Chronic Mesenteric Ischemia Is Best Treated ~~Endovascularly~~ OPEN

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PGY2 McGill Vascular Surgery

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Disclosures:

- I have no current relationships with commercial entities.

Leaking kitchen pipe..

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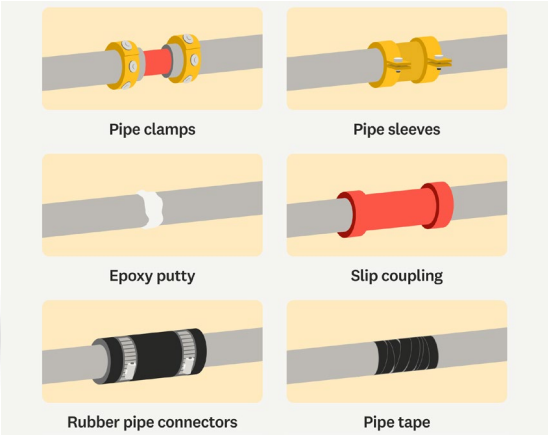

- Less time
- Less effort
- ?Less $$$

→ Future problems
Redo fixes
More time/energy

- More time
- More effort
- Higher upfront $$$

→ Durable

Goals of "BEST" Treatment[1,2]

1. Relieving presenting symptoms
2. Preventing progression to acute mesenteric ischemia
3. Improving quality of life

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Open surgery >> Endovascular

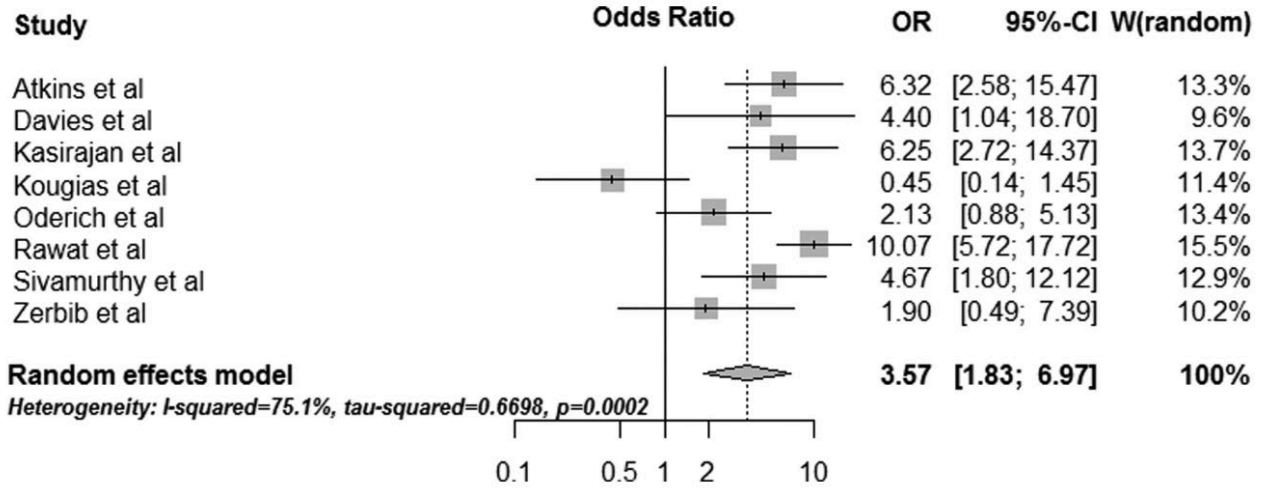
At *least* 7 reasons why.

1. PATENCY

- Well established in open repair: up to 92% primary patency at 5 years[3-4].
- Five systematic reviews showing *lower primary patency* in endovascular compared to open, up to 5 year follow up[5-9].
- *Lower secondary patency* in endovascular vs. open[9].

Endovascular Versus Surgical Revascularization for the Management of Chronic Mesenteric Ischemia

Mahmud Saedon, MBChB, MRCS[1,2], Athanasios Saratzis, MBBS, MRCS, PhD[2,3], Ahmed Karim, MBChB, MRCS[2,3], and Steve Goodyear, MBBS, MD, FRCS[2,3]



Forest plot summarizing primary patency rates for endovascular versus surgical reconstruction.

