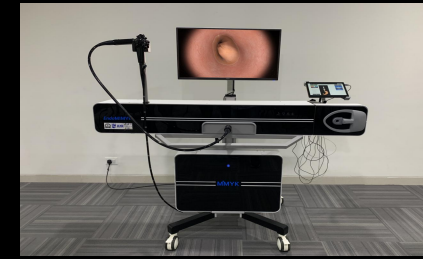
- ✓ Artificial Intelligence
- ✓ Artificial Heart
- ✓ Artificial Esophagus
- ✓ Artificial Pancreas
- ✓ Simulators



ICG Perfusion, Nodal Clearance



AI-based polyp detection by MimyK Team (AIG & IISc)



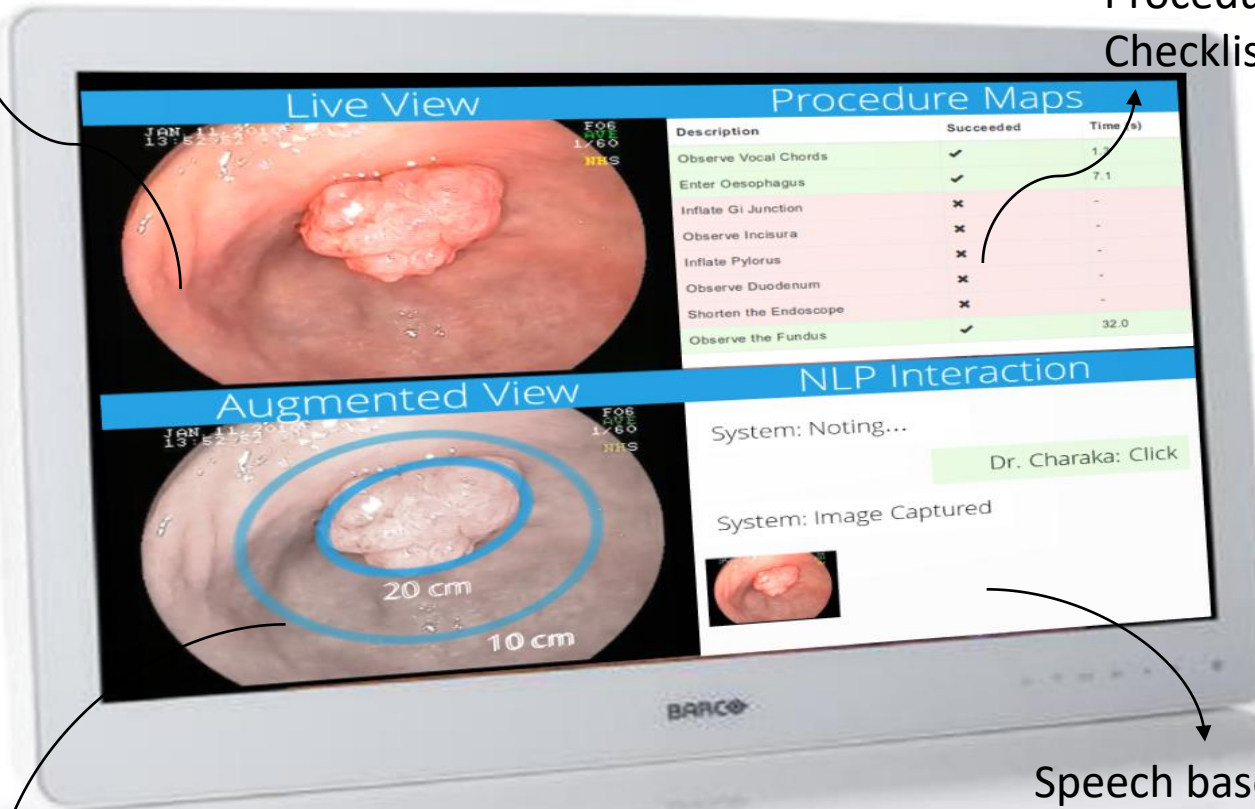
EndoASSIST Intelligent Assistant for Endoscopy



