



The Weekly Probe

6th May 2016

Volume 13 Issue 13

Welcomes, Farewells and Thankyous- With the change of registrar term, thanks to all the departing registrars who have moved on to new terms- thanks for all your hard work over the last couple of months. Welcome to all the new or returning registrars- some aspects have changed so if you have any questions just ask.

Legionnaire's – a repeat reminder regarding Legionnaires as there has apparently 3 cases involving patients who have been in the Wynyard area in the city. Keep an eye out for similar cases (see Probe 2016 no.9 re Legionnaire's)

Pneumothorax Trial – A reminder that TSH ED is participating in a multi-centre clinical trial to look at the optimal management of the spontaneous pneumothorax. People with moderate to large primary spontaneous pneumothorax (PSP) are eligible to participate in the trial.

The trial is investigating whether conservative management or interventional management (small bore chest drain insertion) leads to better patient outcomes. The folder on the desk near the “hypokit” (on the desk near bed 9-10) also has more information.

And if you are looking after a patient with pneumothorax, don't forget to flag them for the trial. You can contact Alison M 24/7 if a potential PSP study patient arrives.

THIS WEEK

“Throat swelling” from Taro
Pericarditis
Joke / Quote of the Week
The Week Ahead

Throat swelling from Taro

25yo girl presents with lip and throat swelling after swallowing one stalk from a stew containing multiple veges including “Indian taro” which she eaten many times before. On examination her obs are normal – chest clear with no stridor , her tongue and her hypo / oropharynx are not swollen yet mildly injected. She can swallow fluids yet due to the irritation she prefers to spit out her saliva. What is going on?

Taro is a food widely grown and eaten in watery tropical regions of Africa, Asian , central America and the Pacific islands. Subsequently it is also eaten by patients who visit our EDs.

Taro is a large perennial herbaceous plant growing up to 5-6 feet with distinctive leaves which grow like an elephant's ear. However it is the stem and the corm, the root ball, can be eaten. I'm going to take their word for it but apparently it's delicious, crispy-textured meat from the corm becomes soft and edible once cooked and has nutty flavor just like that of water chestnuts.



However taro needs to be prepared and cooked properly. The main problem with the plant as a food is that it contains calcium oxalate crystals. Note that oxalate crystals are not exclusive to this plant and Poison's report other cases where children in particular (? Extremely hungry vegetarians endemic to the Newtown area) chew on a plant in the garden. Many other species contain this include agaves, rhubarb, philodendron etc.

Two forms of oxalate exist, with different toxicity yet note that it can be fatal.

- The insoluble salts of oxalate is the form of interest here. The toxicity is mainly local, causing oral and upper airway irritation. This can result in a spectrum of injuries from burning sensation and pain in mouth and throat, swelling and ulceration with subsequent airway obstruction. I suspect they have spoken to a drug affected surf board shaper to get this opinion but apparently it is like eating a piece of fibreglass. Skin or ocular symptoms may also be experienced. The onset is immediate and symptoms usually resolve within days
- Systemic absorption is rare, as the irritating effect of the oxalate crystal on the mouth deters the subject from ingesting further. However when large amounts are ingested systemic effects may be seen. Note that these symptoms are similar to that seen with anti-freeze ingestion – ethylene glycol . The onset of the systemic symptoms are slower, ranging from 2 to 12 hours. Symptoms include:
 1. Minor cardiac arrhythmia to ventricular fibrillation.
 2. Acute pulmonary oedema and respiratory depression.
 3. Acute liver failure from hepatocellular damage and centrilobular necrosis.
 4. Acute renal failure.
 5. Metabolic acidosis as a results of the multi-system failure.
 6. Hypocalcaemic state causing tetany.
 7. Epileptic seizure and cerebral oedema.
 8. Profuse vomiting and/or bloody emesis and diarrhoea.

In this case, the stems were not cleaned and cooked adequately, with most sites recommending ~ 15 min of boiling. This explains why she had eaten this many times before with no problems- that day she and her boyfriend had been doing the cooking.

Take Home points – let someone else do the cooking – don't eat taro

Ref: E Yuen **Upper airway obstruction as a presentation of Taro poisoning**
Hong Kong J .emerg.med. 2001;8:163-165

PERICARDITIS

We see a large number of patients who present with chest pain , and one diagnosis that is commonly mentioned is pericarditis. Last year the European Society of Cardiology published the “2015 ESC Guidelines for the diagnosis and management of pericardial diseases” (which is also available [online](#)), so it's a timely opportunity to review this illness.

Pericardial syndromes include pericarditis, myopericarditis, pericardial effusions, cardiac tamponade and constrictive pericarditis, and there may be some overlap with these illnesses, yet this discussion will focus on acute pericarditis

Acute pericarditis may occur as an isolated entity or as the result of a systemic disease. In 9 of 10 patients with acute pericarditis, the cause of the disease is either viral or unknown (idiopathic). Other

causes include post AMI, post traumatic, post irradiation, from tumour invasion, uraemia, post-surgical, associated with inflammatory or autoimmune problems or as a result of drugs.

They note that the diagnosis of acute pericarditis may be made with at least **2 of 4 criteria** (comments on each entity below)

- Pericarditic chest pain
- Pericardial rub
- ECG changes – new widespread ST elevation or PR depression
- Pericardial effusion (new or worsening)

Additional supporting findings:

- o Elevated inflammatory markers – CRP, ESR, WCC
- o Evidence of pericardial inflammation by imaging techniques

History – noted in > 85-90%- pain is sharp, worse with inspiration and worse on lying down – it may radiate to the neck, arms and shoulder.