Open repair has 257% higher odds of achieving late primary patency compared to endovascular repair (OR 3.57, 95% CI 1.83-6.97, P=0.0002).

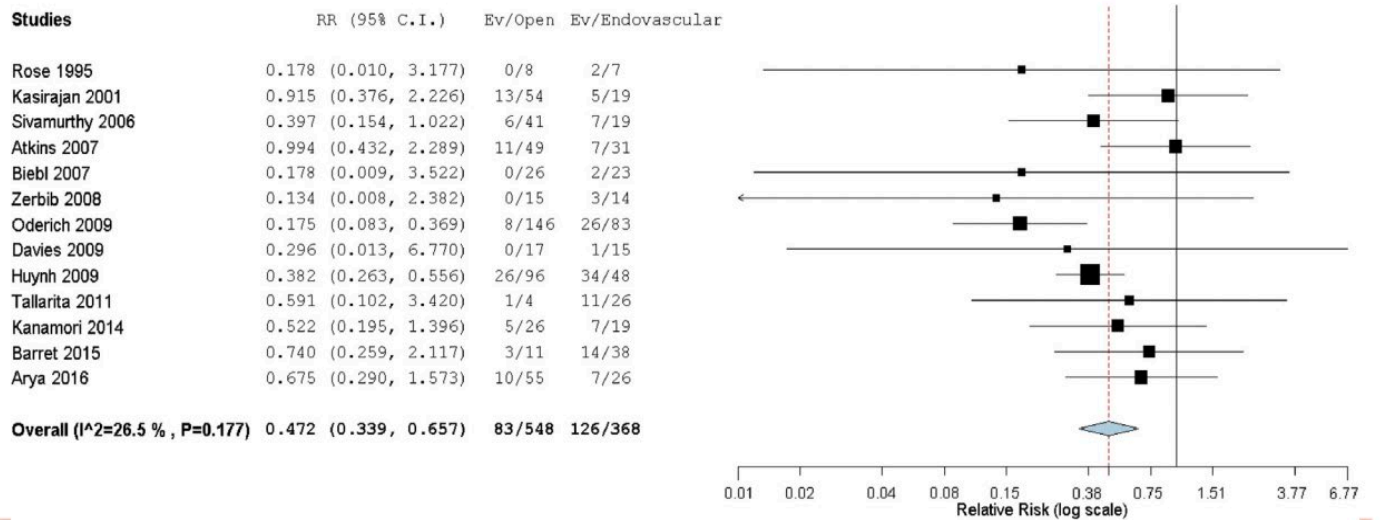
2. RECURRENT SYMPTOMS

- Restenosis based on review of literature[4]:
  - Endo: 57%
  - Open: 24%
- Recurrent symptoms at 3 years from largest systematic review of 100 studies (n = 18820 patients):
  - Endo: 34%
  - Open: 15%

Overall weighted risk of symptom recurrence lower in open group compared to endo (RR 0.472, 95% CI 0.339-0.657, P=0.177).

A systematic review and meta-analysis of endovascular versus open surgical revascularization for chronic mesenteric ischemia

Fares Alahdab, MD,[a,b] Remy Arwani, MD,[c] Ahmed Khurshid Pasha, MD,[d] Zayd A. Razouki, MBChB, MS,[d] Larry J. Prokop, MLP,[a,e] Thomas S. Huber, MD,[f] *and* M. Hassan Murad, MD, MPH,[a,b] *Rochester, Minn; Cairo, Egypt; and Gainesville, Fla*



