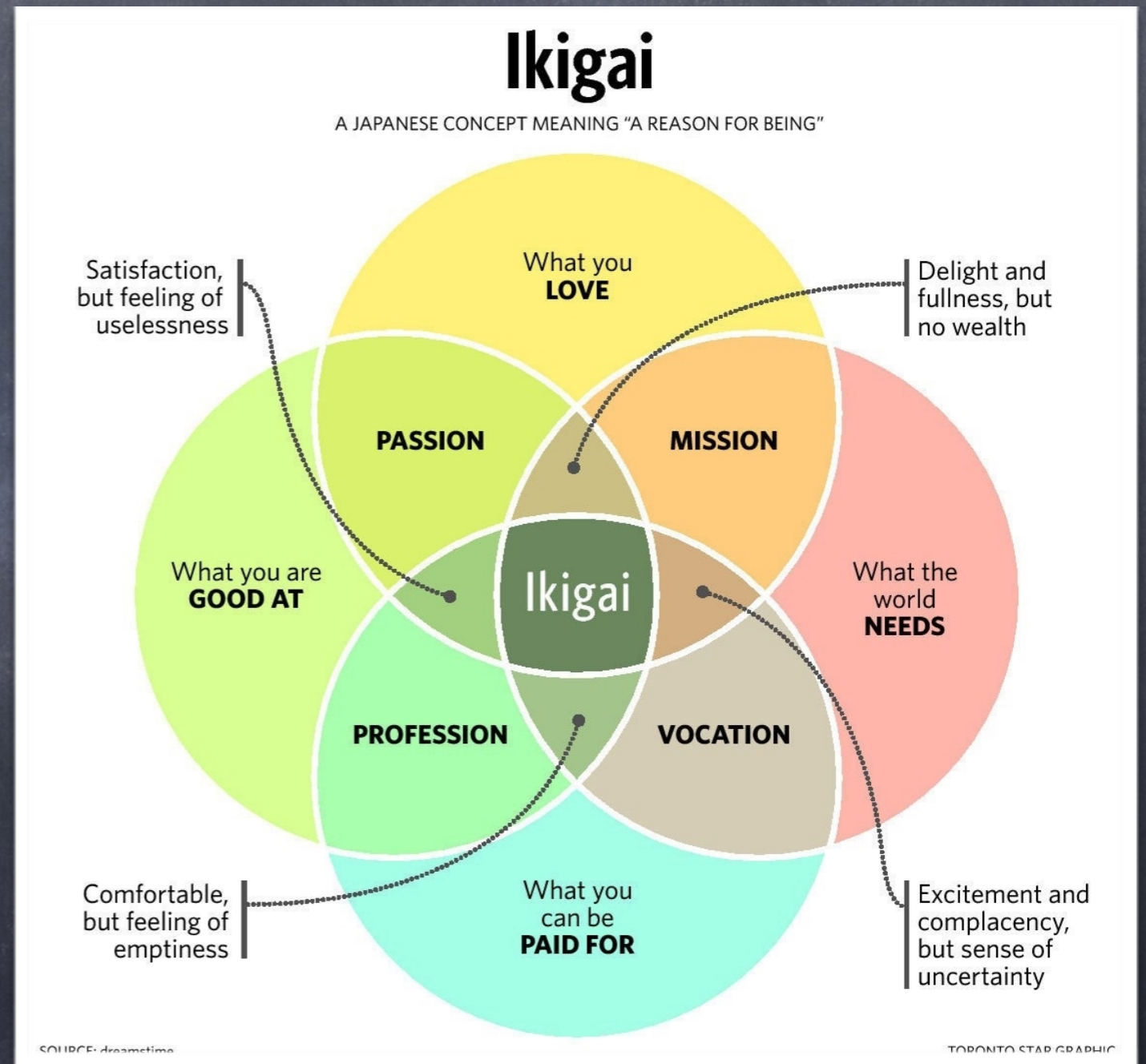


This house believes  
minimally invasive mitral valve surgery  
should be “an” option  
for patients with severe degenerative mitral  
regurgitation.

Joseph Zacharias  
Lancashire Cardiac Centre  
Blackpool.