Live endoscopy view

view

Procedure maps & Checklists

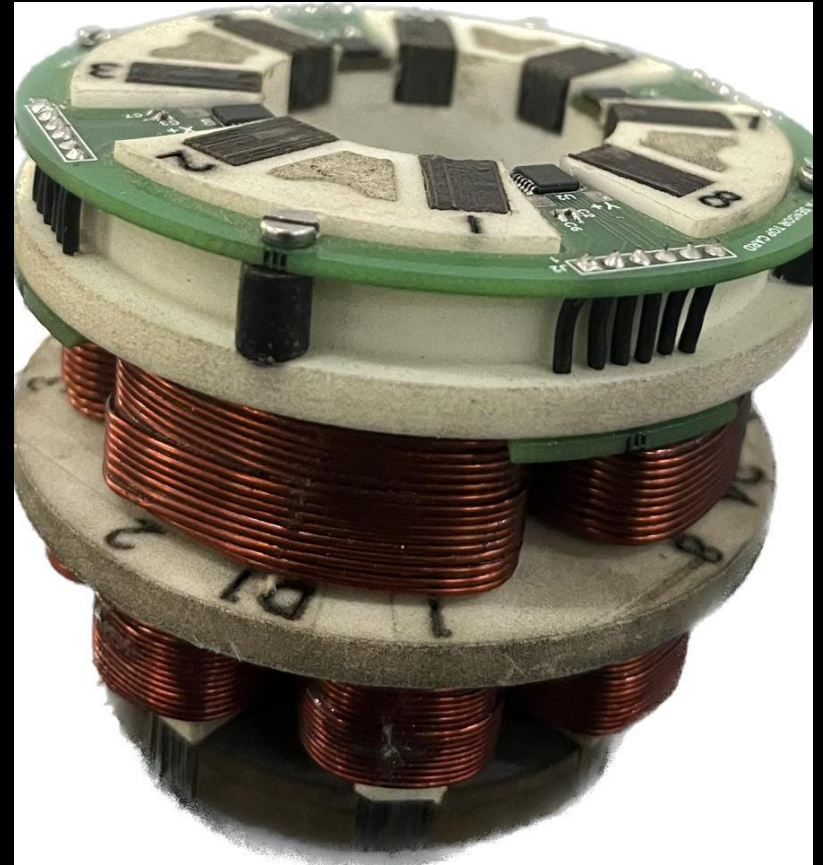


AI-augmented view

Speech based interaction



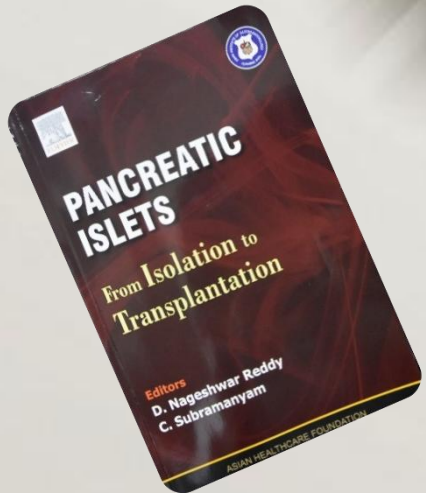
- Automated report generation
- Enhanced patient outcome
- Feedback and Analytics for tracking



Indo-American Artificial Heart Program (IAAHP) - Indus

- ✓ AIG Hospitals
- ✓ Cornell University
- ✓ University of Pittsburgh Medical Center - Pittsburgh, USA