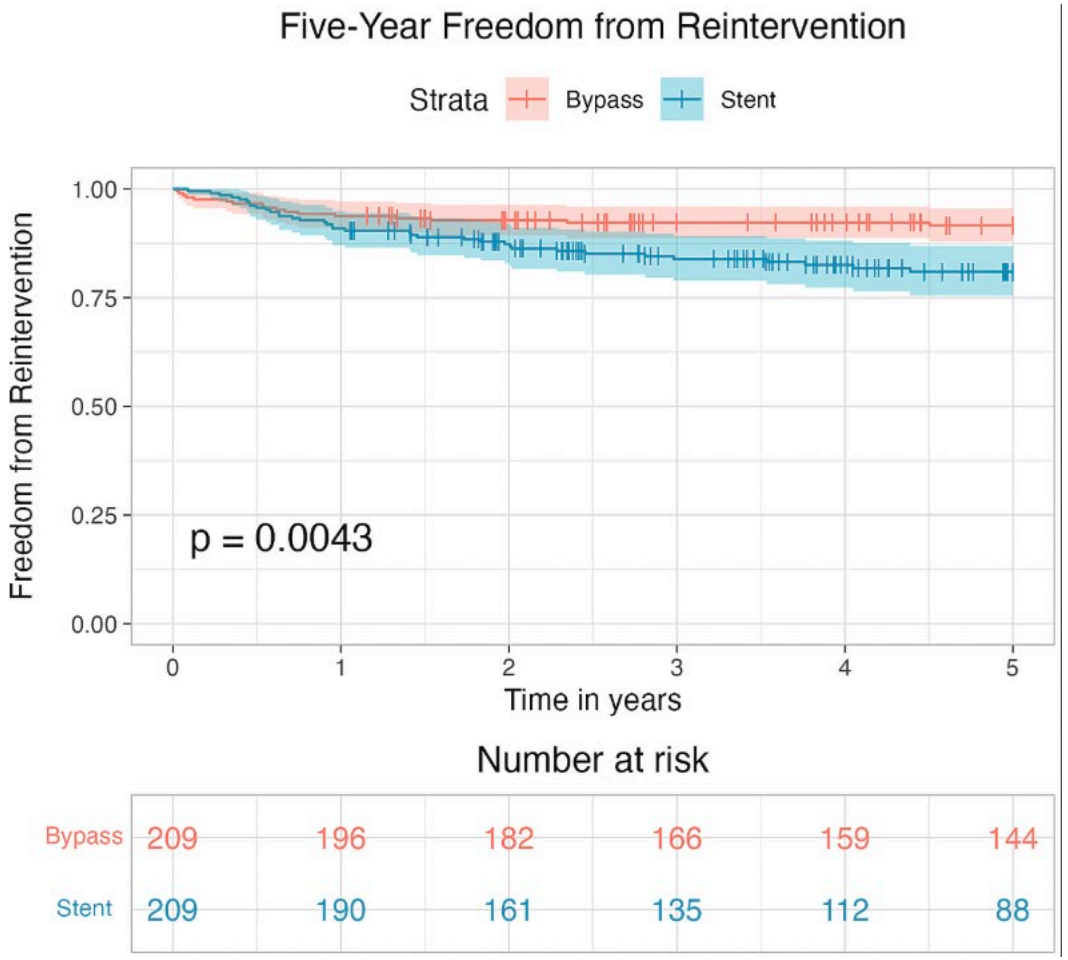
Forest plot summarizing 3-year recurrence rate of chronic mesenteric ischemia symptoms.

3. REINTERVENTIONS

- Up to ½ of restenoses in endovascular repair require reintervention[10]
  - Endo: 10-42%
  - Open: 0-27%
- Largest retrospective propensity-matched study (n=418) analyzing long-term outcomes after re-intervention for CMI[11]
  - Open repair associated with greater freedom from reintervention at 5 years (p<-0.01)

Long-term value in open and endovascular repair of chronic mesenteric ischemia

Daniel Lehane, BA, Joshua Geiger, MD, Baqir Kedwai, BHSc, Zachary Zottola, BS, Karina Newhall, MD, MS, Doran Mix, MD, Adam Doyle, MD, *and* Michael Stoner, MD, *Rochester, NY*



5-year freedom from reintervention in open and endovascular repair.