# Conflicts of interest:

- Edwards Lifesciences
- Medtronic
- Abbott
- Cryolife
- CMR
- Terumo
- Ethicon

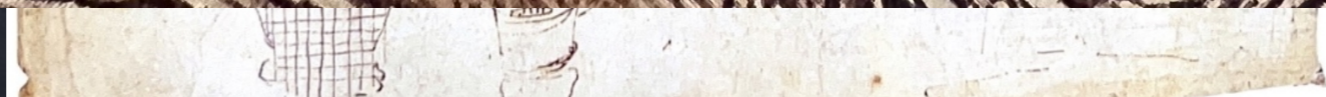
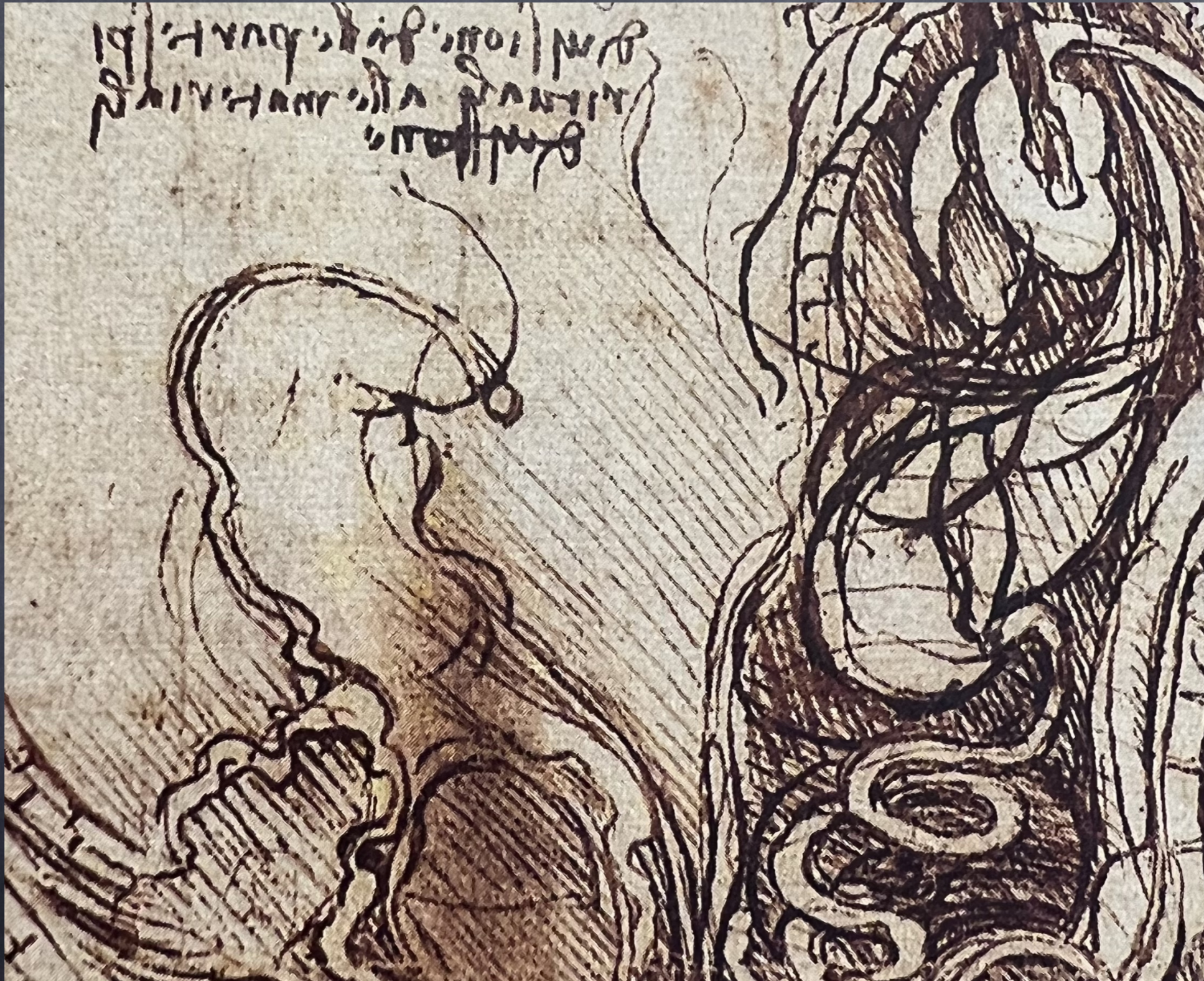


# Mitral Valve repair in the UK

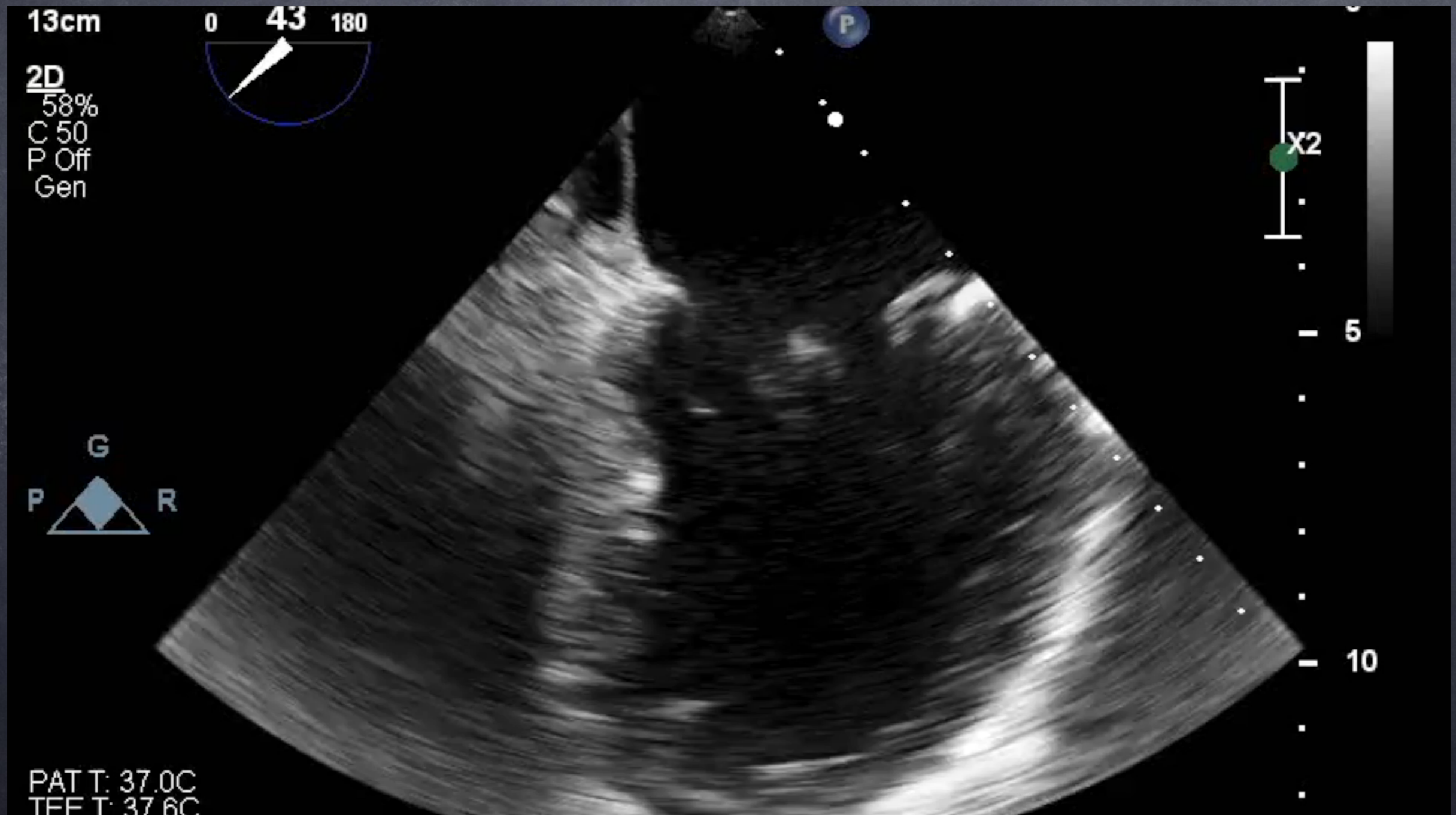
- The French Correction: 1983
- The Italian job: 2001
- The NHS is a slow adopter. Frank Wells was a UK pioneer.
- Training in Mitral valve repair is still ongoing!



