



“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 26/8/21

TOPIC 1: NOAC for Mechanical Aortic Valve

45-year-old man for Right middle finger terminalisation revision

Background

- AVR 2015 post episode of Infective endocarditis
- Ex-IVDU on methadone program
- Current smoker – 20+pack years
- Hepatitis C – treated
- PVD
- ETOH excess – intermittent

Issues

- Anticoagulated with warfarin but self-ceased in last 6-12 months
- Multifactorial reasons – social and transport difficulties
- Unable to travel for pathology testing as no longer holds a Driver's license
- GP has referred to cardiology in hospital 3 times in last few months, appointment pending
- Commenced on therapeutic clexane in clinic but when called patient to check on him he had also recommenced his warfarin

Discussion

- Cardiology MDT – NOAC not an option. Requires warfarin anticoagulation.
- Current evidence - NOAC's are inferior to warfarin for stroke and thromboembolic prevention with mechanical heart valves. NOAC's also carry an increased bleeding risk in this population. See attached RE-ALIGN trial.
- Echocardiogram should be done urgently to assess valve
- Discussion centred around difficulties of trying to resolve long-term issues in perioperative clinic. Can be very time-consuming and patient often in the room when advice is being sought. Adds to time pressure
- May often be better to refer to GP but this has its own limitations, especially during COVID times.
- Collaborative approach after clinic appointment often works best

Plan

- Continue warfarin and cease Clexane
- Recheck INR
- Echocardiogram organised

TOPIC 2: Uraemic Cardiomyopathy

Ward Consult – 76-year-old man for consideration of urgent Fistula formation

Background

- Sarcoidosis
- Bronchiectasis – previous haemophilus influenzae pneumonia
- NIDDM
- Chronic Kidney Disease – Hypertensive and diabetic nephropathy
- Nephrectomy – Renal Cell Carcinoma
- Sarcoidosis

Issues

- Admitted to hospital with dyspnoea and worsening renal function
- CXR showed fluid overload and cardiomegaly.
- Echocardiogram performed – pericardial effusion
- Pericardiocentesis - 1.2 Litres drained!
- Significant discussions between treating teams regarding the need for AV Fistula to commence Haemodialysis

Discussion

- Cardiology team advocating for a fistula. Concerned regarding uraemic cardiomyopathy as a cause of fluid overload and pericardial effusion
- Nephrology team of the opinion that uraemia is very unlikely to be the cause.
- Additionally, renal function was improving and if dialysis was required then it could be done via VasCath initially
- Discussion regarding the use of a fistula in the immediate postoperative period. There is often a 6-week delay to allow for maturation of vessels.
- Timing of fistula use is dependent on the use of native vessels vs Graft. Can be used earlier with graft.

Plan

- Discussion between all teams ultimately concluded that procedure wasn't required at present

TOPIC 3: Ivor-Lewis Oesophagectomy with multiple allergies

61-year-old man for Ivor-Lewis

Background

- Oesophageal Cancer – Weight loss 20kg. Dysphagia, NGT in situ. Albumin=35, NACRT – ceased 1 month ago.
- IHD – PCI in 2015. Normal stress imaging

- Chronic pain – lumbar spine degenerative disease.

Issues

- Multiple drug allergies reported including cephalosporins, and Local Anaesthetics.
- Previous facet joint injections – one episode of infection with epidural abscess
- Reports blistering and rash due to Benzocaine – uncertain if this was a localised reaction at the same time as the infection occurred
- Additionally, a query allergy to lignocaine – documented in 2017, uncertain reaction
- No history of anaphylaxis
- No formal allergy testing

Discussion

Conduct of anaesthesia

- Ropivacaine likely the safest choice of local anaesthetic agent
- Consensus that it would be difficult to perform an Ivor-Lewis without use of LA
- Unusual to be allergic to 2 different classes of LA

Allergy Testing

- It would be prudent to discuss with immunologist regarding possibility of performing preoperatively
- Anaesthesia referrals usually wait 6 weeks, but this is in the event of a recent anaphylaxis
- May be possible to have expedited intra-dermal testing for this patient
- Definitive answer on antibiotic allergy would also be of benefit preoperatively

Plan

- Discuss with immunologist regarding allergy testing preoperatively

TOPIC 4: Regional Anaesthesia for Umbilical hernia repair?

Consult - 83-year-old lady for consideration of umbilical hernia repair

Background

- Reducible umbilical hernia
- Recent onset intermittent abdominal pain – 1 hospital admission
- CT during last admission revealed AAA with suspicion of leak
- EVAR performed under LA and fentanyl sedation 07/21. Uneventful.
- General surgical team reviewed in hospital and recommended elective repair of hernia

Issues

- Severe COPD – Home Oxygen 16 hours per day.
- SpO₂ 94% on RA. FEV1=0.99, FVC=1.48. TLC 37%
- Hospital admission 03/21 with infective exacerbation
- Steroid requirement post-EVAR
- DASI=3.9 METs
- NYHA class 3 dyspnoea. Walked approx. 200m on flat at clinic without stopping, profoundly dyspnoeic afterwards.
- Chronic renal impairment – stage 2, deteriorated post-EVAR

Discussion

Should Surgery Proceed?

