"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 17/2/22

TOPIC 1: **Consultation - Deconditioned, large mesh hernia repair**

51yo lady with a large incisional hernia from her previous caesarean sections.

Background

- Asthma with 1 previous hospitalisation but recently well controlled
- Obesity BMI 38
- Hip/back pain
- Likely undiagnosed
- Ex-smoker (low PYH)

Issues

- Undifferentiated SOB
    - 20m on the flat, DASI 5 METS

- Surgeon would like patient to lose weight preoperatively, suggested prehabilitation
- Referred for CPET
    - AT 14ml/kg/min, peak VO2 16ml/kg/min
    - Formal lung function testing normal (nil e/o asthma/COPD)

Discussion

- **Was ordering the CPET test appropriate?**
    - Expensive resource
    - Indications include:
        - Major open surgery
        - Undifferentiated SOB
        - Intermediate surgery to provide assistance with risk stratification, discussions about invasiveness or appropriateness of surgery, and to determine postoperative level of care.
    - Thought that in this instance it may help to determine the cause of her SOB (now thought to be deconditioning) and to provide a guide for prehabilitation targets. CPET is not necessarily needed to guide prehabilitation.

- **Plan from here?**

- While this patient is not considered high risk for surgery based on the CPET results, she could still be optimised in terms of fitness and weight reduction before this elective procedure

Plan

- Discuss the plan and goals with the surgeon
  - Surgeon said this is a wide-necked hernia with a low risk of incarceration or strangulation and so agreed to a delay of 8wks to optimise the patient's weight and fitness.
- Referred for prehabilitation
  - The Kaden Centre is still offering home-based exercise programs which is ideal for this patient who lives at a distance. She is motivated to improve her fitness and has already lost 7kg in the last 2 months so is likely to do well with a program with limited supervision.
- CPET results will be forwarded to the GP, including the formal lung function studies, to guide them in future asthma-medication prescribing (which may not be indicated for this patient).

TOPIC 2: AKA after BAV

68yo male with a smouldering periprosthetic knee infection considered unsalvageable, requiring AKA.

Background

- AF
- Large MCA stroke (likely embolic) while on rivaroxaban, since changed to warfarin. Residual hemiparesis.
- T2DM HbA1c 6.1%

Issues

- Severe AS
  - Previously known to be moderate.
  - Rpt TTE at anaesthetic registrar's request while an inpatient several months ago awaiting AKA (delayed as patient was not mentally ready for the procedure).
  - TTE showed severe AS.
  - Patient had an aortic balloon valvuloplasty
  - Was due to have AKA soon after while off his anticoagulation however COVID resurgence delayed the procedure until now.

Discussion

Balloon aortic valvuloplasty

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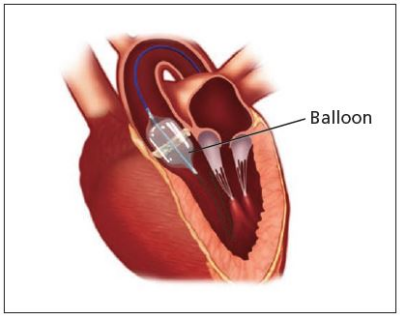
  - **BMJ best practice**
    - First line therapy for clinically unstable patients or those with severe AS who require urgent non-cardiac surgery (due to the absence of requirement for anticoagulation, in contrast to aortic valve replacement, and the short recovery time)
    - Re-stenosis rates are high at 6/12



        - No proven mortality advantage however patients may have significant symptomatology and haemodynamic improvements, which may offer a window for more definitive care (if appropriate)
        - Mortality ~ 3% from the procedure
        - This patient's AS was reduced to 'moderate' severity through the procedure.

- **Severe AS**
    - Grading: see picture
    - Dimensionless index also useful. This is the ratio of the LV outflow tract (LVOT) time-velocity integral to that of the aortic valve jet. DI does not require the calculation of LVOT cross-sectional area, which is a cause of erroneous assessment and underestimation of AVA
    - This patient's mean gradient did not meet the severe criteria but this may be due to LV failure (itself a sign of severe AS).

Aortic Stenosis

Indicator	Mild	Moderate	Severe
Jet velocity (m/s)	Less than 3.0	3.0-4.0	Greater than 4.0
Mean gradient (mm Hg)*	Less than 25	25-40	Greater than 40
Valve area (cm^2)	Greater than 1.5	1.0-1.5	Less than 1.0
Valve area index (cm^2/m^2)			Less than 0.6

- **Haemodynamic mx considerations under anaesthesia**
    - CO is preload dependent - adequate filling P needed for non-compliant LV
    - Sinus rhythm with low normal HR needed for adequate filling time and LV myocardial perfusion.
    - High/normal SVR and DBP to maintain coronary perfusion.
    - Beware neuraxial -> drop in SVR and preload
    - Adequate analgesia to prevent catecholamine surges.

Plan:

- Proceed to OT

TOPIC 3 Middle cerebral artery bypass

60+ year old male for a superficial temporal to middle cerebral artery bypass graft.