“legends” can be wrong!



# Endoscopic minimally invasive mitral valve repair



Camera port

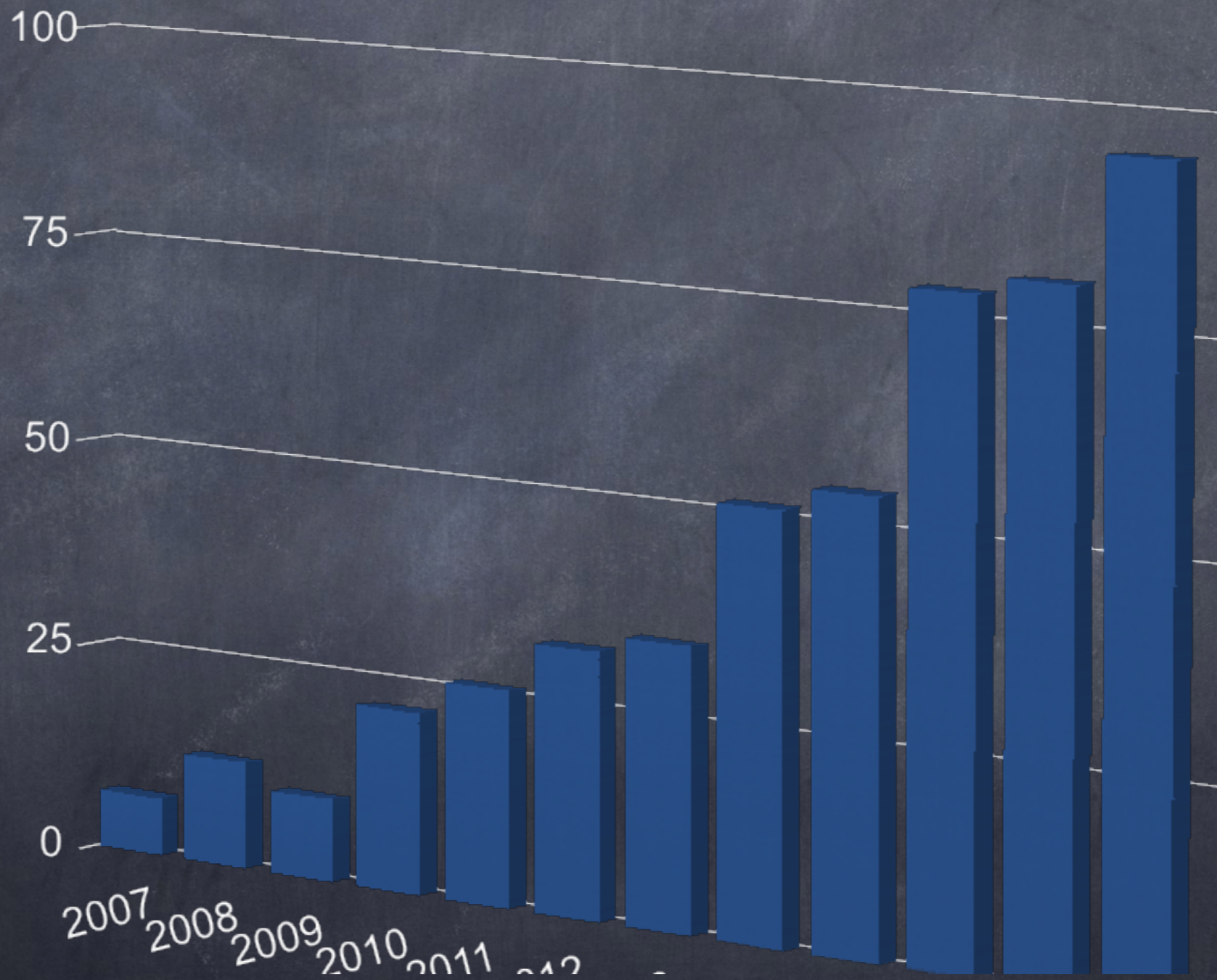
Working Incision