Global Islet Tx Club



AIH joins the Global Islet Tx Club



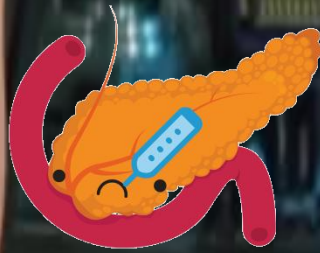
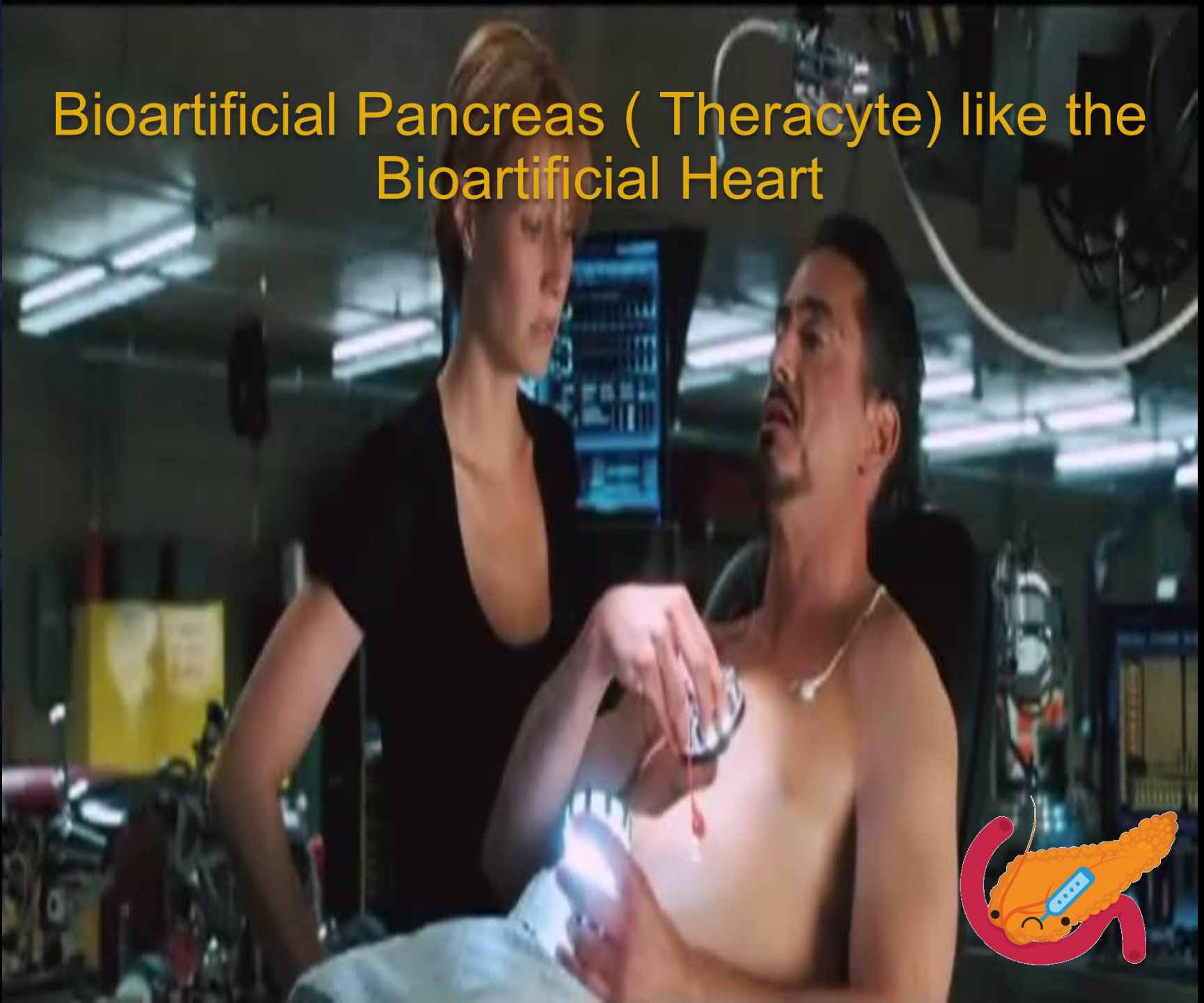
Islet Transplantation

Autologous -No Immunosuppression
Allogenic – Needs Immunosuppression

Can Islet transplantation be done without immunosuppression ?



