

Advances in Minimally Invasive Surgery

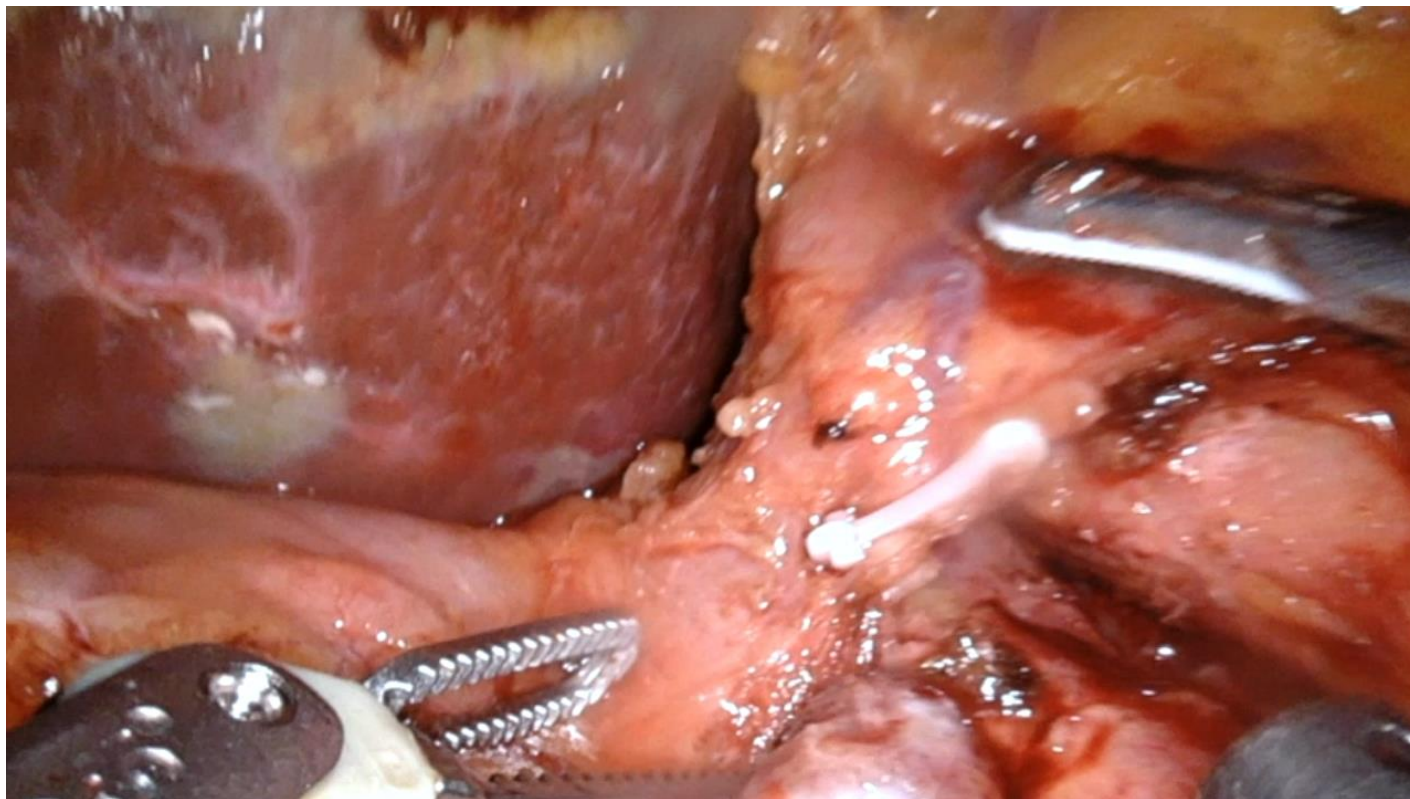
Richard A. Burkhardt, MD

Assistant Professor of Surgery and Oncology

Johns Hopkins Hospital, Baltimore, MD, USA

Advances in Minimally Invasive Surgery

No Disclosures



Advances in MIS: Lecture Objectives

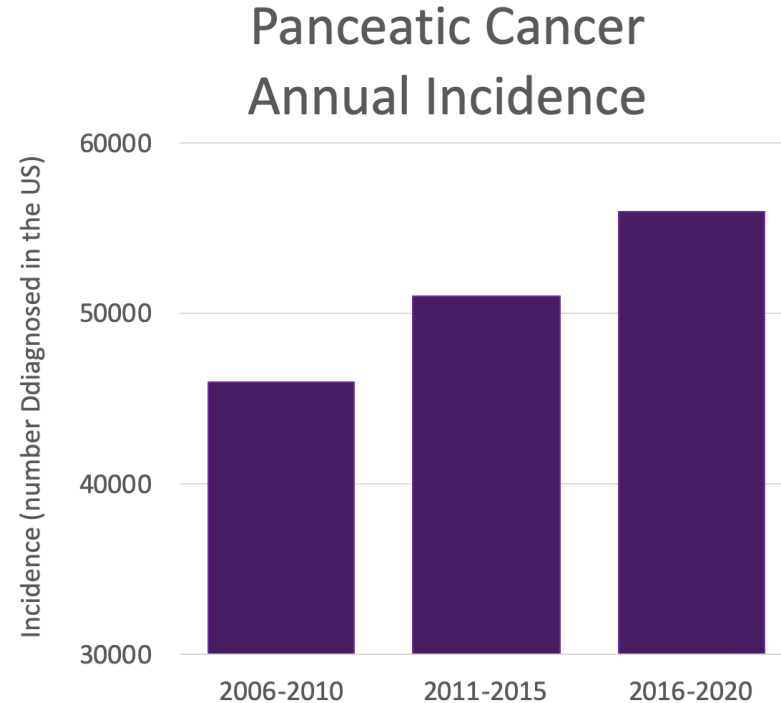
1. An expanding toolbox for MIS pancreatic surgeons
2. The learning curve and patient selection