Exam – 85% have a rub at some stage thus it may help to do a repeated examination – need to distinguish from a pleural rub which occurs with inspiration. The rub may be triphasic in 1/2, biphasic in 1/3 and monophasic in the rest – atrial systolic component, ventricular systole and in early diastole (don't know how you'd differentiate the 1st and 3rd ones – ed).

Tamponade is reported in ~15% with viral or idiopathic but up to 60% with other causes – look for pulsus paradoxus as the best sign (in addition to hypotension, elevated JVP and tachycardia)- low threshold to consider bed side echo.

Other signs or symptoms may relate to the underlying aetiology or systemic Dx

ECG – 4 phases – 1) diffuse ST elevation and PR depression, 2)normalisation of STs and PRs 3) widespread T inversion 4) normalisation of T inversion. Remember your major Ddx is ischaemic heart disease. Check out the [Dr Smith's ECG blog](#) for cases

CXR – for mediastinal or lung field abnormalities which may be responsible for the pericarditis. Cardiomegaly usually indicates > 250ml fluid.

Bloods – WCC, ESR and CRP usually provide little input into the cause or indications for therapy with the exception of a markedly elevated WCC which may indicate purulent pericarditis. Troponins are elevated in 35-50% of patients and suggestive of a myopericarditis but an elevated level does not predict an adverse outcome. Although a prolonged elevation (> 2 weeks) may indicate an underlying myocarditis which has a worse prognosis. Other bloods are dictated by the presentation - viral cultures and antibodies are not helpful clinically

Echo – may help in the diagnosis if a small effusion is found or to help Dx tamponade. The ESC group recommend transthoracic echo in all suspected pericarditis patients – ? point of care adequate Pericardial biopsy – for those with recurrent tamponade despite Tx.

Treatment – specific Tx if a cause is found. In countries and groups with a low risk of TB they suggest that it is not mandatory to search for the aetiology because of the relatively benign course with the common causes and the relatively low diagnostic yield. Specific identifiable causes as well as high risk features have been identified as increased risk of complications while awaiting followup.

High risk features include:

- High fever > 38C
- Subacute course (symptoms over several days)
- Evidence of large pericardial effusion (ie diastolic echo free space > 20mm)
- Cardiac tamponade – not suprising
- Failure to respond within 7 days to NSAIDS

They add myopericarditis, immunosuppression, trauma and oral anticoagulants as minor predictors of poor prognosis- these are other factors to consider when deciding disposition.

For idiopathic pericarditis the aim is to reduce pain and inflammation – yet this does nothing to reduce the incidence of tamponade, constriction or recurrent pericarditis. ESC suggests:

- Aspirin “750-1000mg tds” or
- indocid or ibuprofen (which has the lowest incidence of adverse effects). “600mg tds” - note MIMMs recommends maximum dose of 1200mg/d

Colchicine (0.5mg daily if < 70kg – bd if > 70kg) is recommended to improve response to medical therapy and prevent recurrence. The Colchicine for Acute Pericarditis (COPE) trial was a prospective randomized trial of colchicine for treatment of an initial episode of pericarditis, randomised patients to treatment with aspirin alone or aspirin with colchicine. Patients randomised to colchicine therapy were given 1 to 2 mg the first day and a maintenance dose of 0.5 to 1 mg daily for 3 months in addition to aspirin. Patients given colchicine in addition to aspirin had a more rapid resolution of symptoms, and fewer of them had recurrences (33.3% vs 11.7%, P = .009).

Editor: Peter Wyllie

Others recommend adding colchicine (or a change of NSAID) if the pain persists > 2 weeks.

Steroids may be considered as a second option if there are contraindications and failure of aspirin / NSAIDs as there is a risk of favouring the chronic evolution of the disease and "promoting drug dependence" Low to moderate doses are suggested – prednisone 0.2-0.5mg/kg /d

Hospitalisation - unnecessary in most cases, and yet patients need to be educated on when / where to represent, and reviewed within a week to assess response to treatment. The ESC group recommends hospitalisation if clinical assessment suggests underlying aetiology or at least one predictor of poor prognosis as noted above. (The challenge for us is to get cardiology interested) They also suggest hospitalisation if evidence of myocarditis especially if a differential diagnosis of ACS is considered.

Restriction of activity – ESC recommends athletes return to activity after symptoms have resolved and diagnostic tests normalised – suggested 3 months! For non-athletes just till symptoms have resolved and diagnostic tests normalised.

Refs- Lange RA, Acute Pericarditis *NEJM* Volume 351(21) 18 November 2004: 2195-2202 / Adler Y et al 2015 ESC Guidelines for the diagnosis and management of pericardial diseases *European Heart Journal* doi:10.1093/eurheartj/ehv318

JOKE / QUOTE OF THE WEEK



"Sold to the gentlemen with the public."

Please forward any funny and litigious quotes you may hear on the floor (happy to publish names if you want)

THE WEEK AHEAD

Tuesdays - 12:00 – 13:45 Intern teaching -Thomas & Rachel Moore

Wednesday 0800-0900 Critical Care Journal Club. ICU Conf Room / 12.00-1.15 Resident MO in Thomas & Rachel Moore

Thursday 0730-0800 Trauma Audit. Education Centre / 0800-0830 MET Review Education centre / 1300-1400 Medical Grand Rounds. Auditorium.