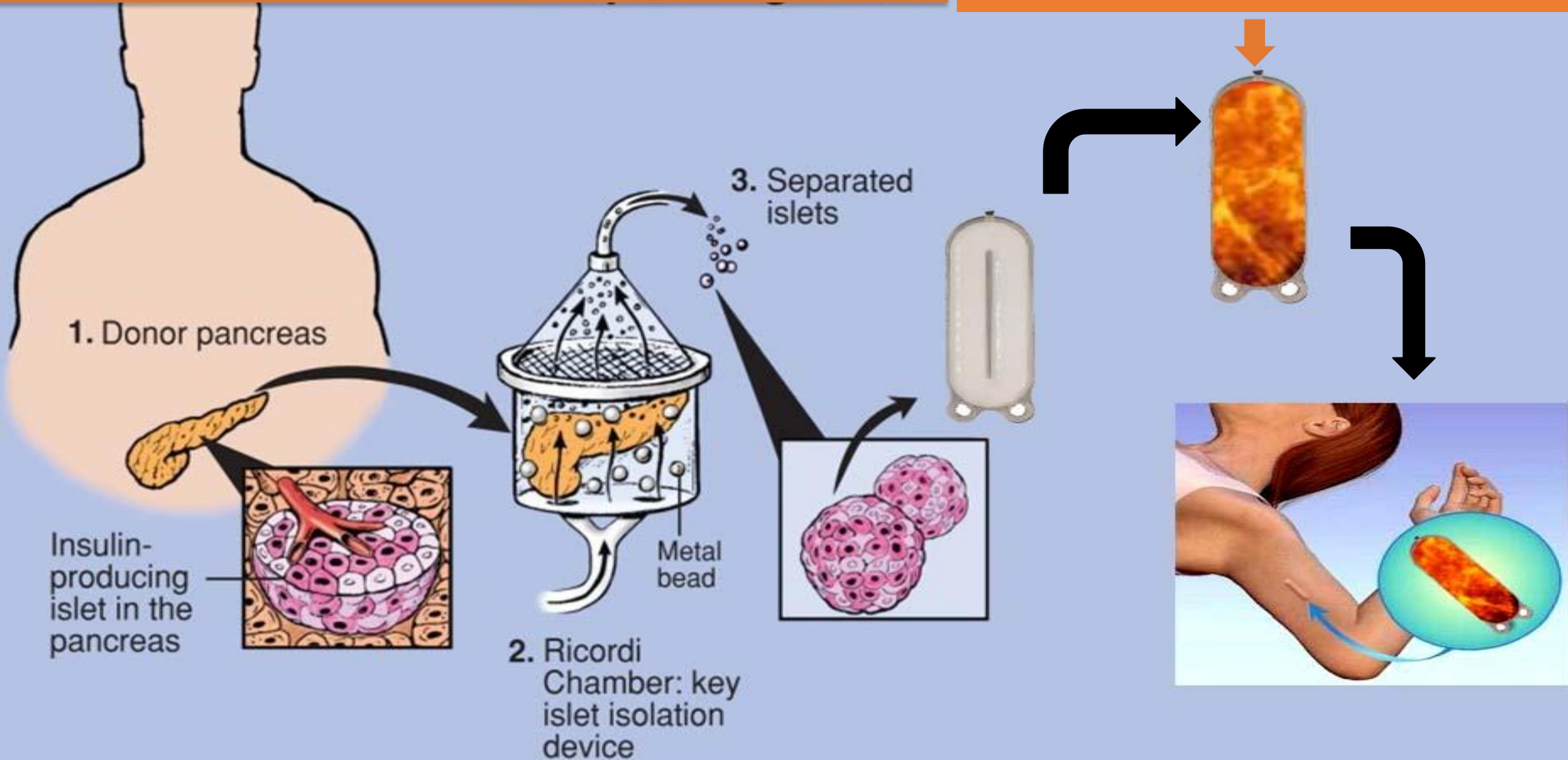
Bioartificial Pancreas (Theracyte) like the Bioartificial Heart



Allogenic Islet Cell Transplantation

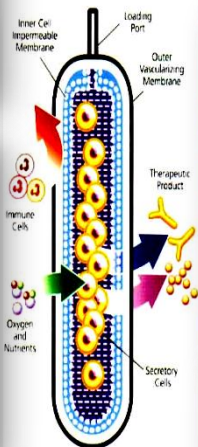
Subcutaneous Implant - Without Immunosuppression

- Protects transplanted islets
- Semipermeable
 - Allows nutrients, glucose and insulin
 - Prevents Immune cells & Antibodies



Long-Term Functions of Encapsulated Islets Grafted in Nonhuman Primates Without Immunosuppression