3. Perioperative complications - current evidence and controversy
4. MIS pancreatic surgery, population health, and health economics.

Advances in MIS: Lecture Objectives

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An expanding toolbox: The scope of the problem

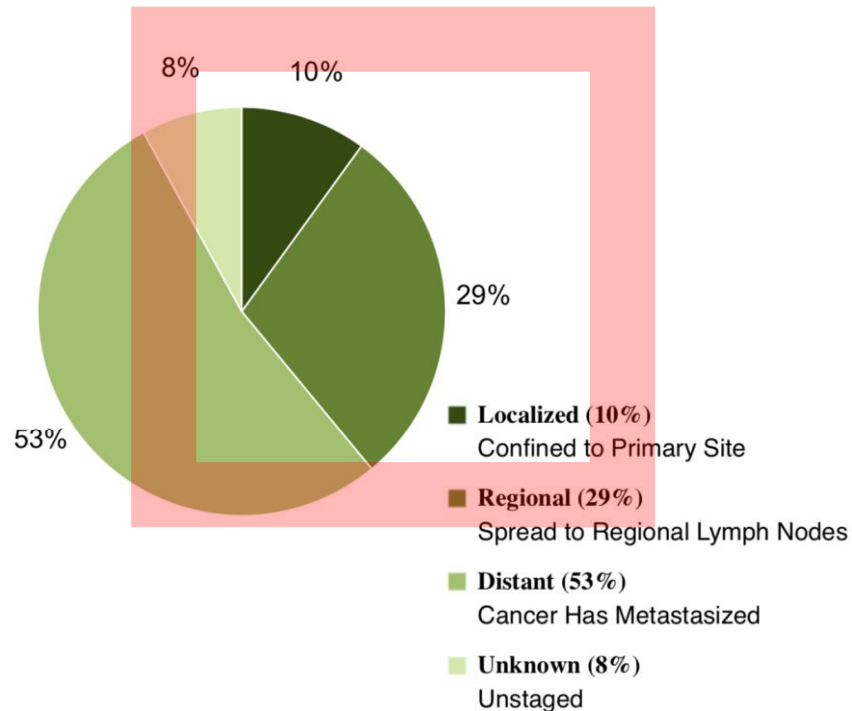
- The incidence of pancreatic cancer is on the rise with the indications for surgery expanding alongside improved systemic therapies.



