"From the Trough"

Perioperative Interest Group Notes

The imperfect opinions in these reports are only meant to stimulate discussion: - they should not be considered a definitive statement of appropriate standards of care.

Date 29/4/21

TOPIC 1: **PCI under General Anaesthesia**

Elective PCI in a man with known triple vessel disease.

Background

- Wheelchair-bound man with muscular dystrophy
- Uses BiPAP at home – for sleep and occasionally daytime (Pressures 19/12cmH20)
- Proceduralist has booked for GA

Issues

- Unable to lie flat, sleeps sitting upright at home. Consideration of ischaemic heart disease contributing to SOB.
- Requires BiPAP if sleeping
- Muscular dystrophy
- Known TVD, Previous PCI with cardiologists only – stented 2 of the 3 vessels. Now proceeding to the third blocked vessel.

Discussion

- Anaesthetic options discussed
- BiPAP required at home, can we administer additional Oxygen via patients own machine?
- Could use HFNP but unlikely to provide enough support given significant pressure on own machine
- Option to borrow a BiPAP machine from ICU
- Consensus that avoidance of a GA in this patient would be preferable
- Uncertain about type of muscular dystrophy but would avoid use of depolarising muscle relaxants

Plan

- Discuss with proceduralist, option for light sedation/no sedation in as elevated position as possible
- BiPAP machine from ICU if needing supplemental O2, consider using own if no O2

- Need some more information on muscular dystrophy and any issues with previous procedure

TOPIC 2 High risk PCI with Impella Device

74-year-old man for PCI to left main coronary artery prior to vascular surgery

Background

- Intermittent claudication at 100m
- Thrombosed popliteal artery aneurysm, requiring stent
- CABG 22 years ago
- Previous LAD stent, now totally occluded
- Open AAA repair 5 years ago, uneventful
- Lives independently on acreage. Active, Chops wood.

Issues

- Elective review by vascular surgeon revealed exertional dyspnoea
- Sestamibi organised by surgical team showed a significant area of reversible ischaemia
- Cardiologist review, proceeded to angiogram
- Previous LAD stent, now totally occluded. All coronary grafts blocked. Native vessels severely blocked.
- If requires PCI it would be High risk– Left-main and LAD disease. Likely need rotablade with significant chance of impaired coronary perfusion and myocardial stunning.
- LVEF = 25%
- Cardiologist advised that if PCI is performed preoperatively, an Impella device would be required

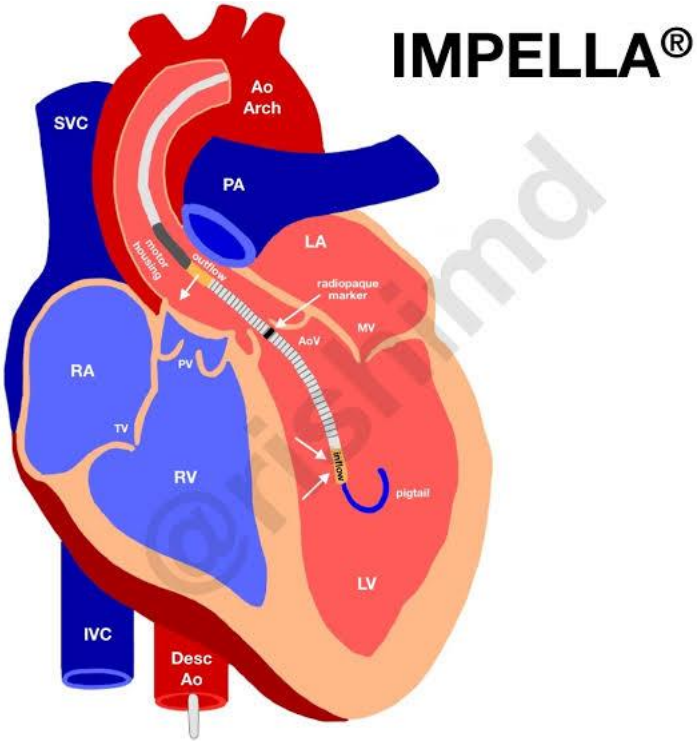
Discussion

Indication for stress test?