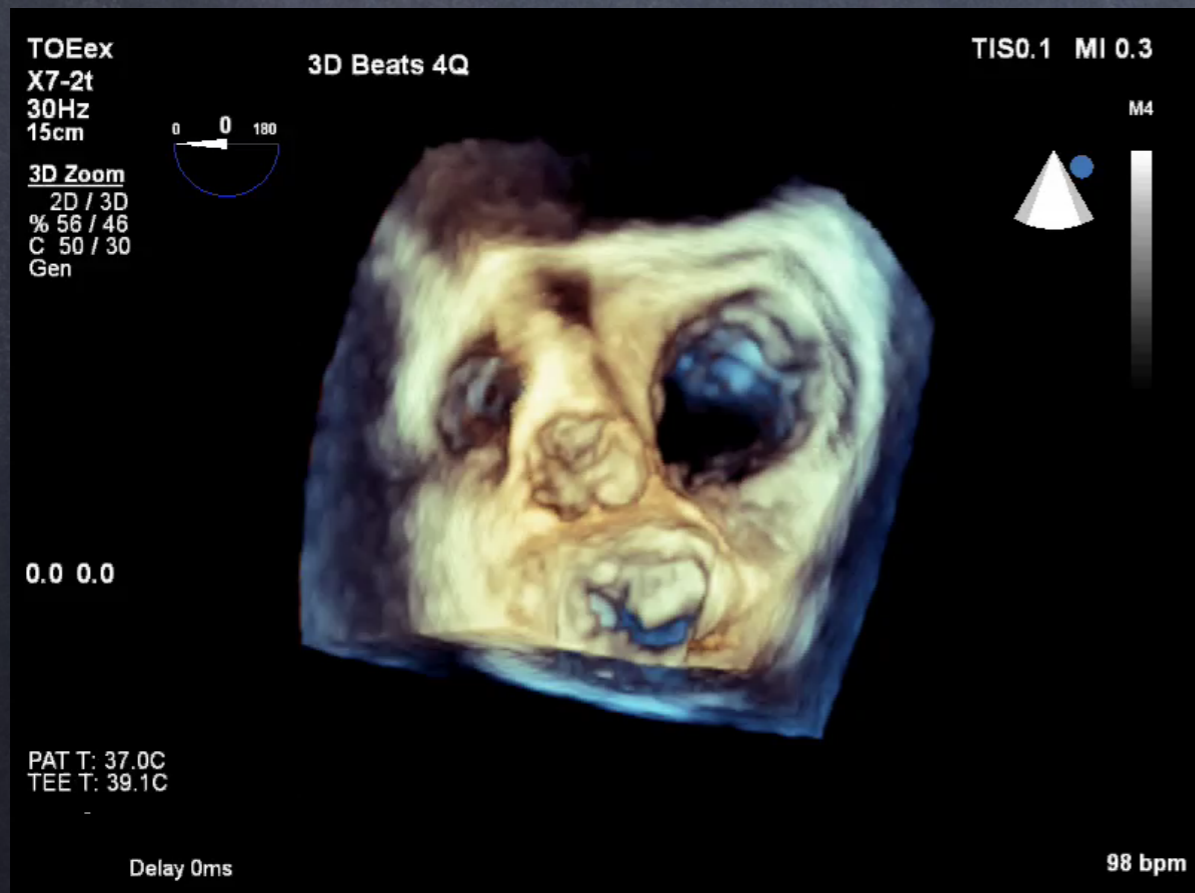
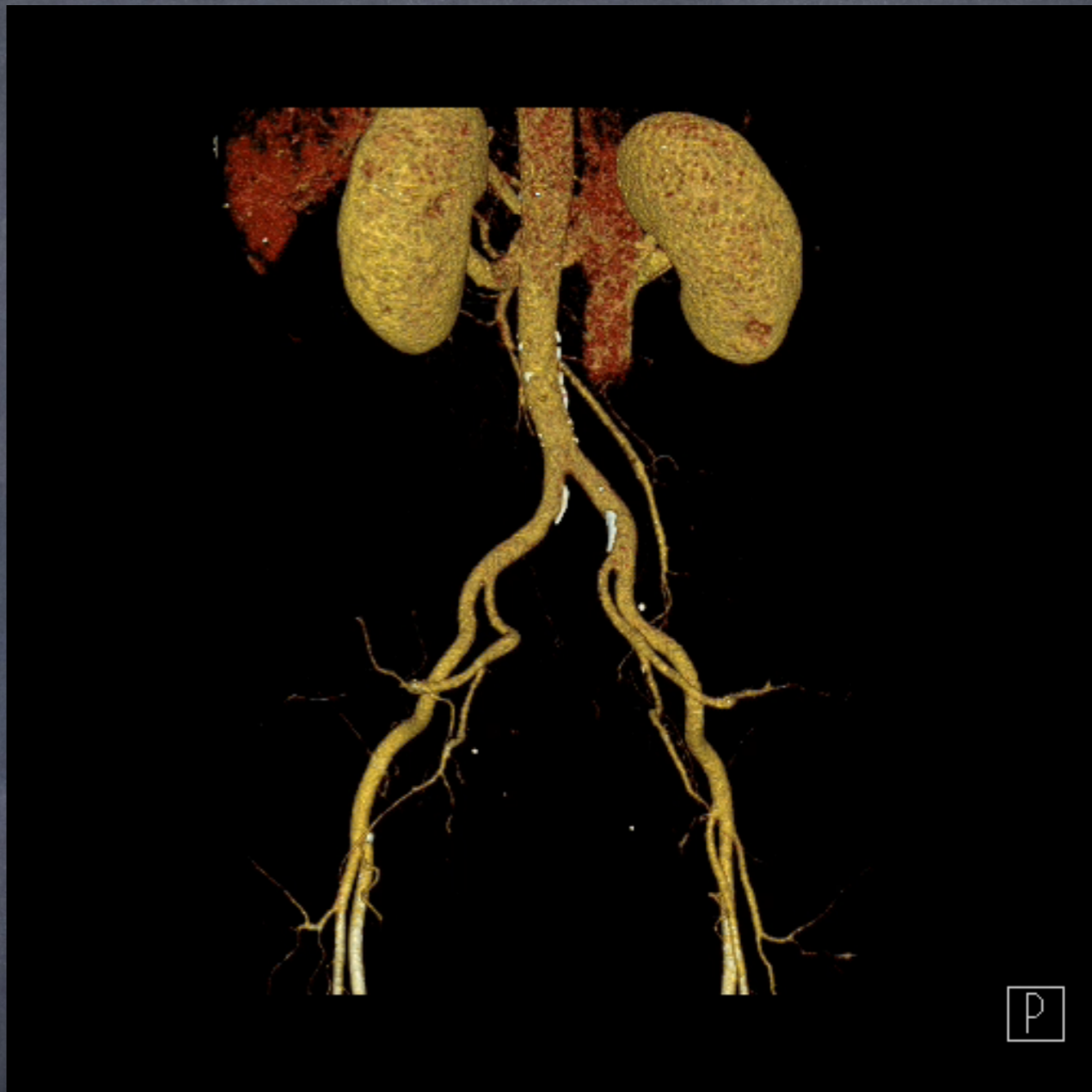
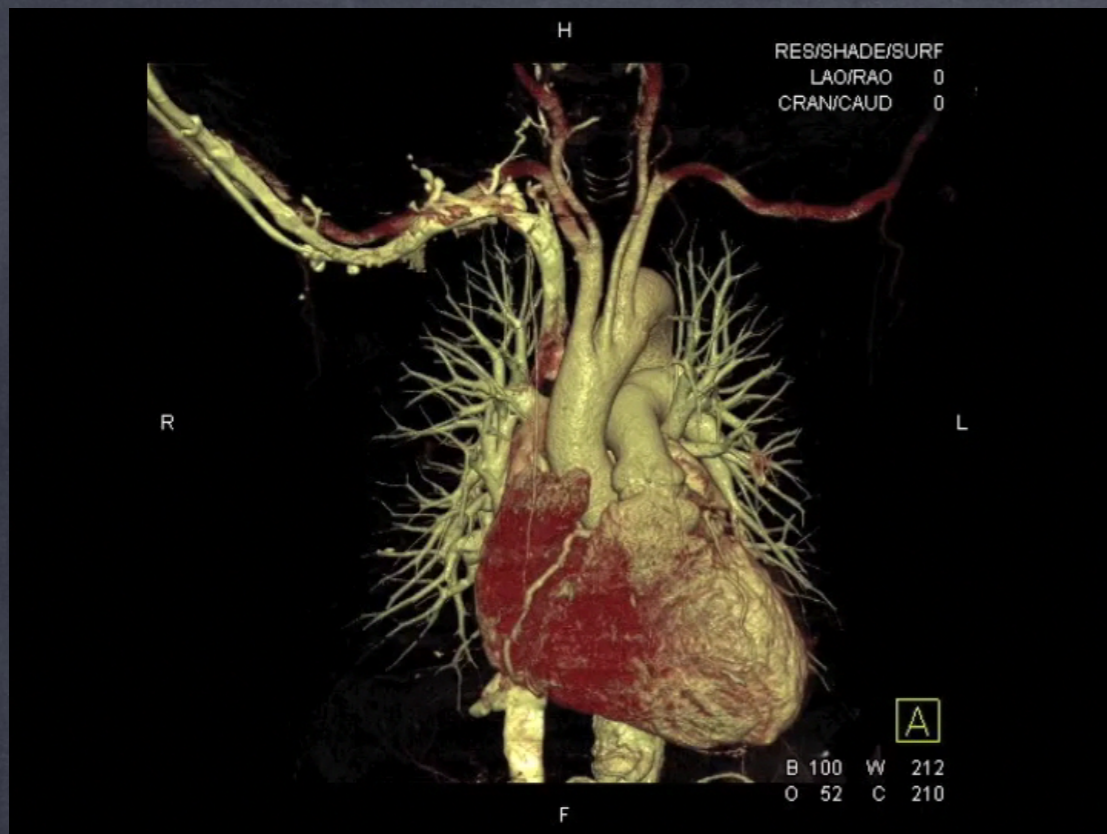
Incision for drains

