The Weekly Probe

10th June 2016 **Volume 13 Issue 18**

SAM NOONANS FUNDRAISER
Tickets for the event are now for sale
$50 each
These can be purchased from Jodi Downes
You can purchase in person or via Sam's Fundraiser bank account
Account Name: Sam Noonan
BSB: 112-879
Account Number: 469116473
If you purchase this way, you must reference your name
Then either private facebook message me, send SMS or E-mail
0414890979
Jodi.downes@bigpond.com

SAM NOONANS FUNDRAISER
Raffle Tickets for the event are now available
These are located in the clerical office, near the fax machine
Tickets are $2 each or 3 for $5
There are 12 tickets to a book
Each Book is $20.00
Once sold, please place the ticket stubs and money in the envelope in the Drug Cupboard.
The books are numbered and to run a fair and legal raffle, all books are accounted for.
I need to mark them off the sheet once returned.
So, please be diligent.
Thank-you for your support
There are approx. 20 - 30 prizes, worth $20 - $100
These include Gift Vouchers for stores, Restaurants, Cafes, Massages
Nutrimetics gift packs, Cancer council sunglasses
A detailed list will be available soon.

Sublingual GTN issues – There is a new formulation of glyceryl trinitrate (GTN) tablets is taking longer than expected to dissolve under some patients' tongues. Moisten the patient's mouth prior to giving the tablet or grab one of the ampoules of water to place a couple of drops onto the tablet.

Anaesthetic Cover for the Cath Lab - The Sutherland Heart Clinic now has an Anaesthetic cover 7 days a week. There is an Anaesthetist on site in the heart clinic from 8am to 2pm every weekday, and outside of these hours they can be contacted on their mobile phone. Please go via switch by requesting the **Anaesthetist on for heart clinic**, or alternatively you can ask the heart clinic NUM to contact them.
Please note this is a consultant anaesthetist and is completely separate to the regular anaesthetic contact phone (*8009).
The expectation is that they will be contacted for any patient requiring urgent transfer to the heart clinic for PCI in order to expedite safe transfer and intervention. This can be discussed with the cardiology team on initial referral and they may liaise with the Anaesthetist if appropriate.

THIS WEEK

	The Normal Neonate
	Ring Removal

Joke / Quote of the Week
The Week Ahead

Another short one & apologies re false start on vertigo ..

The "NORMAL NEONATE"

For those of you that have heard the January 2013 edition of EMRAP then may be repetition for you, but there was an excellent presentation from a dual fellowship (Paeds and EM) speaker Dr Eileen Claudius. If you can get your hands on the MP4 file, it's well worth the listen.

It includes a lot of good info that is not provided to new parents either in their pre-natal education or gets sometimes lost in mother-to mother communications.

It's not as "sexy" as some Emergency medicine topics, parents and babies will present with these issues, usually after hours. The transcript is pretty much verbatim but I've added some extra info from an experienced paediatric / early childhood nurse to get a Sydney perspective.

Before we get into the "normal stuff" couple of things to emphasise:

- remember that neonates are difficult to assess. Seek early, senior advice.
- Remember sepsis – easy to treat , easy to miss- early antibiotics if in doubt.
- There are people around to help you in your assessment- senior ED staff, paediatric inpatient staff, paediatric outpatient clinics (CARS clinic), the patient's paediatrician, inpatient lactation consultants and one service which is under used, the **Early Childhood services** who can observe, support, followup parents and babies – go to Google or white pages and search for early childhood centres. Alternatively try these links for locations and services

  Karitane and **Tresillian** also offer excellent services for settling, sleeping and feeding issues. Links to their sites are included below

- Listen to the parents! Issues such as undocumented fever at home are correct, and you need to try and understand and address their concerns.

What is normal in the first month of life?

Breastfeeding is recommended. The normal neonate breastfeeds 8-12 times daily.
It is easier to quantify how much the baby is getting if they are bottle fed. Bottle fed neonates take about 150ml/kg/day split between 6-8 feeds. During the first week they feed more frequently with smaller volumes- Start at 60 then increase to 80 then 100 then 120ml/kg each day finishing at 150ml/kg/d - feed 8-12 times per day for the first week or 2 in order to help stimulate milk production. They shouldn't go more than 4 hrs between feeds. During the first 1 week to 1 months they need about 7-8 feeds per days of about 60- 120ml. The min number to remember is the 150ml/kg/d..