- AHA guidelines would indicate that no myocardial stress imaging is indicated
- Patient can perform > 4mets and is relatively asymptomatic
- Cardiologist opinion that medical management is appropriate given lack of symptomatology
- PCI is requirement for further anaesthesia and vascular surgery
- Vascular symptoms are limiting exercise tolerance

What is an Impella device and why is it used?

- Impella is a centrifugal pump which acts as Left ventricular assist device
- The device pumps blood from the LV into the ascending aorta at an upper rate of 2.5L/min
- Percutaneously inserted via 14fr sheath into the femoral artery
- Multiple indications including high risk PCI. See www.impella.com and attached Protect II trial.



Plan

- Continue to present novel cases such as this to aid in dissemination of knowledge
- Consider presentation at CME
- Note vascular surgical patients have baseline higher risk of significant coronary artery disease

TOPIC 3 PEG Tube insertion in Cystic Fibrosis Patient

22-year-old for a PEG tube insertion to supplement nutrition

Background

- CF, end-stage disease
- Lung transplant 2019. Complex post-operative period requiring ECMO
- Lung rejection late 2020
- Recent decision not to proceed to further lung transplant due to disease severity
- NYHA class 4 dyspnoea, wheelchair bound. 24-hour oxygen. BiPAP for sleeping
- Pancreatic insufficiency. IDDM
- Protein C deficiency – bilateral DVT's and SVC thrombosis. Anticoagulated with warfarin
- Nutritional deficit, increased metabolic demand unable to be met due to dyspnoea and general exhaustion

Issues

- CF team and patient requesting PEG to aid in nutrition and improve QoL
- Patient extremely high risk for GA or even sedation
- Would not be able to use BiPAP due to need for endoscopy
- Already ceased warfarin on review at perioperative clinic

- Very challenging case in a remote location

Discussion

Anaesthetic options

- Local with minimal or no sedation. Use of high flow nasal prongs/THRIVE.
- Is an open procedure an option? Would negate need for endoscopy and allow use of BiPAP
- Patient engaged and keen to try under LA

Location of procedure

- Procedural anaesthetist keen to move to theatre 10
- Proceduralist prefers endoscopy
- Difficult situation as endoscopy very remote but procedure likely to happen more efficiently there
- Possible to organise additional anaesthetist support in endoscopy for this case

End of life discussion

- Recent decision (less than a week ago) that lung transplant won't be proceeding
- Patient and her mother understand now that her life is very limited
- No formal documentation of ceiling of care
- Discussion with CF specialist, has an appointment the day after the procedure
- Discussion with patient regarding limitations with anaesthesia care and unsuitability for ICU. Understands same and keen to try and have procedure with as little intervention as possible

Plan

- Investigate possibility of open or radiologically guided procedure
- Liaise further with CF team regarding end of life wishes. She has been cared for them for many years and it is a discussion that would be better performed by them.
- Liaise with DA of day to allocate extra anaesthetist if procedure is in endoscopy suite

TOPIC 4: Hip replacement for lytic acetabular lesion

57-year-old man with metastatic intraductal parotid cancer for Prophylactic THR

Background

- WLE + parotidectomy + temporal bone/mastoid tip resection/neck dissection
- Adjuvant concurrent chemo/radiotherapy
- Multiple post-operative and post-radiotherapy lesions including facial drop and poor mouth opening.
- current smoker

Issues

- New cerebellar and temporal lobe lesions
- No neurological symptoms
- Awaiting neurosurgical review, unlikely to occur pre operatively

- Multiple bony lytic lesions including acetabulum and ischial tuberosity
- Uncertain if having acetabular component to surgery
- Potential difficult airway