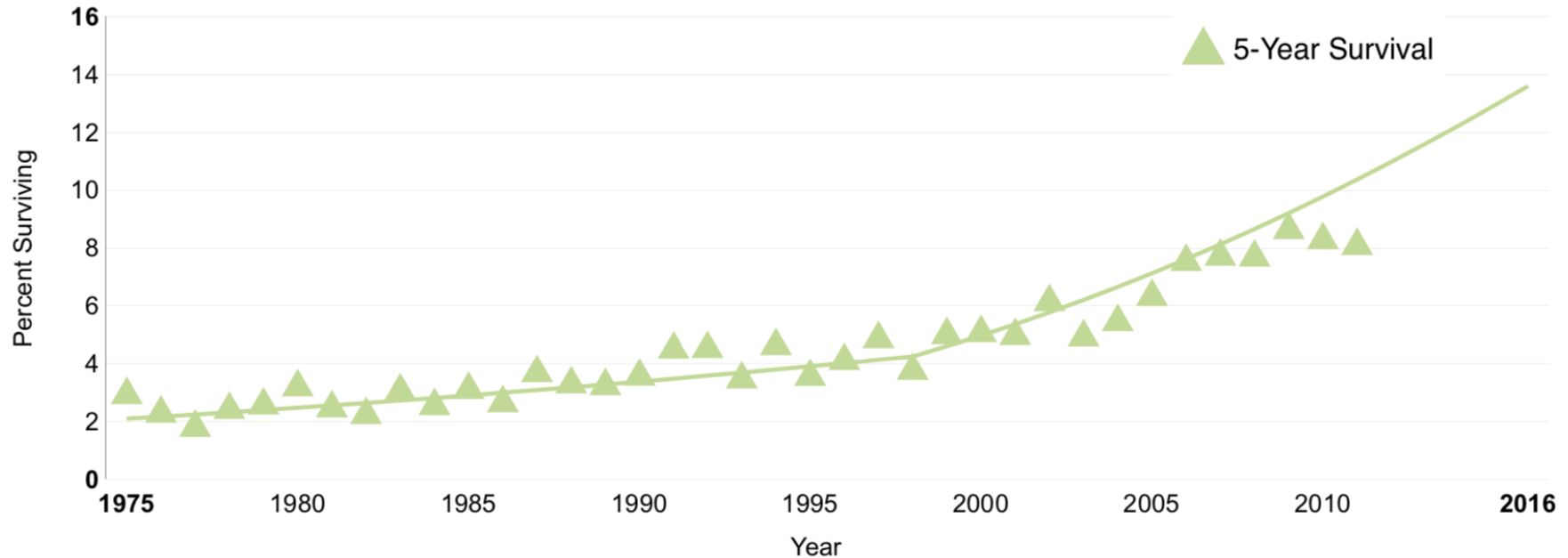
An expanding toolbox:

The scope of the problem

- Nearly four in 10 patients are diagnosed with disease confined to the locoregional structures
- Clinically corresponding to:
(1) resectable, (2) borderline resectable, or (3) locally advanced disease