Cow's milk formulas are often recommended. Parents may often switch to a soy-based formula due to concerns about vomiting / stools. This is rarely necessary. Soy-based formulas are not recommended except for special cases such as a vegan family who wish their child to remain vegan. About 30% of the time soy proteins cross-react with milk proteins. If you are really concerned about milk protein allergy, the child should probably receive elemental formula or easily digested formula such as Pepti-junior. It takes some time for allergies to milk protein to develop and it is probably too early to make the diagnosis in the first two weeks of life.

Parents may be worried the child is not eating enough. It is easy to quantify if the child is bottle fed. It is more difficult if they are breast fed. You can look at the growth. It is normal to lose up to 10% of the birth weight initially and it should be regained in 2 weeks after birth. After that the child should gain 15-30gm/d. Urine should be clear and they should urinate at least 6-8 times per day. "Wet" nappies should feel "like a tennis ball in the hand" ie rounded (not green and furry).

What are contraindications to breastfeeding?
Herpetic lesions on the breast , HIV or untreated TB. Risks of hep C transmission with cracked nipples. If you are prescribing a medication that is not safe while lactating try to find an alternative- if none available then have a break – express and discard the milk in order to maintain a supply.

Cracked Nipples + pain While we're on the topic of breastfeeding, if mum has problems with pain on feeding it is important that she expresses / pumps instead and then feeds this via the bottle for 24-48

hrs- may need milk top-ups. Pump every 3hrs. Consider nipple shields which can allow the nipple to heal yet as direct transfer not as good and supply can reduce, suggest ongoing expressing / pumping. Ten days of fluclox (or cephalexin)- child may have looser stools- severe cases may need bactroban as well.

Vomiting. Parents will often present with concerns about vomiting.
All children have posits- this is not reflux. A lot of work-up is often unnecessary; multiple studies say that children < 1 month vomit: about 50% of children < 1 month have daily emesis. Some interventions parents can do to minimise this include feeding less, keeping the child upright for 20 min max after a feed (Max 5-10 min post feeds at night), or burp the child well. Or they can do nothing and as long as the child is growing well they don't mind cleaning up, everything will be fine..
About 12% of kids carry a diagnosis of reflux. Typically these babies are usually unsettled 24/7 not few hours every day. Unfortunately reflux increases through the first month of life and peaks somewhere between 1-4 months. The majority will improve by 6 months but some may continue to have it through the first year. If a child is growing well and not having respiratory complications you don't have to do much. Treatments range from H2 blockers to pro-motility agents to surgery depending on the severity of the reflex. Refer or start trial of H2 blocker if the child seems uncomfortable with the reflux.

When should you worry about a child with vomiting?

- Weight loss or failure to gain the approximate 15-30gm/d.
- Projectile vomiting in a child who is vomiting all feeds and seems hungry is concerning for pyloric stenosis.
- Obviously an ill appearing child.
- Neonates with bilous (green) vomit needs a work-up for malrotation or atresias.

Poo. Usually loose, yellow and seedy. Not unusual to be green (spinach coloured) if having frequent small breast feeds They often stool several times a day. There is a lot of variability of frequency of stool in breastfed children; 7---10 stools a day and 1 stool every 7---10 days are both normal. Most babies turn colours and cry while stooling, so parents worry it is uncomfortable and due to constipation.
Constipation in this age group is rare. It can happen with hypothyroidism; however this is usually diagnosed with the neonatal screen. Another concerning cause is Hirschsprung disease. About 90% will have delayed passage of meconium. Ask the parents when the child passed meconium. For the first time; if it was within the first 24 hrs Hirschsprung is unlikely. Hirschsprung is an emergency When the child is toxic, vomiting or has a distended abdomen. If you really can't get the parents out of the ED unless the kid poos, a little glycerine suppository is probably safe.

