



“From the Trough”

Perioperative Interest Group Notes

Based on Cases discussed at the Weekly PIG Clinical Meeting

Website: www.perioptalk.org

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 : 27/4/23

TOPIC 1: Update from last week – Congenital Heart Disease and Endoscopy

42yo lady for Gastrosocopy/colonoscopy/ polypectomy

Background:

- Congenital heart disease - single ventricle
 - pulmonary stenosis
 - moderate pulmonary hypertension
 - No cardiac surgery
 - Yearly cardiology review and echocardiogram
 - SpO2 70% in clinic – usual range 70-80% for patient
- Polycythemia
- Living independently, working. Goes to gym

Issues:

- **Palpitations** – increasing over last few years.
 - Extensive cardiac investigations
 - Atrial ectopics – no intervention required.
 - Reports of increased palpitations recently – no syncope or associated symptoms
- **Anxiety** – significant around awareness of palpitations.
 - Seeing psychologist
- **Functional capacity** –
 - Limited by NYHA class 2 dyspnoea
 - DASI scored 18.7, Mets 5
 - Discussion around accuracy of self-filling form as opposed to clinician questioning
- **Positive FOBT in setting of melaena**
 - Strong FHx bowel cancer – sister Passed 1yr ago
 - Strong indication for testing
- **Annual cardiology review due day after procedure**

Discussion:

Update from cardiologist:

- Patient has previously refused surgery for CHD and refuses all meds
- Appropriate to proceed to endoscopy.
- Tolerance of hypoxia advised during anaesthetic as not correctable

Anaesthetic techniques

- GA v. awake.
- Patient expectation management key
- Would a cardiac anaesthetist have additional skills to offer if more major surgery required (e.g. bowel resection)? Unclear, for further discussion should the need arise.
- Should surgery be undertaken at PHTN centre (Pulmonary Hypertension Australia website lists RPA and St Vincent's as PHTN centres). How does this differ from our service at JHH with a PHTN MDT?

Bowel prep plans

- Patient cognitively and mobility-wise able to manage bowel prep at home.

Plan:

- Proceed
- Bowel prep at home.
- Anaesthetist needs notification/call regarding case
- Cardiology Interest meeting – clarify PHTN centre v. JHH differences

TOPIC 2: Recent ACS, complex urologic issues

34yo lady, consult for consideration of stent change.

Background

- **Complex urological history** – multiple previous surgeries. Right PUJ obstruction and dense ureteric stricture. Previous failed laparoscopic pyeloplasty. Ureteric stent in situ since September 2022
- **IHD – NSTEMI October 2022.** Angiogram showed 2-vessel disease. PCI with DES to culprit LAD lesion. Left Circumflex 80% distal stenosis treated with medical therapy. On DAPT, recommended 12 months duration.
- **IDDM** – suboptimal glycaemic control, long-standing. Recently self-ceased oral hypoglycaemic agents and insulin. Random BGL today in clinic 23mmol/L.
- **Chronic back pain** – describes long-standing sciatica-like symptoms but some suspicion for intermittent claudication. GP has referred to neurosurgery.
- **Current smoker** – 30 pack years. Normal spirometry
- **Complex social situation** – childhood trauma. Currently undergoing significant stressors with her own children.

Issues

- **Timing of procedure after PCI/NSTEMI**
- **Targets for optimisation**

Discussion

- Aboriginal liaison officer possible role
- Timing of surgery – procedure needs to occur due to in situ stent therefore timing to be guided by cardiology and urology teams (ideally would wait 12 mths after AMI but not feasible here).

Plan

- Liaise with urologists regarding clopidogrel plans and timing of surgery
- Physician review for general medical optimisation
- Patient declining social/ALO involvement
- Surgery in a centre with PCI availability

TOPIC 3: POCD risk, cholecystectomy

89yo lady with recent episode of gallstone pancreatitis

Background

- Mild cognitive impairment, 22/30 on MOCA. Known to geriatrician. Living at home.
- Pancreatitis – 1 x episode due to ? thiazide diuretics, 2nd episode with documented gallstones.
- HTN, controlled
- TIA
- OA
- Recurrent falls, mobilises with 4WW
- DASI METS 3.9

Issues

- **Risk of POCD** - Patient concerned about any possible cognitive decline.