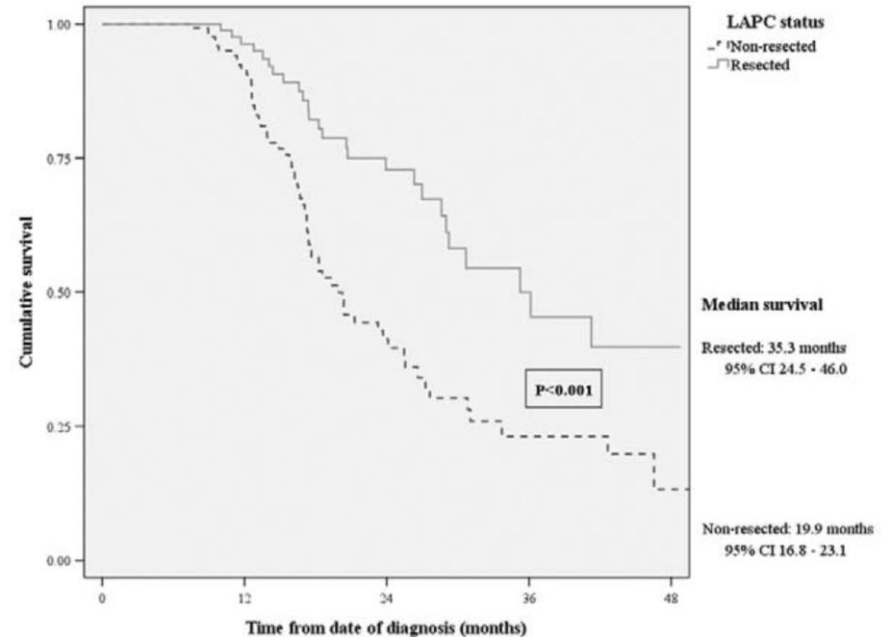


An expanding toolbox: The scope of the problem



An expanding toolbox: The scope of the problem

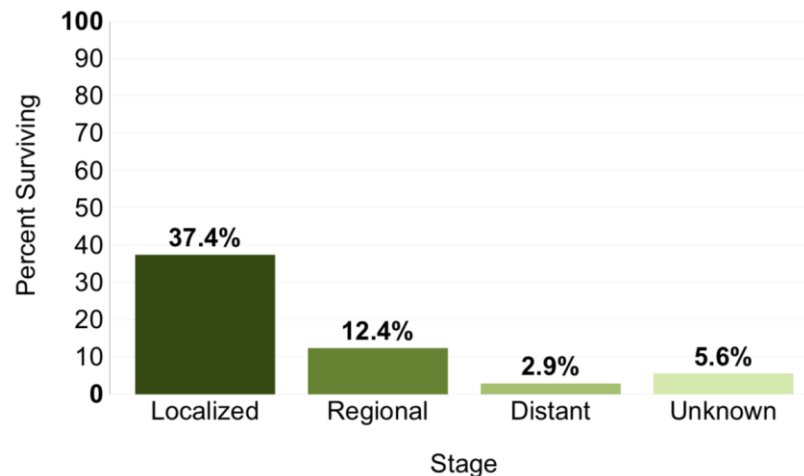
- Surgery is associated with a survival advantage even in patients with locally advanced disease



An expanding toolbox: The scope of the problem

- In keeping with findings from other cancer subtypes, earlier disease stages are associated with improved survival.

5-Year Relative Survival



An expanding toolbox: Technologies available for use today

- Conventional laparoscopy
- 3-D laparoscopy
- Robotics
- Advanced stapling and energy devices

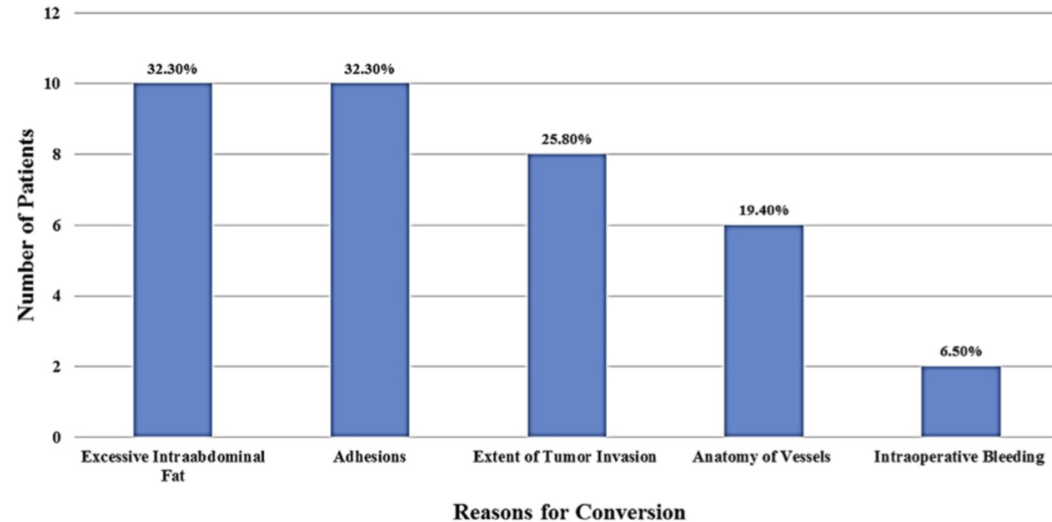


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The learning curve: Lessons from prior experience

