



“From the Trough”

Perioperative Interest Group Notes

Based on Cases discussed at the Weekly PIG Clinical Meeting on 20th February 2020. Publication date 26th February 2020.

Website: www.periotalk.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.

TOPIC 1: Is this patient suitable for pneumonectomy?

A 59 year old female booked for left upper lobectomy +/- pneumonectomy

Medical history

1. Lupus
 - Peripheral joint symptoms in winter managed with plaquenil and voltaren during cold months.
2. Ex smoker- 40 pack years, ceased 5 years ago

Spirometry

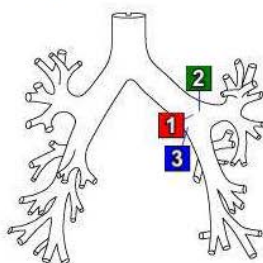
FEV1 1.27L (50% predicted) / FVC 2.0 L (63% pred)

TLCO 53% predicted

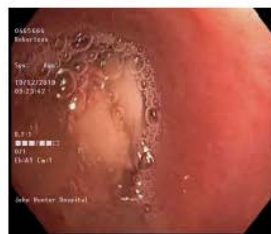
Nil reversibility on bronchodilator

Images from bronchoscopy in December 2019 with left main bronchus lesion

Images:



Tracheobronchial Tree



1 Left mainstem bronchus



2 Left mainstem bronchus



3 Left mainstem bronchus

Discussion:-

1. Is she fit for a pneumonectomy? There was discussion about the pre-operative assessment of fitness for lung resection, and the use of spirometry to identify the postoperative predictive values for FEV1 and TLCO. The aim is to have sufficient lung for a measure of post op value of >40% predicted for each. Given that this lady already had significant limitation, would she have enough. A conversation with the surgeon found that with the left main obstruction her left lung was not contributing anything to her spirometry, and the measure value would likely be the postoperative predicted value. Additional investigations such as VQ studies may assist in quantification of this.
2. Should we use a left or right sided DLT? Given the possibility of pneumonectomy and the presence of a left main bronchus lesion should a right sided tube be preferred. It was agreed that a discussion with the surgeon would assist in making the appropriate choice. The increased difficulty of right sided DLT was raised.

TOPIC 2: Anaemia and complications of iron infusions

A 66 year old female seen in pre-operative clinic for a C6/7 Anterior Decompression and Iliac crest bone graft. She is booked for surgery early March.

Medical history:

1. Neurofibromatosis
 - Previous schwannoma resected at T10.
 - Has had gene studies performed – Type 2.
2. Type 2 diabetes
 - Poor control – last HbA1c 10.4%. Her HbA1c has been > 9% for more than 2 years.
3. Chronic anaemia
 - Hb chronically 105g/L. Ferritin: 25mcg/mol/L. Previous iron infusions had caused renal failure.
4. Obstructive sleep apnoea
 - Previously had CPAP machine. Reports broken at present.
5. Benign intracranial hypertension
6. Mild Aortic stenosis
7. Obesity
 - BMI 44.

Discussion: -

- Diabetes: The current guideline for major elective surgery recommends HbA1c < 8.5%. This patient is currently being reviewed by an Endocrinologist in the community. Despite this her control is poor, and worse recently. The discussion was reviewed the pros vs cons of proceeding. The Australian Diabetes Society recommends deferring elective surgery if HbA1c > 9%. It was agreed that there should be a discussion between Anaesthesia, Neurosurgery and Endocrinology about suitability to proceed and potential to optimise.
- Anaemia: Given that this surgery is unlikely to have more than 500ml blood loss or require transfusion – it was agreed that as per our draft guidelines she would be appropriate to proceed to surgery. Her anaemia can be managed in parallel by her GP. Also given her history of complications from iron infusions, no one was eager to recommend! See the Draft Preoperative anaemia guidelines presented recently at CME. These are available on periopark.org : <https://periopark.org/perioperative-guidelines-helpful/anaemia-screening-perioperative-management/>

TOPIC 3: Diabetes and vomiting

50 year old female referred for a consultation for gastroscopy to investigate constant vomiting.

The symptoms had persisted intermittently over 10 years, however had worsened in the past 6 months to the point where she now has to take a vomit bag with her wherever she goes. She reports that she can no longer go to the shops or play with her grandchildren.

Medical history

- Type 1 diabetes
 - Over the last year her HbA1c had been 10.4%

Gastric emptying study was normal

She was of normal weight, although reports a recent loss of 10 kg.

Patient reports having had a gastroscopy 2 years ago with no anaesthetist and had respiratory arrest, 30 seconds CPR was performed by the proceduralist. There was no documentation of the events, aside from a dose of midazolam and fentanyl, and the patient was sent home that day.

Following this event the patient has seen Neurologist for short term memory loss. In the consultation she became upset and cried, reporting that she currently has very poor quality of life.