- Consensus was yes, recent longer procedure was tolerated well
- Preferable risk profile with elective repair rather than an emergency procedure for a strangulated hernia

Conduct of Anaesthesia

- Patient and surgeon very keen for regional anaesthesia
- Patient very well-informed, understands risks and keen to proceed
- Spinal discussed as an option – most felt it wouldn't provide suitable analgesia for peritoneal component of surgery
- Options would be spinal or epidural with surgical infiltration to peritoneum or bilateral rectus sheath blocks (recommended option by local regional experts)
- Notably, the patient would be suitable for a short GA if required

Plan:

- Proceed with surgery
- Discuss meeting recommendations with procedural anaesthetist when allocated.

TOPIC 5

Consult – 71-year-old man for consideration of EVAR

Background

- 5.5cm AAA – incidental finding
- Chronic right sided chest/flank pain. CT performed to investigate.

Issues

- CKD – Stage 4. Haemodialysis, oliguric, hyperkalaemia and anaemia.
 - Currently being considered for renal transplant, AAA repair is a requirement pre-transplant
- IHD – NSTEMI in 2020, admitted with APO
 - Angiogram showed 3-vessel disease, for medical management
 - Sestamibi – Area of reversible perfusion defect in inferolateral wall.
 - Echo – low normal ejection fraction, Mild aortic stenosis
 - Paroxysmal AF – Not anticoagulated due to PR bleeding and epistaxis
- Chronic cough – Cryptogenic pneumonia in 2018. Underwent lung biopsy and VATs.
- DASI = 5 MET's, limited by right-sided pain.
- Recent review by HIPS for right-sided chest pain- concern that patient had significant signs of heart failure and referred to cardiologist
- Patient not seen face-face as anxious to attend due to current coronavirus outbreak

Discussion

Optimisation

- Cardiac assessment required regarding optimising therapy for IHD and CCF. Important to consider deterioration of aortic stenosis.
- Multiple specialists involved for renal and respiratory. Regular review.
- Renal transplant surgery could be extremely challenging

Risk assessment

- NSQIP: 9.7% risk of cardiac complication, 8.7% risk of mortality
- SORT: 2.7% risk of perioperative mortality
- Patient aware of risks and keen to proceed

Plan

- Cardiologist review as above
- Liaise with nephrologist regarding current fluid balance
- Review appointment with patient face-to-face to examine and consolidate discussion of perioperative risk.

TOPIC 6: UPDATE – CPET result for Hepatectomy consideration

Background

- Hepatocellular carcinoma – segment III
- HFrEF 25%. Severe global systolic dysfunction.
- Recent episode of decompensated cardiac failure after inadvertent cessation of furosemide. Quick resolution with recommencement of therapy.
- Current smoker 20 pack years and Marijuana use 1g per week
- CKD – stage 3. Diabetic and hypertensive nephropathy
- IDDM. Hba1c – 8.3%
- Anaemia of chronic disease. Hb = 105.
- Excellent exercise tolerance – DASI 7.25 MET's. chops wood, mows lawns.
- Referred to cardiologist and for CPET

CPET Result

- Sub maximal test ceased due to ST elevation- 6mm in V4. Asymptomatic.
- Peak VO₂ 11.6 mL/kg/min
- Anaerobic threshold 9.4 mL/kg/min
- Nadir VE/VCO₂ 32.4
- BP rise normal throughout
- HR Recovery at min 1 was 2 beats/minute

CPET Parameters & Perioperative Risk

Low Risk Category	AT>11mls/Kg/min Peak VO ₂ >15mls/Kg/min VE/VCO ₂ @ AT <33	-Likely lower risk of mortality or complications if all 3 present -Further testing unlikely to assist -But optimisation may still be possible
Caution	AT 9-11mls/Kg/min VE/VCO ₂ @ AT 33-40	-Risk profile depends on surgery type -Perioperative staff can advise: -If further testing is required -If optimisation possible/ necessary
High Risk category	AT <9mls/Kg/min Peak VO ₂ <14mls/kg/min VE/VCO ₂ @ AT >40	-Definite higher risk group for major surgery if any of these present -MDT meeting would be advisable to discuss patient options, further testing and optimisation

See [https://www.bjaed.org/article/S2058-5349\(19\)30021-6/pdf](https://www.bjaed.org/article/S2058-5349(19)30021-6/pdf) for a beginner's guide to CPET.

Cardiologist Review

- On optimal therapy – would consider addition of ARNI post-treatment of HCC
- Echo unchanged
- Candidate for defibrillator in long-term
- CPET result noted, cardiologist felt that it was artifact
- Cardiology advice - cardiomyopathy or CPET results wouldn't preclude the patient from proceeding with hepatectomy. However, if he were to have significant blood loss or develop perioperative arrhythmias, he would struggle to compensate from a cardiac perspective.

Discussion

- Consensus that patient is too high risk for hepatectomy at this stage.
- CPET results not reassuring. AT borderline, HRR low indicating very poor baseline fitness.
- There is another non-surgical option for treatment – radiotherapy carries 70-80% efficacy as a curative therapy in this case
- Stress imaging - Not indicated at this point, as per AHA guidelines. Additional investigation will not change management.

Plan:

- Discussed with surgeon – proceed to radiotherapy
- Cardiologist will continue to review