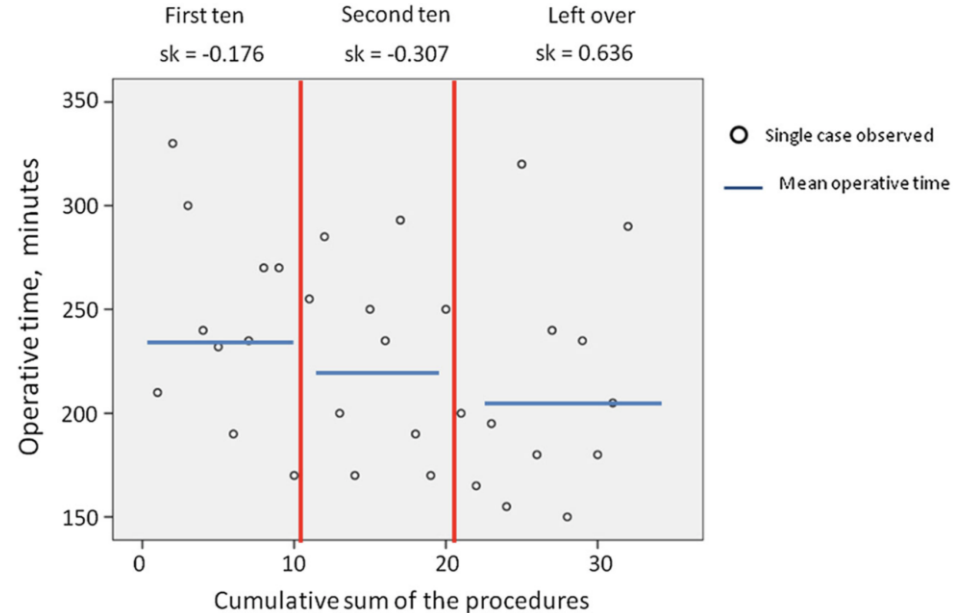
- The adoption of new technology requires:
 1. Introductory training
 2. Intentional practice
 3. Graduated introduction
 4. Diligent recognition of changes in practice and outcomes