Groin incision for Peripheral cannulation



# Our experience in Blackpool







Article

## A Propensity Score Analysis of Early and Long-Term Outcomes of Retrograde Arterial Perfusion for Endoscopic and Minimally Invasive Heart Valve Surgery in Both Young and Elderly Patients


Hind Elhassan \*, Abdelrahman Abdelbar, Rebecca Taylor , Grzegorz Laskawski, Palanikumar Saravanan, Andrew Knowles and Joseph Zacharias

Table 4. Post-operative outcomes (matched set).

Variable	Elderly Patients Age $\geq$ 70 (n = 112)	Adult Patients Age < 70 (n = 112)	p-Value
Stroke: transient	1 (0.9%)	3 (2.7%)	$p = 0.60$
permanent	2 (1.8%)	2 (1.8%)	
MI	0	0	$p > 0.99$
New post-operative AF	6 (5.4%)	2 (1.8%)	$p = 0.66$
Renal failure	4 (3.6%)	0	$p = 0.12$
Re-operation (any purpose)	4 (3.6%)	4 (3.6%)	$p > 0.99$
Pulmonary complications	16 (14.3%)	11 (9.8%)	$p = 0.41$
ICU LOS (days)	1.0 [1.0, 1.0]	1.0 [1.0, 1.0]	$p = 0.77$
Inotropes	30 (26.8%)	34 (30.4%)	$p = 0.66$
GI complications	4 (3.6%)	2 (1.8%)	$p = 0.68$
Required blood transfusion	7 (7.1%)	6 (6.2%)	$p = 0.87$
Extubation > 12 h	10 (8.9%)	14 (12.5%)	$p = 0.52$
Duration of hospitalisation (days)	7 [5, 9]	6 [5, 8]	$p = 0.38$
Discharge destination (home)	105 (93.8%)	107 (95.5%)	$p = 0.42$
Reintervention	1 (0.9%)	3 (2.7%)	$p = 0.60$

MI, myocardial infarction; AF, atrial fibrillation; ICU LOS, intensive care unit length of stay; GI, gastrointestinal.