5. ANATOMICAL CONSTRAINTS

ENDOVASCULAR

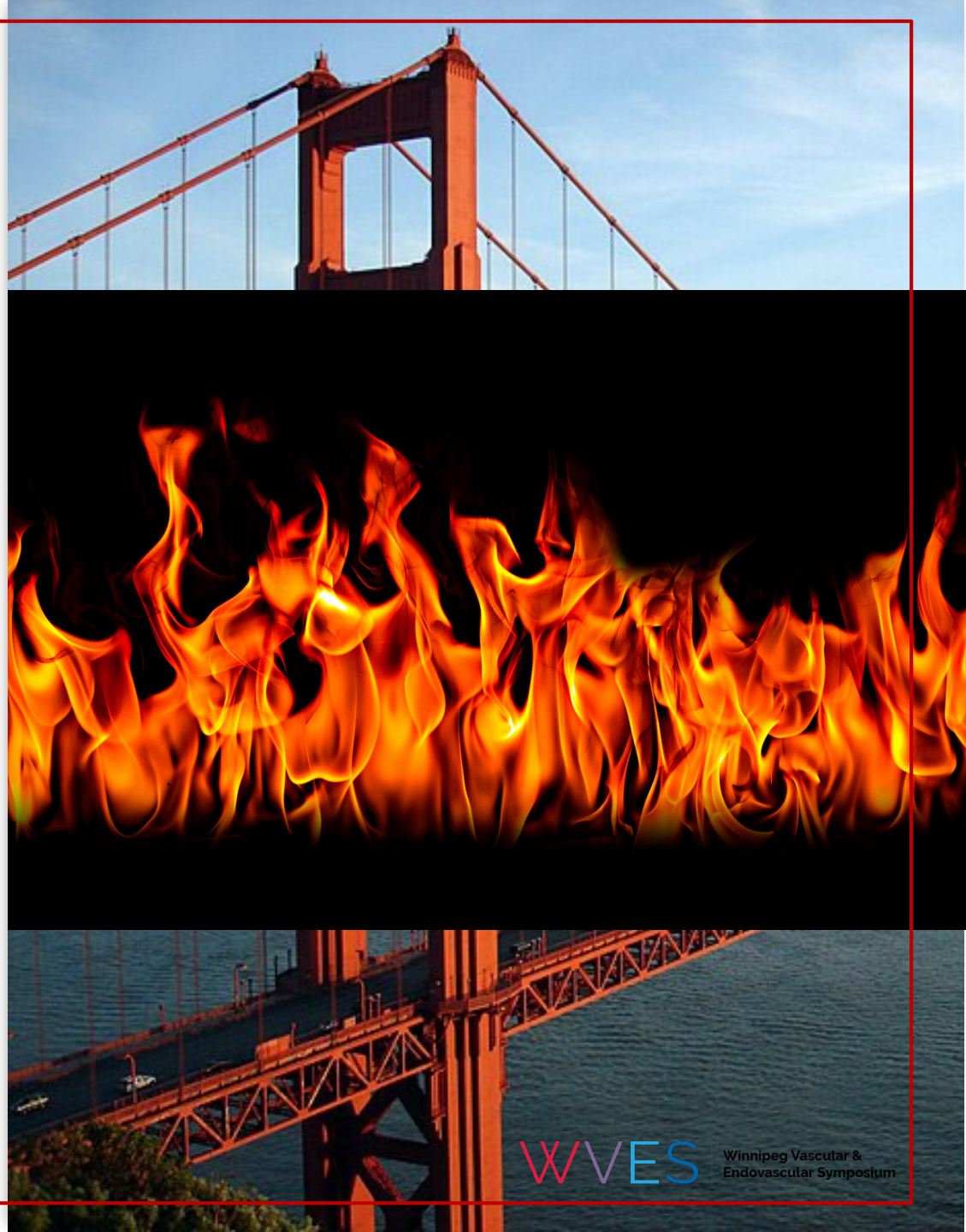
- ✗ Eccentric calcifications
- ✗ Flush occlusions of aorta
- ✗ Long occlusions
- ✗ Small vessel diameter
- ✗ Tandem lesions affecting branches