Background:

- Left MCA infarct 2017 and recurrent TIAs since, increasing in severity and frequency with a postural component
    - Terrible QoL, fear of episodes, worsening symptoms
- HTN
- PVD
- DM
- Laryngeal cancer – neck dissection, radiotherapy, laser. Residual dysphagia. Likley difficult airway.

- NH resident previously, now cared for by friend.
- CFS 6
- DASI < 4 METS. Wheelchair and walking stick for mobility

Issues

Surgical plans

- Internal carotid occlusive disease so not suitable for vascular surgical intervention
- Reviewed by registrar in the neurosurgical clinic and images/clinical history discussed with the surgeon (not reviewed by the surgeon in person)

Perioperative risks

- Above average for all risks using NSQIP scoring
- Particularly concerning is his risk of discharge to a care location (which the patient says is absolutely unacceptable to him)

Discussion:

Should surgery proceed?

- Concerning that for such a high risk surgery, the patient has not been reviewed by the surgeon directly

Have other causes/solutions to his syncopal events been explored?

- Holter requested by clinic anaesthetist
- Postural BPs and a trial of fludrocortisone could be a low risk investigation/intervention

Could this patient be optimised from a functional perspective?

- Very difficult for him to participate in prehabilitation due to his physical limitations from his hemiparesis.

Plan

- Patient re-reviewed by the neurosurgeon and deemed not suitable for this high risk procedure. Emphasises the importance of speaking to the surgical teams if you have concerns about the appropriateness of surgery.

TOPIC 4: EVAR and ? carcinoid

84yo male with 5cm AAA for EVAR

Background

- Nil CVS/RS dx
- Essential tremor
- MOCA 24/30
- Fungal sinusitis

Issues

? Carcinoid

- Recent hospitalization with severe pruritic rash, postural dizziness, flushing. Suggestion of carcinoid syndrome but no testing undertaken.
- Vascular surgeons happy to defer surgery given AAA 5cm, nil overly concerning imaging findings and asymptomatic
- Panel of biomarkers arranged
    - Serotonin, glucagon, VIP, urinary 5HIA, chromogranin A
    - Chromogranin A elevated (320) however PPIs and H2 antagonists can lead to elevations
    - Endocrinologists queried mastocytosis, however tryptase level was normal
- Endocrinologists said that the flush did not sound like a carcinoid flush and were confident that this did NOT represent carcinoid syndrome
- Rash biopsied (non-specific), commenced on an IL inhibitor for the rash. This medication (like many new monoclonal therapies) does *not* have an associated infection risk and does not need to be withheld perioperatively.

Plan

- Proceed with the EVAR

TOPIC 5: Motor neurone disease, SCC and skin graft

60yr old male with a large tender SCC on his chest.

Background:

- Motor neurone disease
    - Diagnosed 2011
    - Bed bound, wheelchair dependent
    - Bulbar palsy, cannot lie flat (will aspirate), requires suctioning even in semi-recumbent position
    - Full PEG feeds
    - Continuous BiPAP
    - Reasonable QoL, enjoys spending time with his supportive family
- Ex smoker
- IHD – AMI 2015, managed medically
- HTN

Issues

- Should surgery proceed
    - While this gentleman has limited life expectancy the lesion is painful and growing (currently ? 5x5cm)
    - Surgeon confident the procedure can occur under LA, including the graft donor site.
    - With both patient and surgeon very motivated to do the procedure under LA and to work under challenging conditions, high likelihood of success.

- Advanced care planning
    - Complex discussion. Not previously documented or formalised by patient.
    - The patient would ‘like one shot at dying’ meaning if he is in a situation where he has substantially deteriorated he does not want active resuscitation.

    - *However,* he may consider brief periods of additional support (e.g. intubation) if he had deteriorated but not to the extent of, for example, losing consciousness, and if he had a chance to return to his current level of function and disability.
    - This is very fine distinction and requires ongoing thought from the patient between now and surgery, and further discussions between the anaesthetist and patient on the day of surgery.

- Level of postoperative care
    - Ideally this man will have his procedure under LA and return home to his well-supported home environment. No ICU bookings made.

Discussion

Motor neurone disease

- AKA amyotrophic lateral sclerosis
- Progressive dx characterized by degeneration of motor neurons within cortical, brainstem and ventral cord locations.
- Combination of upper and lower motor neurons involved.
- Focus of care is palliative and symptom control, including respiratory and nutritional support.
- Riluzole is an anti-glutamate medication used for symptom control

Perioperative pharmaceutical implications of MND

- Baclofen, diazepam and dantrolene may be used for spasticity
- Abrupt cessation of baclofen may cause an MH-like crisis.
- Avoid depolarising neuromuscular blockers
- Use heavily reduced non-depolarising neuromuscular blocker doses (and a PNS to guide use).
- Consider higher doses of rocuronium and sugammadex for PNS-guided full reversal.
- No association with MH, volatile anaesthesia safe to use.

Plan:

- Proceed to OT under LA
- Clinic anaesthetist to discuss with procedural anaesthetist once OT date and allocations known
- Aim to d/c home same day
- Further clarification of advanced care plan between procedural anaesthetist and patient