### Cardiovascular Surgery

## Learning Minimally Invasive Mitral Valve Surgery A Cumulative Sum Sequential Probability Analysis of 3895 Operations From a Single High-Volume Center

David M. Holzhey, MD, PhD; Joerg Seeburger, MD; Martin Misfeld, MD, PhD;  
Michael A. Borger, MD, PhD; Friedrich W. Mohr, MD, PhD



Royal College  
of Surgeons  
of England  
ADVANCING SURGICAL CARE

### CARDIOTHORACIC SURGERY

Ann R Coll Surg Engl 2021; 000: 1-8  
doi 10.1308/rcsann.2020.7092

## Establishing minimally invasive cardiac surgery in a low-volume mitral surgery centre

BH Kirmani<sup>1</sup>, A Knowles<sup>2</sup>, P Saravanan<sup>2</sup>, J Zacharias<sup>1</sup>

<sup>1</sup>Department of Cardiothoracic Surgery, Blackpool Victoria Hospital, Blackpool, UK  
<sup>2</sup>Department of Cardiothoracic Anaesthesia, Blackpool Victoria Hospital, Blackpool, UK

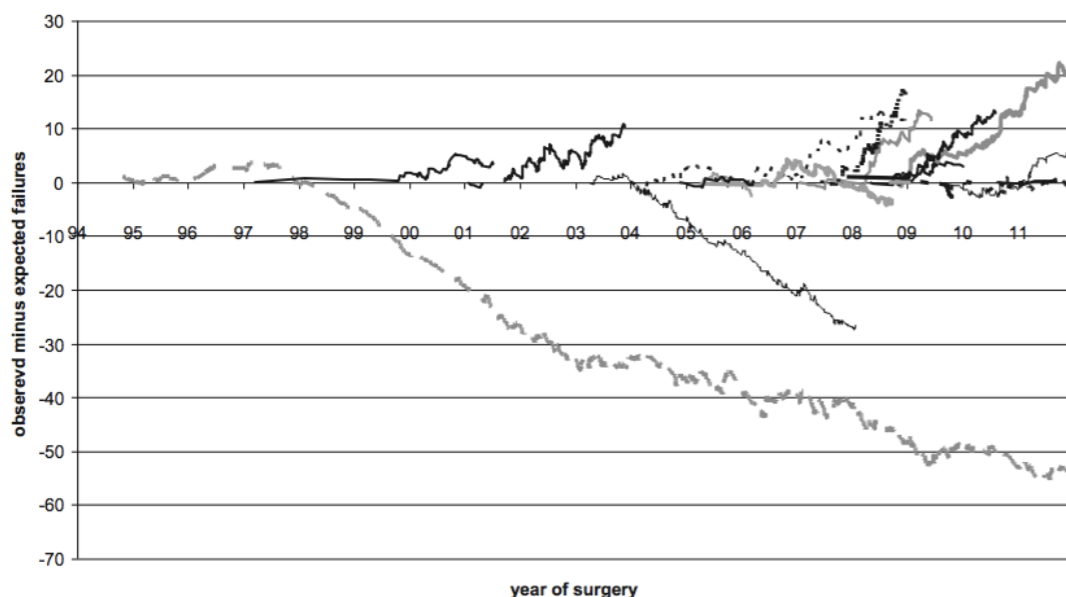


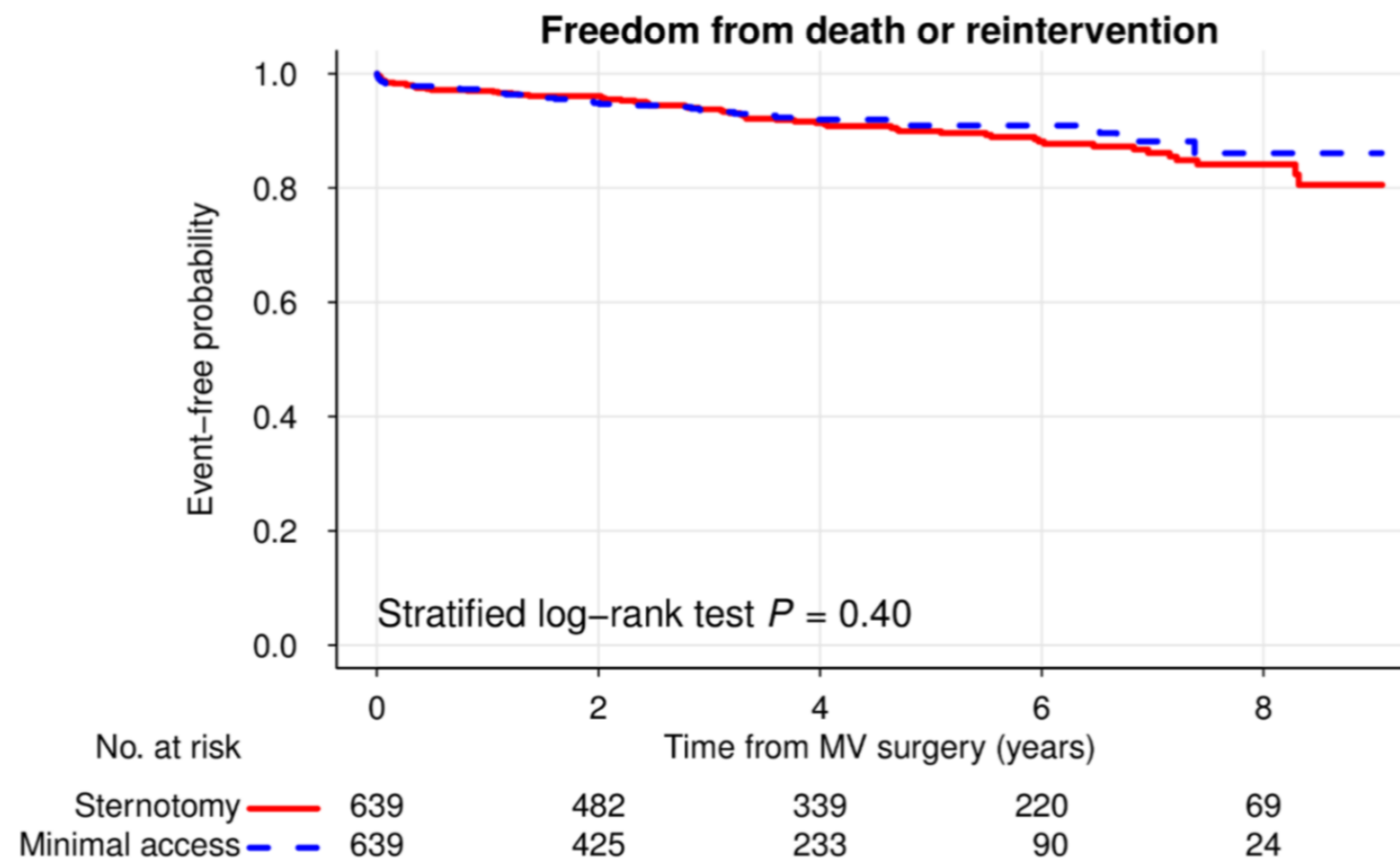
Figure 3. Individual learning curves of all surgeons listed according to the year they started performing minimally invasive mitral valve



ORIGINAL RESEARCH ARTICLE

# Propensity-matched analysis of minimally invasive approach versus sternotomy for mitral valve surgery

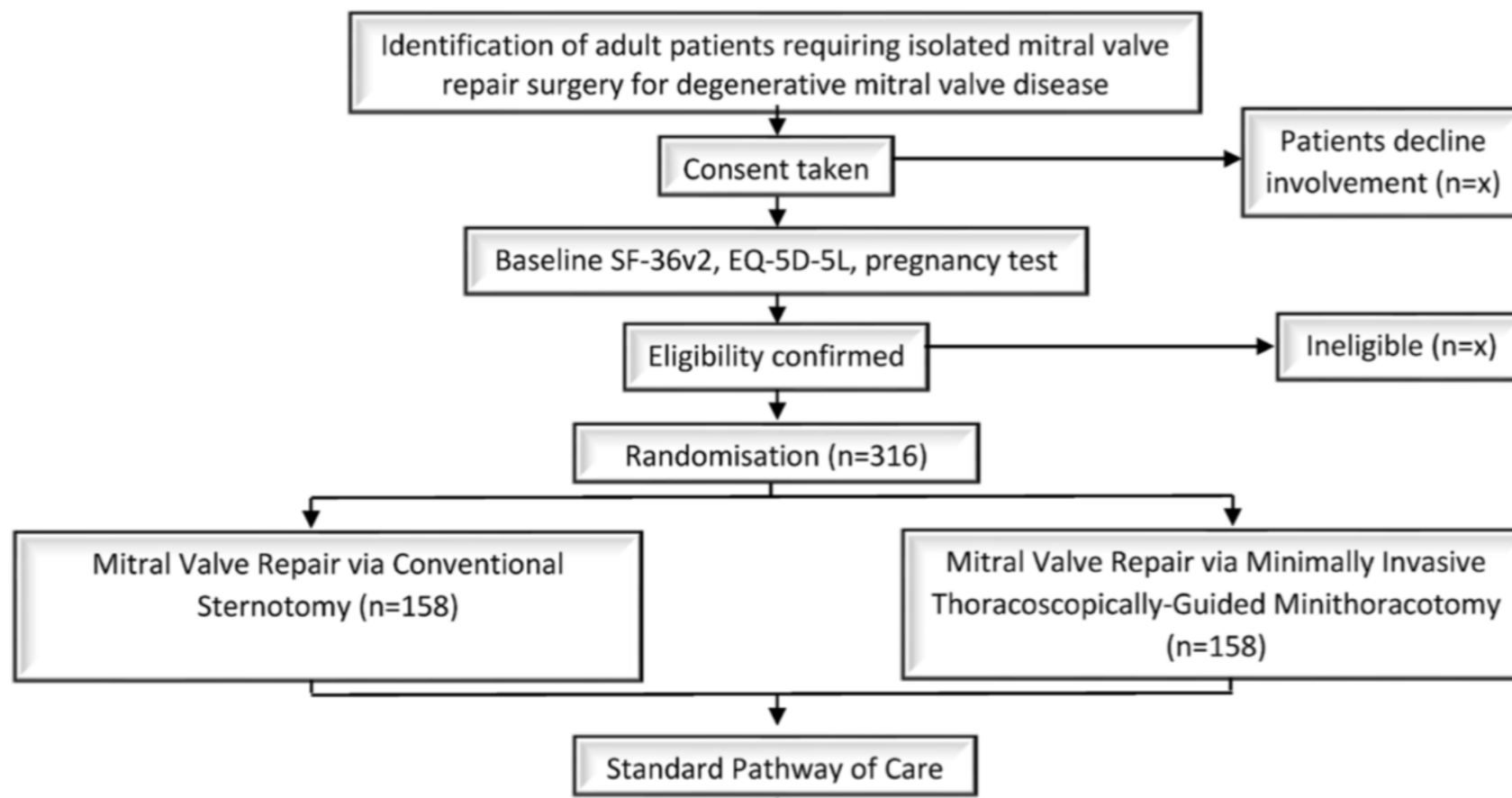
Stuart W Grant,<sup>1</sup> Graeme L Hickey,<sup>2</sup> Paul Modi,<sup>3</sup> Steven Hunter,<sup>4</sup> Enoch Akowuah,<sup>5</sup> Joseph Zacharias<sup>6</sup>