Sleeping and crying: get the parents to check out www.purplecrying.info Two other great sites include Karitane and Tresillian

- A normal neonate sleeps 80% of the time. When they are not sleeping, they are crying. Normal crying increases at about two weeks and peaks at the second month. All children will have an unsettled period (crying , drawing up legs, sucking madly even though just fed) lasting 3-4 hours straight every day + one day per week "feral" all day. This is not a problem if the child is consolable and there is no obvious cause of the crying. By about 3-5 months, the child will cry less. They should be awake 1- 11/2 hours maximum- put them down and avoid ongoing stimulation if they try to stay awake – "wrap them up and put them down"
- **Colic** is defined as crying more than three hours a day, more than three days a week for more than three weeks. The crying will continue to increase or plateau. This can be devastating to families but is not pathologic. It does not predict behavioural or psychiatric problems later in life (in the child that is). You can tell parents to try to minimize stimulation. There are multiple theories to explain colic; one theory is that children are responding to the hypersensitivity that comes with daily improvements in their senses and awareness of their surroundings. It's like being at a rave 24/7 and they need a break. They may appreciate a monotone such as a washing machine or vacuum.

- **Inconsolable crying that continuues in the ED can be pathologic.** You should consider diagnoses such as corneal abrasions, hair tourniquets, infections, GI illnesses, intracranial disasters or cardiac events.

Hormones - Male and female infants are surging with maternal hormones when they are born and this can cause some symptoms that can be distressing for parents if they are unaware.

Editor: Peter Wyllie

- About 3% of girls will have macroscopic vaginal bleeding which peaks on day 5. It will usually resolve by a week. Significant or prolonged bleeding merits a work-up for a coagulopathy. If you check urine with a bag specimen, be aware that 25% of girls will have microscopic bleeding.
- Both male and female children can develop breast buds that usually peak in first week of life; about 25% of females and 5% of males will still have breast buds present after a month. They can be asymmetric by up to a cm. There may be some milky discharge from the breast in both boys and girls. If a patient presents with breast swelling, you need to rule out an abscess. An abscess will not be subtle; it does not feel like the small, well-–circumscribed, non-tender breast bud. An abscess will need to be drained and the baby should be admitted.

Rashes

- **Erythema toxicum neonatorum** A common rash in the neonate - Completely benign, self-limited condition (with a scary name) that happens in ~ 50% of infants. There is no treatment. It starts in the first few days of life. Collection of small yellow papules and pustules on an erythematous base presenting diffusely on the skin. Check out www.dermnnet.org.nz for some more info or pictures.
- They can have cradle cap (seborrheic dermatitis), milia (tiny cysts with sebaceous debris usually located on the nose) . Acne tends to develop within 2-3 weeks and resolves by 2-3 months. There is also infantile acne that can start at 2-3 months. It generally resolves without scarring and does not require treatment.
- They can have weird colour changes due to their vascular instability. They can have acrocyanosis (blue hands and feet) early on. With **harlequin skin**, half the body turns pale and the other half remains normal with clear demarcation between. This can last seconds to minutes and then completely resolves.
- Cutis mamorata is a reticulate mottled appearance due to uneven capillary blood flow. This can be normal or can be stimulated by hypothermia or sepsis.
- Bruising can also can occur with birth trauma- consider NAI .
- Neonates can have subcutaneous fat necrosis with hard sharply demarcated, sometimes erythematous lesions, often located on the buttocks. They resolve over weeks with warm packs.

Skin findings you don't want to miss include vesicles which are concerning for HSV and bullae that might be impetigo. If the child looks like a blueberry muffin, worry about rubella or listeria. Jaundice. Pallor in children with anaemia. Gray colouring in children with acidosis. Mottling may be indicative of hypothermia or sepsis. A growth, mass or deficiency of the midline is more concerning as it may be associated with neurologic deficits.

- **The neonatal skull may look unusual due to birth trauma.** There may be overlapping sutures which are ok. The anterior and posterior fontanelles are open in the neonate. The anterior fontanelle should be less than 3.5 cm; significantly larger fontanelles are concerning for hypothyroidism or another pathologic cause. They may have caput succedaneum, subgaleal haemorrhages or cephalo-haematoma; it is important to consider if there is enough blood to cause anaemia or jaundice.
- There are also weird things that can happen in the mouth. They can have ranula; benign mucoceles arising from the floor of the mouth that look like a mass from under the tongue. These will typically require referral for excision. They can have Epstein's pearls (small white masses at the midline of the junction between the hard and soft palate) or epithelial pearls (small, shiny white masses on the gums). These are both common and benign. They can get sucking blisters on their lips. They may have neonatal teeth; these require referral for removal as they may become loose and are a choking hazard.
- **Nasal stuffiness** is often concerning for parents. This doesn't require treatment but reassurance for the parents. If the parents want to use something then FESS is OK yet no bulb suckers as this can lead to friable mucosa / nasal trauma- just let it drain out. It could be a sign of drug withdrawal if that seems an issue for the

family. It is rare to have a nasal obstruction such as choanal atresia. If this is a concern, you can pass a feeding tube through each nostril to be sure.