Discussion

- Further episodes of pancreatitis may lead to cognitive or functional decline
- Is there a less invasive operation possible (e.g some kind of stenting at ERCP). What would be the risks associated with any alternative procedures (e.g. failure, recurrence, sepsis, damage to surrounding structures etc)
- What is her ongoing risk of gallstone pancreatitis if she does nothing
- Is there any optimisation possible – known to geriatrician
- ? role for melatonin in prevention of postoperative delirium
 - Studies and MAs suggest benefit however heterogeneity in study interventions and outcomes assessed limits the robustness of the results.
 - Possibly acts through restoration of sleep-wake cycles and direct anti-inflammatory actions.
 - Nb. Most studies excluded patients with known pre-existing cognitive issues or those on psychoactive medications (likely the highest risk patients)

- **Discuss with surgeon – update:** no stent options since the stones would still have to pass through the pancreas where they may cause pancreatitis. Cannot quantify risk of further pancreatitis episodes. Recent literature suggests reasonable to conduct lap chole in extreme aged population. Ultimately, patient needs to weigh up the risks.
- **Discuss with patient – update - patient unsure of which path to take.** Rpt appointment made with surgeons for further discussion.
- If OT proceeds, for referral to acute inpatient geriatrics service to facilitate early geriatric co-management. See infographic below from the ASA Perioperative Brain Health Initiative. Available at <https://www.asahq.org/brainhealthinitiative/tools/infographics>

Perioperative Delirium Prevention and Treatment Pathway



General principles

1

Use non-pharmacologic prevention measures

2

Avoid polypharmacy when possible

3

Communicate with preop/PACU nurses and surgical team

Delirium risk stratification and prevention

If patient is ≥ 65 years or
 $\geq 5\%$

- Intraop** → Implement Intraop bundle (see next page)
- PostOp** → Order "Delirium Prevention Interventions" and antiemetics for patients with high delirium risk in PACU orderset
- Sign out delirium risk to PACU nurse

Delirium treatment

1

Evaluate for underlying contributors to delirium

- Physical exam: check surgical wound; check tubes/ lines/drains
- Brief neuro exam
- Vital signs, oxygen saturation, pain assessment
- Targeted Workup: Consider ABG, UA, CBC, BMP, TSH, LFTs, UTox, cultures, EKG, Chest X-ray

2

Evaluate for reversible precipitating or contributing factors

- Drugs/medications /polypharmacy
- Electrolytes (Na, Ca, acid-base disorders), Environment change
- Lack of drugs (withdrawal), Lack of sleep
- Infection, Immobility (catheters, feeding tubes), Iatrogenic
- Restraints, Reduced sensory input (vision, hearing), Respiratory (hypoxemia/hypercarbia)
- Intracranial (stroke, bleed, seizure, meningitis)
- Urinary retention, constipation, Uncontrolled pain
- Metabolic (hypoxemia, hypercarbia, glucose, uremia, hepatic encephalopathy, thyroid dysfunction)

3

Review medications

- Discontinue contributing medications (ex: Beers Criteria) when possible

All phases

General recommendations



Enable the patient to wear glasses and hearing aids for as long as possible



Provide frequent reorientation when awake



Keep it simple: avoid polypharmacy when possible

PONV management

Preferred order of anti-emetics

- Preventative measures: propofol infusion, aprepitant (if very high risk)
- Ondansetron (4 mg IV q8h)
- Haloperidol (0.5 – 1 mg q8h)
- Metoclopramide (5 mg IV once)

Avoid (when possible)

- Dexamethasone (especially doses > 4 mg)
- Diphenhydramine (Benadryl)
- Hydroxyzine (Vistaril)
- Lorazepam (Ativan)
- Prochlorperazine (Compazine)
- Scopolamine

Medication management

Medication Class	Examples	Precautions	Rationale
NSAIDs	Ketorolac Diclofenac Ibuprofen	• Avoid when GFR < 30 (Stage IV – V CKD) or in AKI • Use caution with repeated doses	Increased risk of GI bleeding, increased risk of AKI (for ketorolac specifically)
Sedative Hypnotics	Benzodiazepines	Avoid (except for specific indications such as seizure)	Increased risk of delirium, cognitive impairment, falls, fractures
	Gabapentin	• Reduce dose or avoid when GFR < 60 • Avoid in patients with ESFD	Increased risk of over-sedation
	Meperidine	Avoid, especially in patients with CKD	Higher risk of neurotoxicity including delirium
Anticholinergics	Scopolamine (Phenergan) Prochlorperazine (Compazine) Diphenhydramine (Benadryl) Hydroxyzine (Vistaril) Tricyclic Antidepressants	Avoid	Increased risk of over-sedation, central anti-cholinergic side effects (including delirium)
Other psychoactive medications	Steroids (dexamethasone) Antipsychotics	Avoid or use cautiously	Increased risk of delirium