**Figure 1** Kaplan-Meier plot for reintervention-free survival in propensity score matched minimally invasive and sternotomy mitral valve (MV) surgery patients.

# BMJ Open Minimally invasive versus conventional sternotomy for Mitral valve repair: protocol for a multicentre randomised controlled trial (UK Mini Mitral)

Rebecca H Maier <sup>1</sup>, Adetayo S Kasim <sup>2</sup>, Joseph Zacharias,<sup>3</sup> Luke Vale <sup>4</sup>, Richard Graham,<sup>5</sup> Antony Walker,<sup>3</sup> Grzegorz Laskawski,<sup>3</sup> Ranjit Deshpande,<sup>6</sup> Andrew Goodwin,<sup>5</sup> Simon Kendall,<sup>5</sup> Gavin J Murphy <sup>7</sup>, Vipin Zamvar <sup>8</sup>, Renzo Pessotto,<sup>8</sup> Clinton Lloyd,<sup>9</sup> Malcolm Dalrymple-Hay,<sup>9</sup> Roberto Casula,<sup>10</sup> Hunaid A Vohra,<sup>11</sup> Franco Ciulli,<sup>11</sup> Massimo Caputo <sup>12</sup>, Serban Stoica,<sup>11</sup> Max Baghai,<sup>6</sup> Gunaratnam Niranjan,<sup>13</sup> Prakash P Punjabi,<sup>10</sup> Olaf Wendler,<sup>6</sup> Leanne Marsay,<sup>1</sup> Cristina Fernandez-Garcia <sup>4</sup>, Paul Modi,<sup>14</sup> Bilal H Kirmani,<sup>14</sup> Mark D Pullan,<sup>14</sup> Andrew D Muir,<sup>14</sup> Dimitrios Pousios,<sup>14</sup> Helen C Hancock <sup>1</sup>, Enoch Akowuah <sup>5</sup>





Patient Monitor

ECHO Monitor





# MANY ROUTES TO MOUNT EVEREST

Pick which one you  
feel your ability and  
budget will get you  
safely back down!

# What is our peak?

## Key question

Does minimally-invasive mitral valve surgery (MIMVS) have impact on improving sex-specific survival compared to conventional mitral valve surgery (CS)?

## Key finding(s)

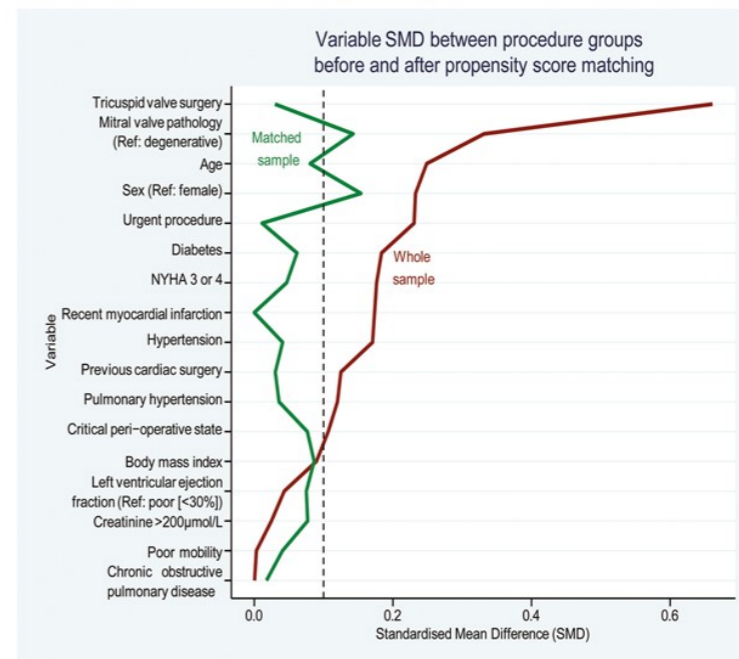
A Cox model was fitted on 342 propensity score-matched pairs of MIMVS and CS patients and adjusted for propensity score. It showed no survival difference with surgical approach, sex or the interaction.

## Take-home message

MIMVS appears not to impact long-term survival either in women or men. However, it might aid the acceptance of earlier intervention with mitral surgery with its better cosmetic results.

956 patients with de novo mitral valve surgery ± tricuspid valve surgery: 417 MIMVS, 539 CS; 424 females

MIMVS and CS patients were propensity score-matched using 16 predictor variables except sex resulting in 342 pairs



Covariate	HR (95% CI)	p-value
MIMVS	1.15 (0.70, 1.88)	0.58
Male sex	0.75 (0.47, 1.20)	0.23
MIMVS and male sex (interaction)	0.95 (0.47, 1.92)	0.89
Propensity score	0.54 (0.17, 1.67)	0.28

# In Conclusion:

This house believes  
minimally invasive mitral valve surgery  
should be “an”  
option  
for  
patients  
with  
severe degenerative  
mitral regurgitation.