The Umbilicus

- You can sometimes see a significant diastasis between the rectus muscles.
- Umbilical hernias are very common; they almost never get incarcerated and usually close unassisted by 1y. If they are treated surgically, it is usually done just before starting school for cosmetic reasons.
  - The cord usually separates by 10-–14 days and frequently leaves an oozy, small, red granuloma. These are benign. If this is bothersome to the parents, you can treat it with silver nitrate (warn the parents that silver nitrate will stain clothes, skin, etc.)- some use Dermaid cream . A small amount of redness around the stump is acceptable but if you see more extensive erythema or oedema, you need to consider omphalitis. This is an emergency requiring antibiotics and admission.
- Very rarely, parents will complain of urine or stool from the umbilicus. It is possible to have a patent urachus or a fistula from the ileum to the urachus. These are not emergencies unless they are infected, but it is nice to be able to identify it for referral to a paediatric surgical service.

Reflexes and myoclonic jerks may cause parents to bring the child in with concern about seizure. Extensive jitteriness could be a sign of an electrolyte abnormality; you may send a magnesium and calcium if the child really looks jittery. There several types of convulsions; familial and idiopathic benign neonatal convulsions. These tend to occur in the first 3 days of life or the 5th day ("fifth day fits"). You will obviously work-–up a seizure in a neonate but be aware that not all are pathologic and may resolve after a few weeks.

Periodic breathing is common and they may have pauses in breathing of up to 20 seconds without any bradycardia, altered mental status or changes of tone/ colour. This is normal.

- They can get a small hematoma in the sternocleidomastoid muscle from birth trauma. As this calcifies, it can form a firm palpable lesion and cause torticollis with the head turned to the affected side. It will resolve over time and no treatment is necessary aside from passive stretching exercises.

- **Brick red diaper dumping syndrome.** High concentrations of urates crystals in the urine can react with the nappy causing a salmon, reddish hue (can also be seen with the cotton nappies yet these aren't used frequently nowdays). This can be confused with haematuria and is very concerning to the family. It is benign- push fluids.

- **The penis.** There can be median raphe cysts; white papules along the ventral penis, scrotum and perineum. Asymptomatic and resolve over time. Often parents are concerned that the foreskin does not retract. This is not a problem unless they are unable to urinate or having recurrent episodes of balanitis. If they want to clean this then "swish" the non retracted foreskin during the bath and dab it dry. The foreskin is retractable by ~ 4 years.

- Inguinal hernia – if < 3 months should be seen by a paediatric surgeon as soon as practicable (speak to them) with early repair.
- hydrocoeles – if doubt consult a surgeon. Consider repair if still present at 2 years, but 90% resolve spontaneously
- Undescended testis –remember testes are mobile / retractile - refer to surgeon

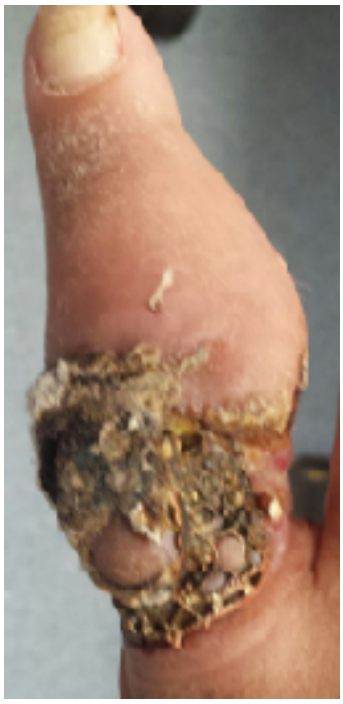
Remember if in ANY doubt observe and consult early.

Refs – EMRAP / Paediatrics Manual : The Children's Hospital at Westmead Handbook 2009

Editor: Peter Wyllie

NEXT WEEK'S CASE- ring removal

A 30yo lady presents with inability to remove her signet ring for 2 months. What techniques do you have to remove a ring?



JOKE / QUOTE OF THE WEEK

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.

Editor: Peter Wyllie