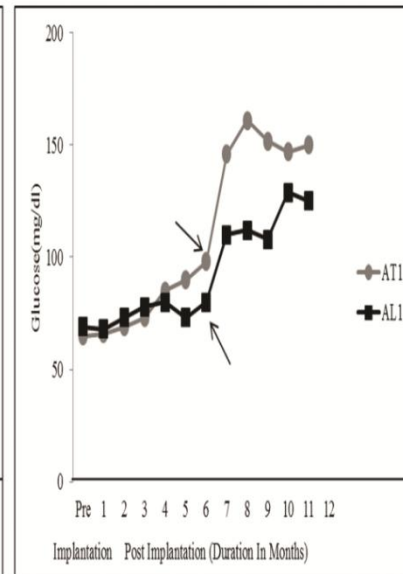
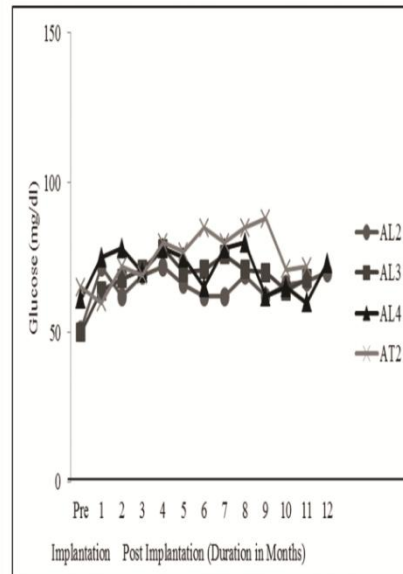
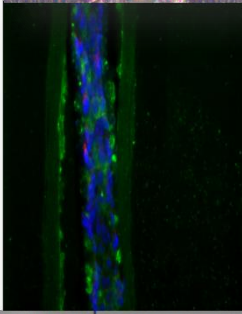
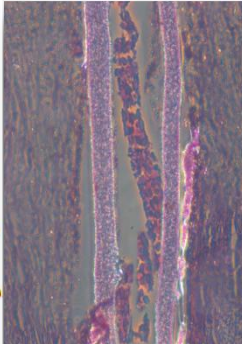
Mitnala Sasikala,^{1,5} Guduru Venkat Rao,¹ Venkateshan Vijayalakshmi,² Rebala Pradeep,¹ Suresh Pothani,³ Pondugala Pavan Kumar,¹ Radhika Gaddipati,¹ Ganneru Sirisha,² Ramji Cheemalakonda,¹ Manu Tandan,¹ Chivukula Subramanyam,¹ Seshadri Vasudevan,⁴ and D. Nageshwar Reddy¹



Immunoisolation concept of the TherAcyl™ System

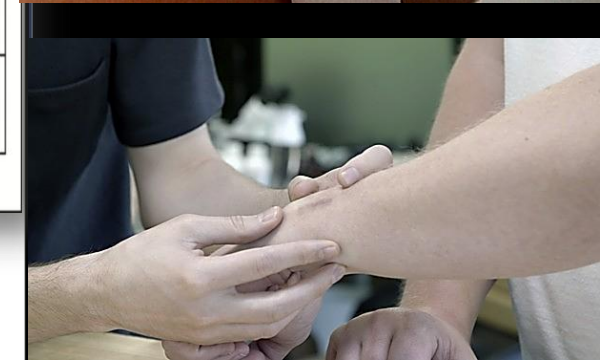
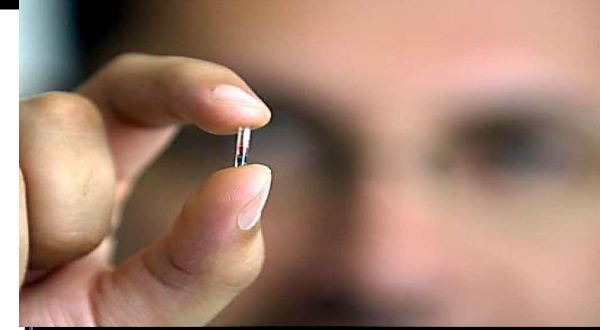


Three standard products represented by different volumes



Keywords: Islet transplantation, Immunoisulatory device, Nonhuman primates.

(Transplantation 2013;00: 00-00)