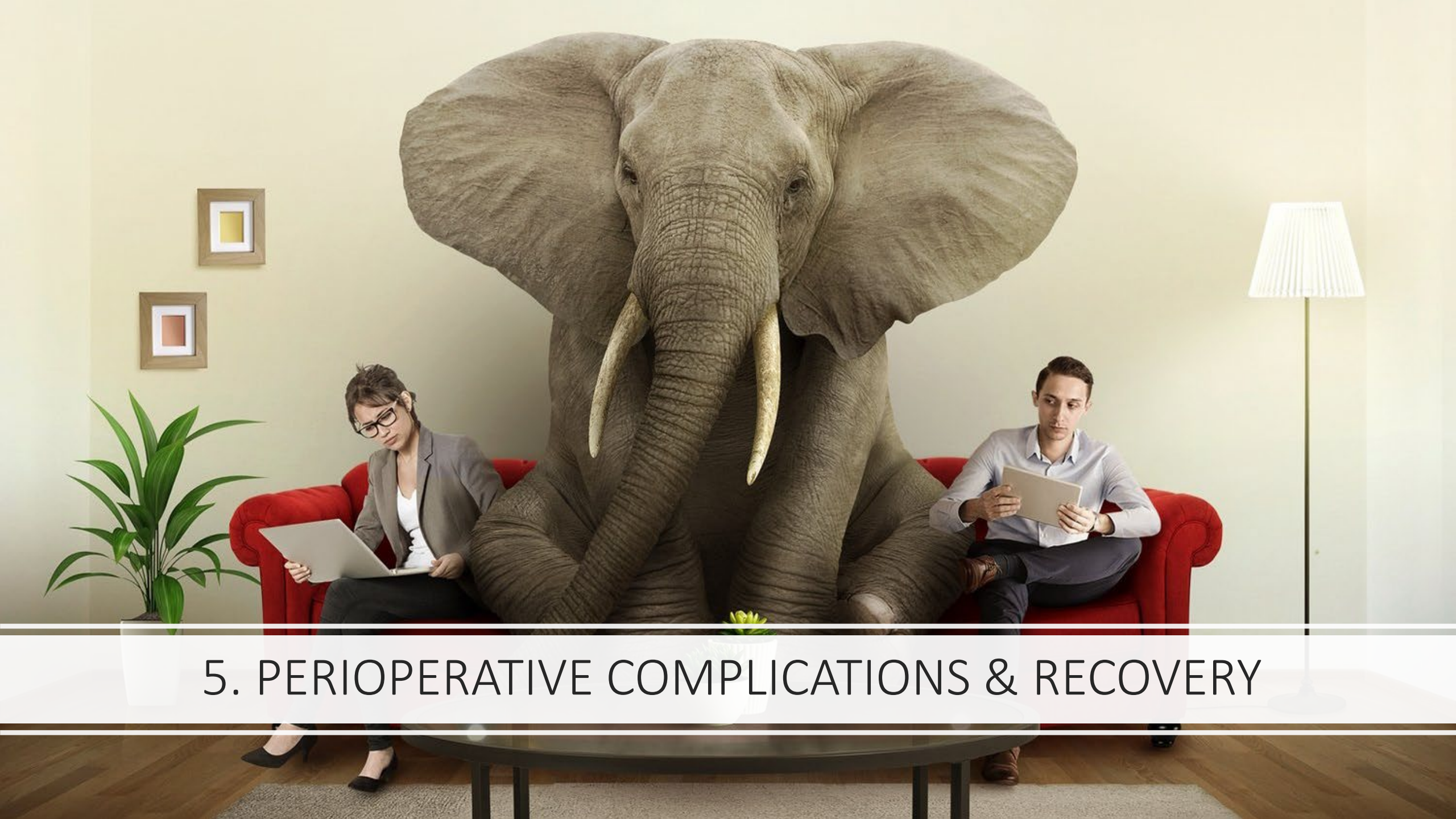
OPEN SURGERY

- ✓ Multiple options for inflow
- ✓ Endarterectomy & reconstruction possible
- ✓ Revascularization >1 vessel

6. EMBOLIZATION, DISSECTION, PERFORATION…

- Distal embolization reported in up to 8% of patients treated by SMA angioplasty & stent[10]
  - Higher for patients with SMA occlusion, long lesions (>30mm), severe calcification
- Risk of damage to outflow artery
- Access related complications (~16%)[10]
- Contrast & cumulative radiation exposure





5. PERIOPERATIVE COMPLICATIONS & RECOVERY

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- Higher length of stay and composite measure of perioperative complications in open vs. endo at 30 days.