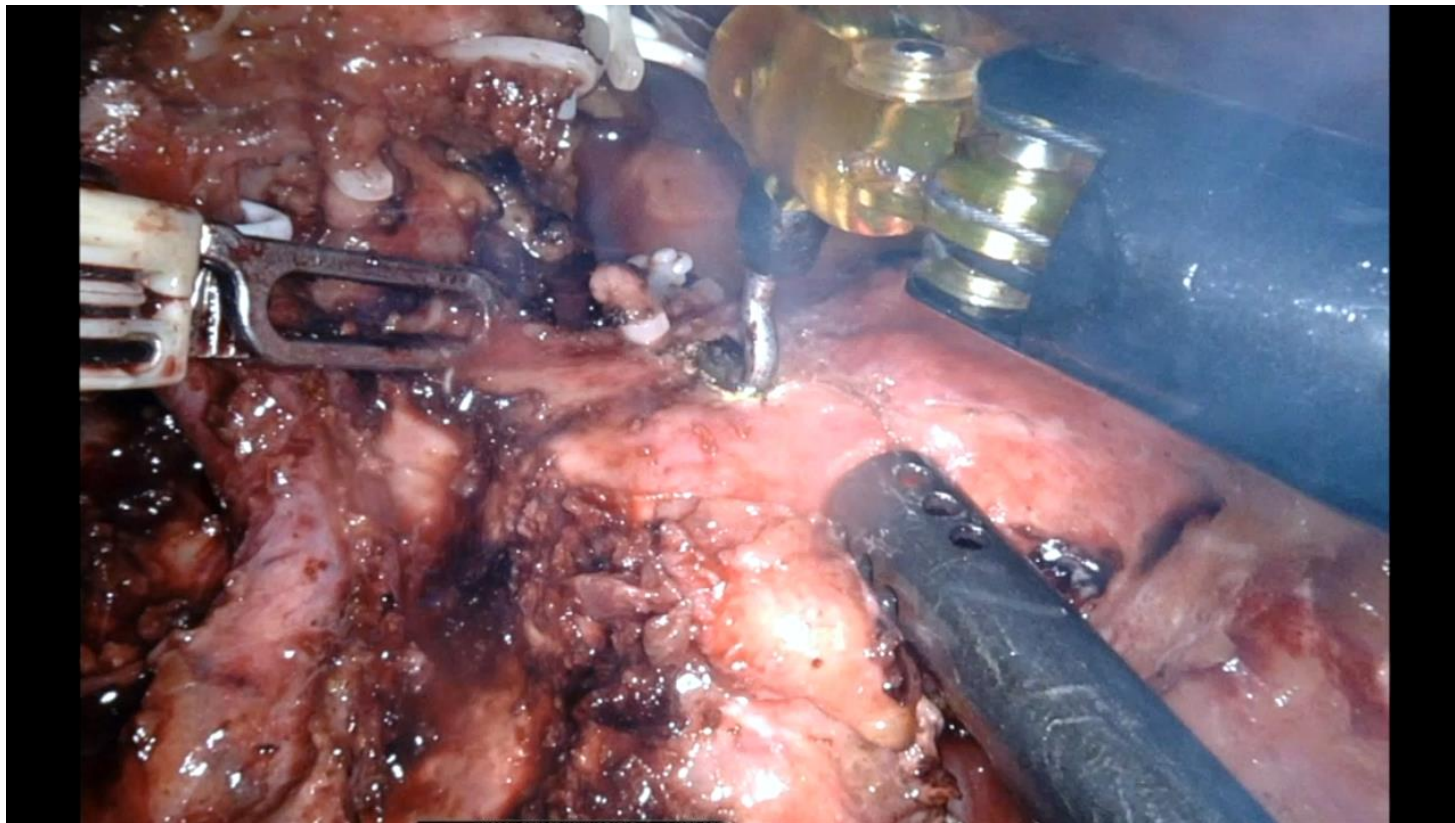


Patient selection:

Build experience with appropriate cases

- Distal pancreatectomy as an example for uncomplicated, often premalignant, disease
- The use of hybrid procedures
- Incremental growth occurs with selection of more complicated procedures





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Perioperative complications:

The need to control major vasculature



Perioperative complications:

- Estimated blood loss:

**Minimally Invasive Distal
Pancreatectomy (n = 51)**

150 (50–350)

**Open Distal
Pancreatectomy (n = 57)**

400 (200–775)

P

<0.001

Perioperative complications: Reconstruction quality drives outcomes

Reconstruction

Perioperative complications:

- Estimated blood loss:
- Pancreatic fistula:

Minimally Invasive Distal Pancreatectomy (n = 51)

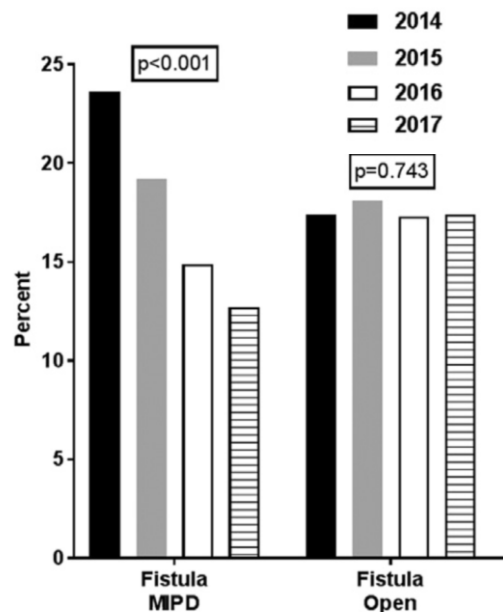
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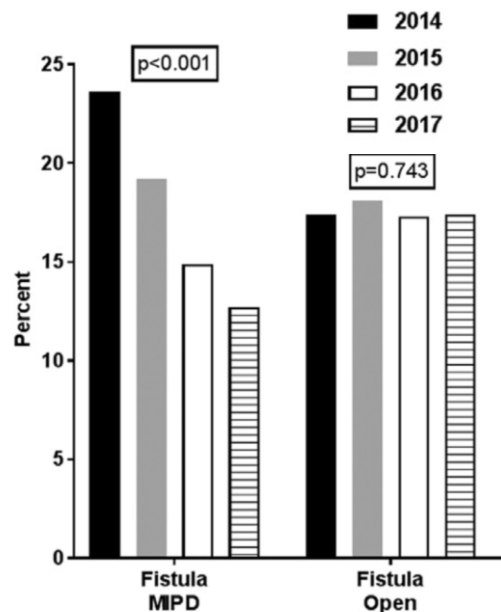
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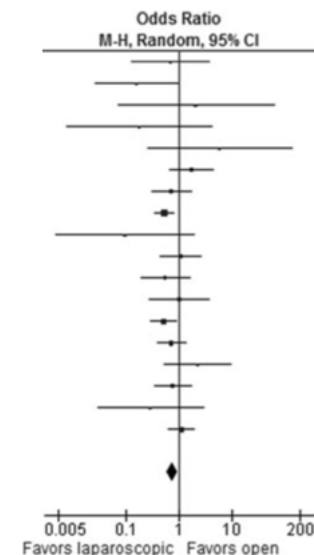
de Rooij et al. Ann Surg 2019

- Pancreatic fistula:



Panni et al. JACS 2019

- Overall complications:



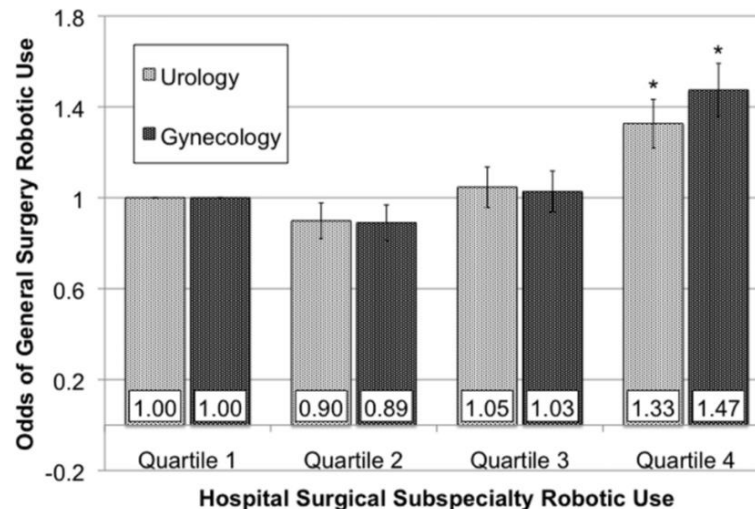
Venkat et al. Ann Surg 2012

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Population health and health economics:

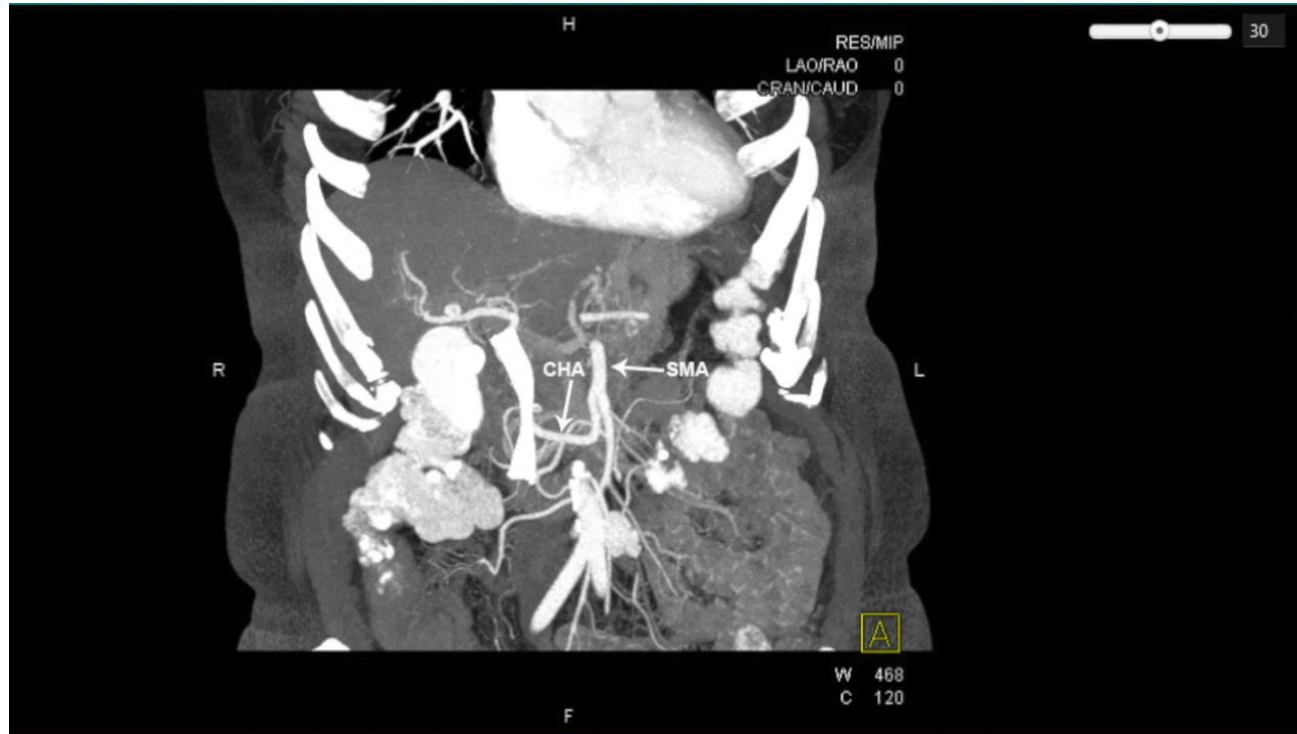
- Hospital factors that drive or slow adoption
- Health economics and costs of care
- Generalization of techniques and globalization



Two more honest thoughts (amongst friends)

Is this just a party trick?