Discussion

Anaesthetic plan

- GA vs Spinal discussed
- Concern expressed regarding spinal placement with large and expanding cerebellar lesions
- Radiotherapy to face and jaw, airway may be challenging
- Surgery sounds like it could be complex and lengthy, likely in lateral position
- GA and secure airway would be preferred plan

Neurosurgical review

- Asymptomatic
- Large lesions, increased in size between scans
- Consensus Neurosurgical team should review scans and/or patient preoperatively

Plan

- Neurosurgical review preoperatively – has occurred – aim to proceed to THR for tissue diagnosis of metastatic disease.
- Clarify with surgeon regarding surgical procedure
- Plan for GA and potential difficult airway

TOPIC 5: Cystoscopy

53-year-old lady for cystoscopy and intravesical botox for urge incontinence

- BMI 48
- COPD. Current smoker. 40 pack years
- PFTs showed normal lung volumes but reduced TLCO (likely in keeping with her known pulmonary hypertension)
- NIDDM. Poor glycaemic control. HbA1c = 9.9%
- HFpEF and moderate pulmonary hypertension
- Uncontrolled hypertension
- Non-obstructive CAD
- T-cell lymphoma – currently in remission since chemotherapy and stem-cell harvest but moderate prognosis disease with 43% 5-year mortality rate
- Extremely poor exercise tolerance, resting every 10-20 steps
- NASH

Issues

- Consult in clinic and advised on multiple areas for optimisiation including.
    - Weight loss and dietician via GP
    - Smoking cessation
    - Diabetes optimisation
    - Sleep studies

- Patient had pursued none of these recommendations, citing social stressors.

- Surgeon contacted to request a further 3mth delay.
- Surgeon decided to cancel the procedure, believing conservative measures were more appropriate and that her other health problems were far more important to optimise.

Discussion

Was this the right decision?

- Should we be more compassionate regarding the contribution of her social stressors to her health inertia?
- Is an incontinence procedure likely to be effective in a morbidly obese smoker? Thought to be low value healthcare.
- Could this procedure be done under LA (group consensus was no, based on previous experience).
- Is this paternalistic?
- Possible that the surgical team requested a 'consult' in the hopes that we would say no?

- Ideally the decision to cancel should have been communicated by the surgical team, rather than via periop clinic.
- A letter was sent to the GP which clearly outlines ownership of the decision.

TOPIC 6: Total knee Replacement and untreated IHD

60-year-old man for TKR

Background

- Severe Rheumatoid arthritis, neck subluxation – stable on Humira
- Dasi 3.6 METs. No exertional symptoms
- CVA- on DAPT. Residual hemianopia, ataxia, and seizures
- Aortic root dilatation - stable on TTE no intervention required at present.

Issues

- **IHD**
  - RMWA noted on previous TTE, nil hx of IHD
  - Unable to exert himself due to physical limitations
  - Sestamibi showed a large LAD territory perfusion defect
  - Discussed at cardiology-anaesthetics meeting -> angio
  - Angio - occluded LAD, filling via collaterals, not amenable to PCI and therefore no strategies to reduce his perioperative M&M risks.
  - Cardiologist's letter suggests PCI may be required in the future if he develops exertional symptoms post TKR.

- **Should surgery proceed?**
  - Risk of MACE 6.6% (moderate).
  - SORT score <1% risk of death, NSQIP 5.5% serious complication
  - Risks of poor wound healing or infection with immunosuppression, or flair of RA with known severe disease may not be captured by these scoring systems.

- Main complaint is pain, mobility is already severely limited by RA
- Noted that the rate of persistent knee pain after TKR is not insignificant
- Given significant perioperative risks, proceeding with TKR needs careful consideration.
- Geniculate nerve block is a possibility if main issue is pain (rather than function)

- **Postoperative location if OT proceeds?**
  - Extended period in recovery to ensure excellent pain relief, electrolytes normal and Hb adequate, as this man is at high risk of demand ischaemia.

Plan:

- For discussion with patient and surgical team re. definitive analgesic options ?geniculate neurolysis