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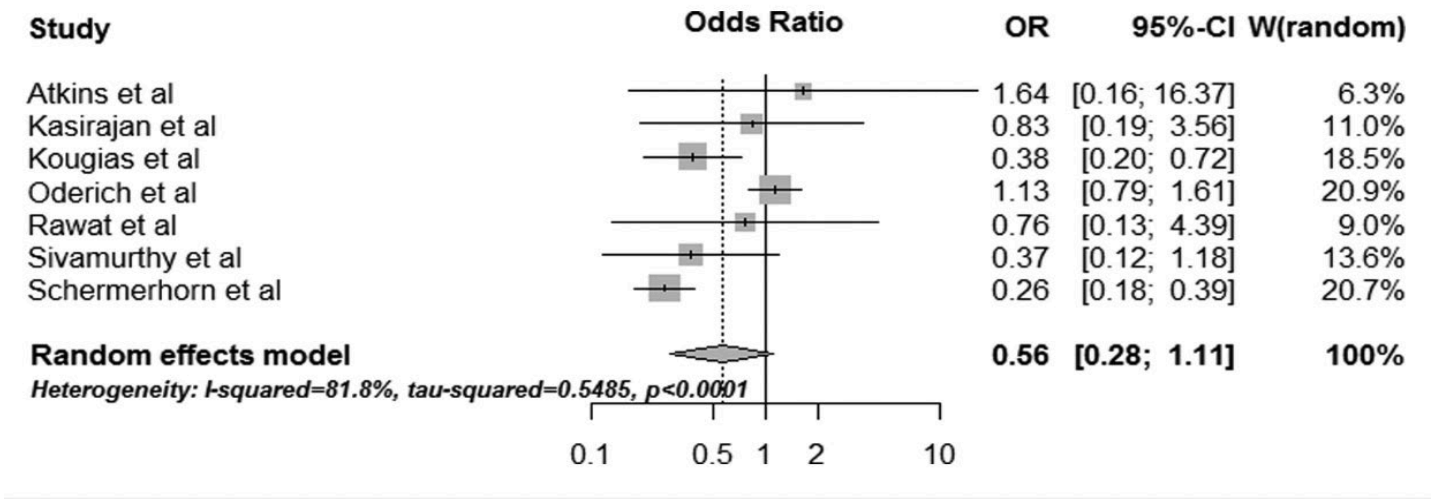


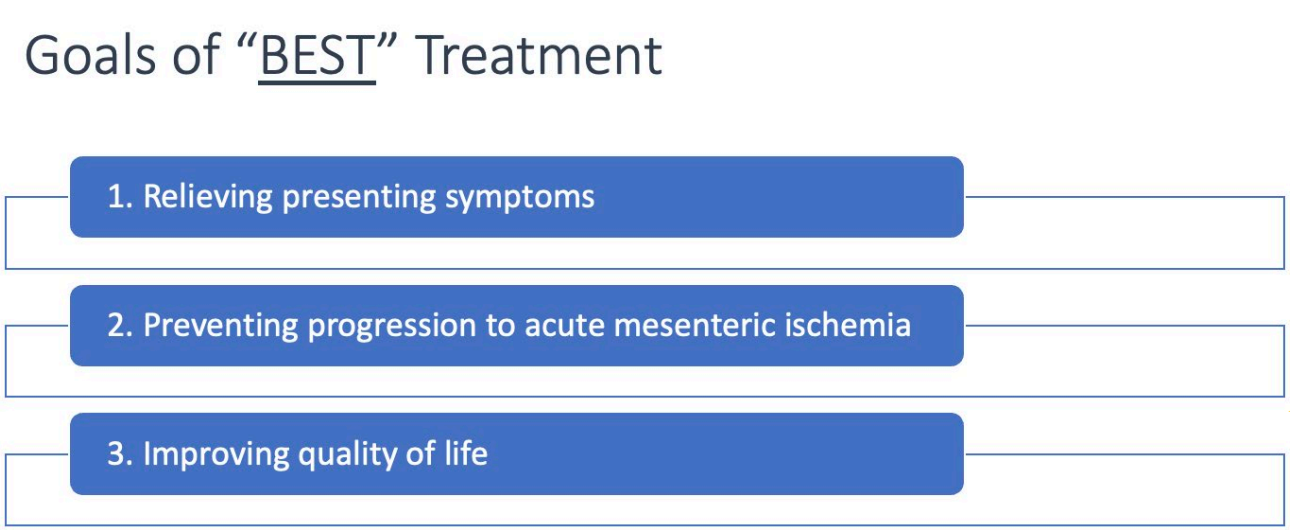
Forest plot summarizing incidence of composite endpoint for endovascular versus surgical reconstruction.