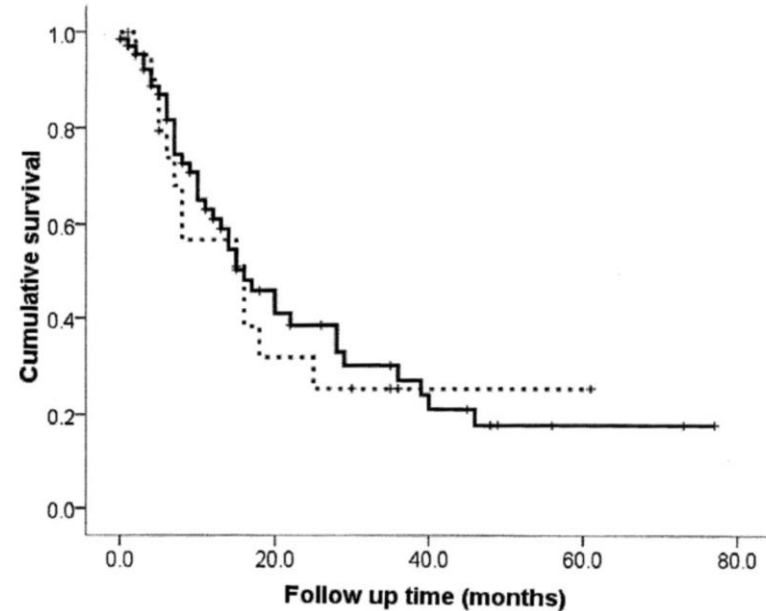
i.e. complicated anatomy and oncologic adequacy of resection



“The size of the incision is the least
important part of the operation”

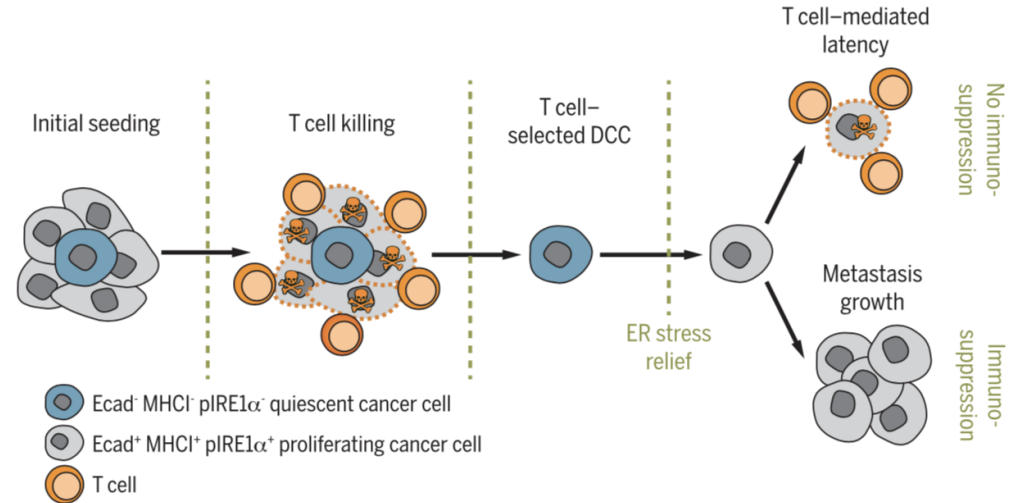
Perioperative stress, the immune response, and cancer recurrence:

- The incorporation of MIS techniques has the potential to, not only meet oncologic equivalency, but surpass them.



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- The incorporation of MIS techniques has the potential to, not only meet oncologic equivalency, but surpass them.



Advances in MIS for PancreasFest 2019:

1. An expanding toolbox allows for complex MIS pancreatic surgery to be performed safely
2. Patient selection is critical in the early adoption of MIS technologies
3. Perioperative complications are (at least) equivalent when implemented by high-volume surgeons and programs with experience in both pancreatic and MIS
4. Costs appear reasonable but resource utilization may limit universal adoption of techniques