Discussion: -

- Should we optimise her diabetes prior to this surgery? It is only minor surgery, therefore unlikely that optimising diabetes control will improve outcome from surgery. It was agreed that she should proceed to surgery and have her diabetes reviewed in parallel.
- Was diabetic gastroparesis the cause of her symptoms. It seemed unlikely given her normal gastric emptying study
- Should she have a general anaesthetic for her gastroscopy. She reports lots of vomiting, however has normal gastric emptying. There was much discussion of the pros and cons.
- Should she also be retested for H pylori? She had been previously treated for the same.

TOPIC 4: Paraganglionoma

A 39 year old male seen in preoperative clinic for removal of left neck paraganglionoma. This surgery was to involve 2 ENT surgeons and a neurosurgeon. He was to be admitted on the day prior for embolization of arterial supply to paraganglionoma in the interventional neuro-radiology lab.

Previous medical history

1. Smoker
2. Voice changes – progressing over 18 months.

It was noted in the preoperative clinic that he had urinary metanephrines, dopamine and adrenaline that were above the normal ranges. At this time there had been no consultation with the endocrine team.

A referral was made to the endocrine team. They advised that this should be treated similar to a pheochromocytoma, and assumed to be a secreting tumour. He was commenced on phenoxybenzamine and his operation deferred for at least one month. He will have a further review with Endocrine service prior to his operation.

Discussion:-

1. Paraganglionoma – neuroendocrine tumour from neural crest cells. A quick Wikipedia search suggested only 1-3% are secretory. See link : <https://en.wikipedia.org/wiki/Paraganglioma>
2. Importance of endocrinology involvement in such tumours. If treatment is similar to pheochromocytoma then it is to be expected that beta blockers will be commenced in addition to alpha- blockers.

TOPIC 5: Any room for improvement?

A 40 year old female referred to the clinic for consultation about suitability for surgery for wide local excision of 10cm vulval mass.

Medical history

- Ischemic heart disease
 - 1 x STEMI and 2 x NSTEMI.
 - Only minor disease on angiogram
- Left ventricular thrombus (2018) on warfarin
- Right popliteal bypass and embolectomy (2019)
- Type 2 diabetes
 - Poorly controlled. Hb A1c 11.
 - Endocrine review – poorly compliant with treatment. Limited capacity to improve prior to surgery.
- Undefined prothrombotic disorder. Complications as above. Maintained on warfarin (INR 2-3)
- Smoker
- Obesity (124 kg)
- G10 P9.

Pathology report of vulval biopsy taken in late 2019 suggested a? paraganglionoma.

This patient was discussed with:

1. Endocrinology – limited capacity to improve with poor compliance. Suggested admission day prior for insulin infusion.
2. Cardiologist (patient's own) – Suggests to bridge warfarin with clexane given the pro-coagulant disorder. No further intervention given previously normal coronary arteries.
3. Gynae-oncology team – given the possible pathology of paraganglionoma – does she need additional screening for a secretory tumour.

Discussion:

- Further discussion on pathology of paraganglionoma
- Is this an unusual site for paraganglionoma? Does a secretory tumour explain the unusual medical conditions of this patient? Uncertain.
- Role of promoting smoking cessation prior to surgery (see attached paper on success of nicotine patches in a pre-operative setting in Australia)

TOPIC 6: Neoadjuvant chemotherapy and CPET

A 75 year old male planned major urological surgery (cysto-prostatectomy and ileal conduit). The surgery was to be performed the following week.

Medical history:

- Hypertension
- Type 2 Diabetes mellitus – HbA1c in acceptable range
- Hemicolectomy for colorectal cancer in 2008
- Ex-smoker (60 pack years)

Diagnosed with invasive bladder cancer in 2019. Treatment with neoadjuvant chemotherapy.

CPET performed prior to chemotherapy. Formal spirometry also performed with CPET.

- Spirometry – 3.2L/3.8L. His FEV1 was 132% predicted! There was minimal airflow limitation.
- CPET – VO2 peak 16.8mL/kg/min and Anaerobic threshold 10.9mL/kg/min

Repeat CPET performed 3 weeks after chemotherapy. Patient reports still having significant limitations in functional capacity following chemotherapy. On this occasion his anaerobic threshold was measured at 7.4mL/kg/min: . He was also anaemic with Hb of 101g/L, with normal iron studies.

Following discussion with the CPET multidisciplinary team (Anaesthetists, Surgeons, Respiratory Physicians, Respiratory Scientists and Physiotherapist), the consensus was that he should have his surgery deferred and be commenced on an exercise program. A referral was made to the Kaden Centre in Waratah for a supervised program with an exercise physiologist. His surgery was deferred for 3 weeks.

Discussion: -

- The role of CPET in the assessment of patients prior to surgery. There is evidence to support its role in the prediction of risk of surgery (especially of respiratory complications in the METS trial).
- The use of CPET to guide timing of surgery following neoadjuvant chemotherapy. By testing patients prior to chemotherapy, we can objectively assess when the patient is able to return to their previous fitness level by testing prior again prior to proposed surgery date. If there is still concern it can allow discussion with the surgical team about optimal timing of surgery.
- The use of exercise therapy (or Prehabilitation) to improve the patient's fitness prior to surgery. The results of this is able to be measured by CPET testing.