Composite incidence of major nonfatal cardiac complications, nonfatal stroke, nonfatal bowel ischemia.

No difference between endovascular vs open surgery.

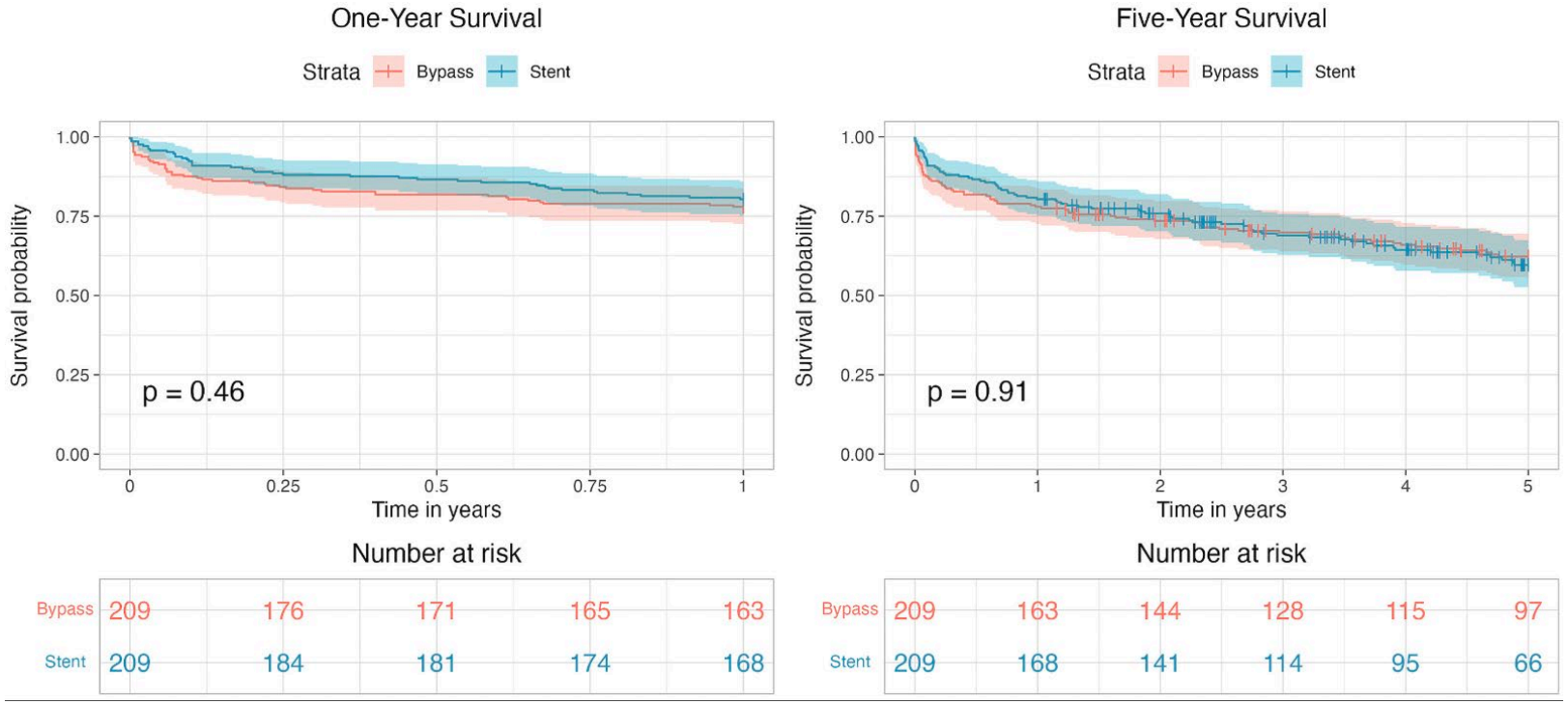
PERIOPERATIVE COMPLICATIONS & RECOVERY

- Higher length of stay and composite measure of perioperative complications in open vs. endo at 30 days.