Preop

If patient is ≥ 65 years or has an AWOL-S predicted risk of delirium $\geq 5\%$:

- Administer PO acetaminophen
- Use caution with Potentially Inappropriate Medications (refer to table)
- Keep glasses, hearing aids, and dentures in a separate bag within patient belongings for easy access

Intraop

Patient safety and risk mitigation

- Consider age-related alterations in physiology when choosing anesthetic technique
- Account for reduction in GFR in medication dosing
- Continue necessary cardiac medications pre- and intraoperatively
- Maintain hemodynamic stability
- Carefully position and generously pad high pressure areas to avoid skin breakdown or nerve injury
- Use goal-directed fluid management strategy targeting euvolemia
- Provide pre-warming and active warming to target normothermia
- Consider depth of anesthesia monitoring when available



Pain management

- Use multimodal (opioid-sparing) analgesia
- Consider non-opioid adjuncts when appropriate (ex: acetaminophen, lidocaine infusion, low-dose ketamine infusion, magnesium infusion)
- Use neuraxial or regional techniques when appropriate

Postop

- Use Delirium Risk PACU orderset to order delirium prevention interventions and antiemetics for patients with high delirium risk
- Sign out delirium risk to PACU nurse and surgical team
- Monitor for signs of active delirium and treat accordingly

TOPIC 4: Value of OT v. risks.

80+ yo lady with fistula draining from hard palate to nasal cavity. Related to previous traumatic injury. Previously the cyst was not draining, causing recurrent infections. Now with fistula, patient experiences post nasal drip but no recurrent infections and nil other concerning fx. Option of surgical repair given to patient.

Background

- Metastatic SCC with axillary LN involvement (primary unknown). Recent radiotx to axilla.
- Bilateral massive PE Sep '22 (presumably due to thrombophilia from SCC)

Issues

- **? appropriate to proceed with OT while SCC progression risk remains unclear. No oncologist review post radiotx. ? Plan.**
- **VTE mx and timing**

Discussion

- Palate issue not affecting QoL. Surgeon agrees that surgery is not essential and certainly not time sensitive but patient keen to go ahead. Reasons unclear.
- Oncologist reviewed – review in 12/12. Nil concerns raised by them.
- Patient aware of VTE risks and other perioperative risks.
- >3/12 since PE therefore highest risk time has passed. Appropriate for temporary NOAC cessation.

Plan

- Discuss with patient and proceed if this remains their choice.

TOPIC 5: Surgery after pericarditis

54yo lady, laparoscopic oophorectomy

Background

- Ovarian Cyst – on background of family history of ovarian cancer
- OSA – complaint with CPAP therapy

- PHTN – Stable, PASP = 50mmHG. Regular cardiology follow-up
- Pericardial Effusion, Restrictive Pericarditis, and Pleural Effusion – May 2022 requiring thoracoscopic drainage, pleurodesis, and pericardial biopsy. Aetiology unknown, no recurrence. On reducing dose prednisolone. NYHA 3 dyspnoea.
- NIDDM – HbA1c = 8.3%.
- COPD – mild, no admissions, Distant ex-smoker
- HTN and dyslipidaemia
- Schizophrenia, PTSD and depression – stable disease
- DASI METS 5.3

Issues

- **Timing of surgery after pericarditis and pericardial/pleural effusions**
- **Opportunities for optimisation**

Discussion

- Ideal timing from pericarditis – unknown
- ? Cardiopulmonary rehab – may be offered at Armidale
- Surgeon says no urgency for surgery given Ca125 stable however ? reliability of Ca125 given we don't use it as a screening tool in general population. Must be guided by experience and expertise of the gynae oncology team.
- Indication for surgery – would likely meet the criteria for consideration of surgery even without her anxiety, given FHx
- ? discuss with rheumatologist or possibly at the PHTN MDT

Plan

- Discuss cardiopulmonary rehab with patient
- Discuss patient with rheumatologist
- Given stable, small pericardial effusion and no evidence of HD compromise, appropriate to proceed to surgery from HD-stability perspective.
- Unclear re timing of surgery at pericarditis – for further discussion with cardiologist.