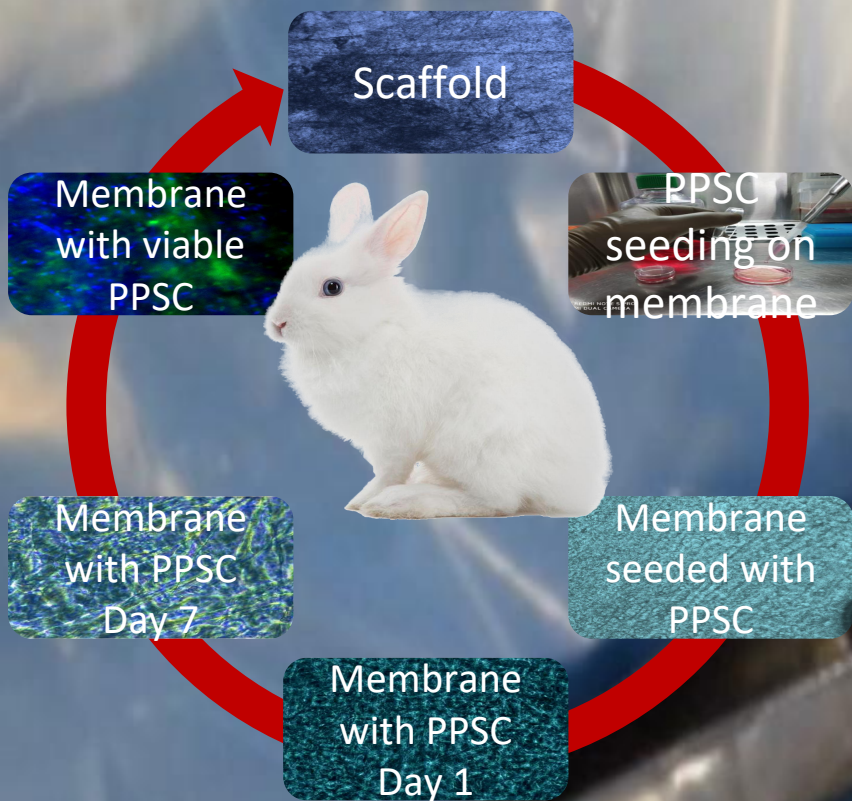




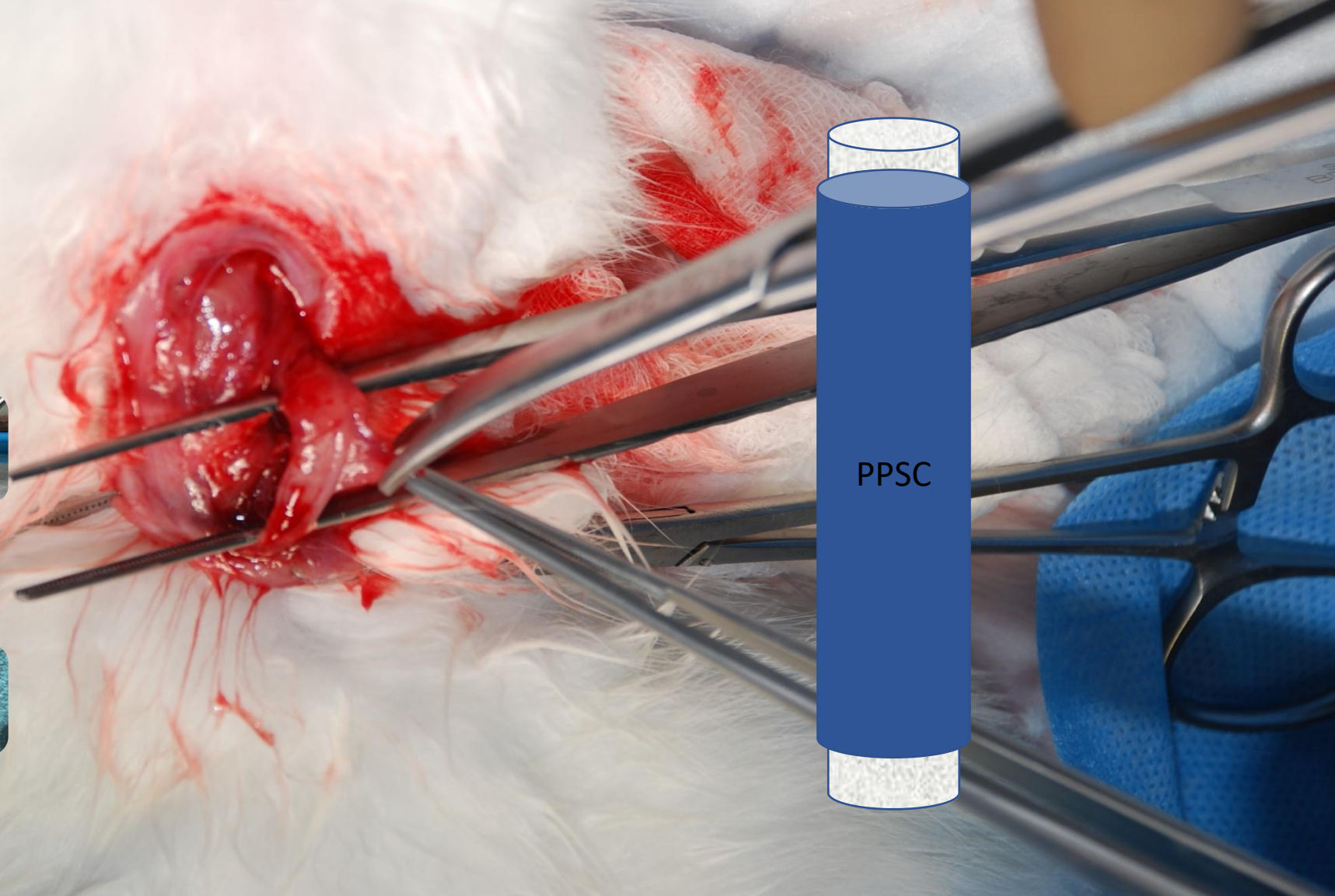
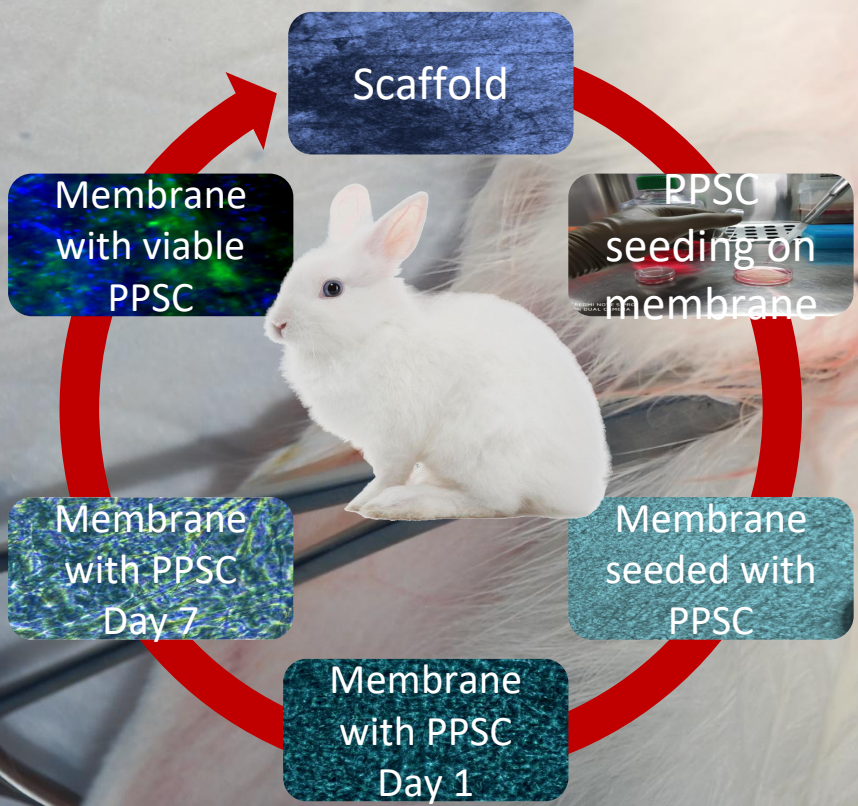
Can we regenerate oesophagus ?



Esophageal Regeneration AIG – Translational Research



Esophageal Regeneration – PPSC on FSEMS Scaffold AIG – Translational Research



Awards & Recognition

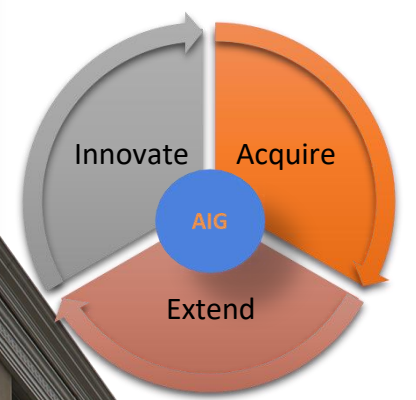
“Year after Year”



THE WEEK - HANSA RESEARCH SURVEY 2021
INDIA'S BEST HOSPITALS



Technology & AIG Leadership



- ✓ ↑ Clinicians satisfaction, credibility & visibility both academically & socially
- ✓ Patents (27) & Publications (784)
- ✓ ↓ Attrition rates
- ✓ Emergence of Technology Leaders
- ✓ Institution recognition as Centre of Excellence

“Improving Patient Outcomes & Satisfaction”

 AIG HOSPITALS