BEST TREATMENT OVERALL, NOT ONLY 30 DAYS

7. MORTALITY



- No differences in perioperative, one-year or five-year survival in propensity matched groups[11].
- Findings further supported by five systematic reviews[5-9].

Goals of “BEST” Treatment

1. Relieving presenting symptoms
2. Preventing progression to acute mesenteric ischemia
3. Improving quality of life

Quick fix may seem like the easy way out, a new pipe would actually solve the problem and be more durable longterm.

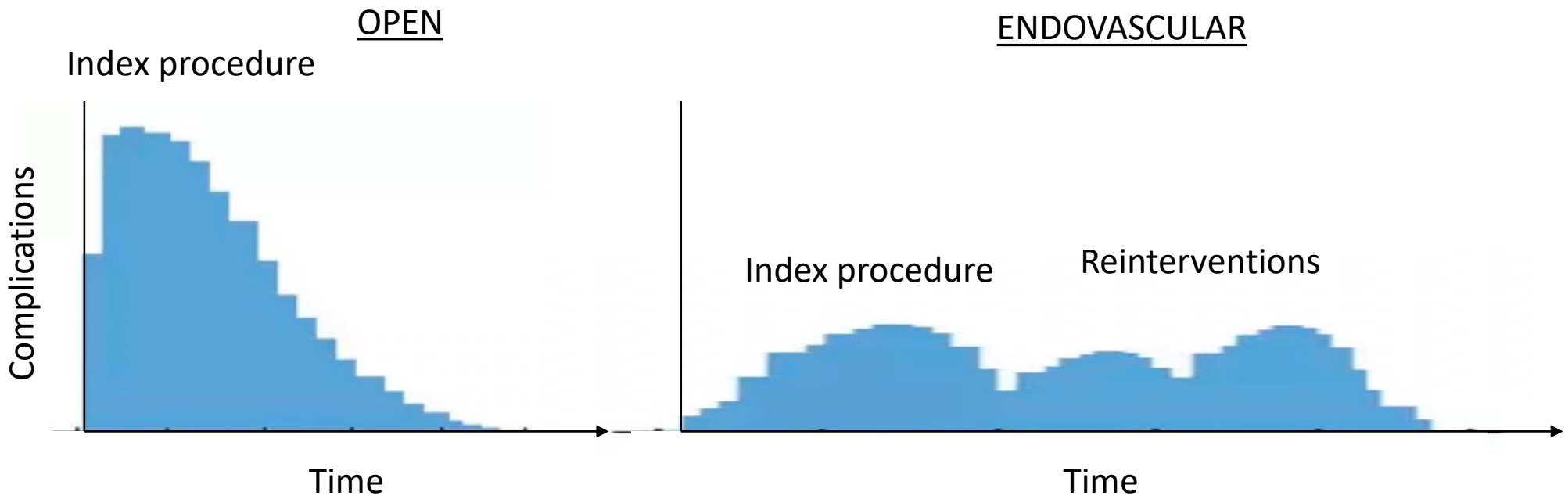
REBUTTAL

OPEN SURGERY:

1. *Higher patency.*
2. *Higher freedom from symptom recurrence.*
3. *Fewer reinterventions.*
4. *Fewer anatomical constraints.*
5. *Lower risk of intraoperative embolization/dissection.*
6. *Equal perioperative mortality.*

PERIOPERATIVE COMPLICATIONS & RECOVERY

- Limited data on cumulative complications/recovery, accounting for re-interventions.



Open revascularization *cures* the disease, endovascular treatment places it in remission

Dr. Michael Conte

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