Ear, Nose and Throat in Emergency Medicine

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Objectives

- Cover some common ENT problems
- Highlight management issues
- Case discussion
Common ENT problems

- Epistaxis
- Tonsillitis and differentials
- FB in:
  - Ear
  - Nose
  - Throat
- Miscellaneous
  - Ear Wax
  - Otitis Externa
Epistaxis

- Anterior Bleeding
  - Kiesselbach Plexus
    - Antero-Inferior Nasal Septum known also Little`s Area
    - Branches of Ophthalmic and sphenopalatine arteries

- Posterior Bleeding
  - Woodruff Plexus
    - Located at Postero-Middle Turbinate
    - Branches of Sphenopalatine and Ethmoidal Arteries
    - Anastamoses with pharyngeal branches of the Inferior Maxillary Artery
Epistaxis

● Anterior Bleeding
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Symptoms

Bleeding from the nostril

Bleeding down the throat
Predisposing Conditions

- **Children**
  - URTI
  - Nasal Trauma
  - Haemophilia
  - Hereditary telangetasia

- **Adults**
  - Hypertension
  - Medication effect (antiplatelets, anticoagulants)
  - Tumours
  - Air conditioning/Atmospheric conditions
Estimating blood loss

- Ask the patient!
- Soaked linen (towels, bedding, clothing)
- On the floor (may be vomitus)
  - Consider the area covered by a pint of milk if dropped
  - Blood in water goes a lot further!
  - Pure blood clots easily in air
- Physiological disturbance
Emergency Treatment

- **Resuscitation - ABC**

- **Control Bleeding**
  - Packing
  - Precipitating factors (e.g. Coagulation or hypertension) correction
  - Surgical / Radiological control
Controlling bleeding

- Simple manoeuvres
  - Ice on neck or forehead
  - Pinch Littles’ area
  - Pegs

- Packing
  - Rhino Packs or similar
  - Gauze (vaseline or expanders)
  - Foley catheters
1) For anterior epistaxis hemostasis, tape two tongue depressors together (green arrow) to create a nose clip.
Packing
Technique...
Correct Nasal Exposure!
Anterior Nasal Packing
Cautery

- Use nasal speculum

- Topical adrenaline may be required to control bleeding

- Apply silver nitrate stick

- Nasal emollients or topical antibiotic cream (Naseptin, Bactroban or Vaseline).
Nasal Speculum
Tonsillitis – relevant history

- pain on swallowing
- fever (>38°C [>100.5°F])
- tonsillar exudate
- tonsillar erythema
- tonsillar enlargement
- presence of cough or runny nose (-ve)
- enlarged anterior cervical lymph nodes
Tonsillitis

- 5% to 10% of adults - caused by group A beta-haemolytic streptococci (GABHS)
- If suspected treat with Antibiotics (PenV 10 days – see local guidelines)
- Centor score is a well calibrated CPR score for suggesting a high probability of a patient >14 years old with acute tonsillitis having a GABHS infection.
Tonsillitis

- The Centor criteria are:
  - History of fever over 38°C (100.5°F)
  - Tonsillar exudate
  - Absence of cough
  - Tender anterior cervical lymphadenopathy.
Tonsillitis

- Centor score $\geq 3 = $ positive predictive value is 40% to 60% of a GABHS infection.

- Score of $\leq 1$ negative predictive value of 80%

... do you want to see that again?
Tonsillitis

- The Centor criteria are:
  - History of fever over 38°C (100.5°F)
  - Tonsillar exudate
  - Absence of cough
  - Tender anterior cervical lymphadenopathy
Tonsillitis - Complications

- Rheumatic fever
  - preventable with antibiotics. However, its low incidence (<1:100,000) renders their routine use in low-risk populations (i.e., in developed countries) unjustified

- Glomerulonephritis
  - no evidence that antibiotic treatment can prevent it

The efficacy of antibiotics is lessened in terms of symptom reduction after 3 days, and, beyond 9 days of symptom onset, for rheumatic fever prevention
Tonsillitis - Treatment

- Analgesia

- Antibiotics – local guidelines (Pen V 500mg tds PO 10/7)

- Steroids (10mg Dexamethasone IM)

- IV fluids or supportive measures
Tonsillitis - Antibiotics

- Antibiotics are also indicated in patients who are critically unwell or from vulnerable populations in which susceptibility to acute rheumatic fever is high (e.g., in South Africa, Australian indigenous communities, Maori communities of New Zealand, the Philippines, and in many developing countries).
Tonsillitis – differential quinsy

- More unwell patient
- Causes more severe symptoms
  - Tonsillar exudate
  - Trismus
  - A muffled voice
  - A displaced uvula
  - An enlarged, displaced tonsil, with swelling of the peri-tonsillar region.
- Discoloured superior aspect of tonsil with absence of vessels
Tonsillitis – differential quinsy
Tonsillitis – differential retropharyngeal abscess

- More unwell patient
- Causes more severe symptoms
  - trismus
  - a muffled voice
  - soft tissue swelling in the pharynx and neck
  - Tonsils not obviously of concern
- Requires imaging to look at retropharyngeal region of soft tissues
Tonsillitis – differential
Infectious mononucleosis

- Persistent symptoms
- Increased lymph nodes (posterior cervical)
- \( \uparrow \) WBC count with neutrophilia = bacterial infection,
- \( \uparrow \) WBC count with lymphocytosis and atypical lymocytes = infectious mononucleosis
- Heterophile antibodies (Monospot test)*

*Most tests are too slow to be of any use
What is this?
Epiglottitis

- Classic presentation
  - acute distress
  - tripod position
  - toxic appearance
  - difficulty in controlling secretions, drooling
  - pain
  - fever
  - difficulty breathing
  - not talking, stridor

- presence of risk factors:
  middle age (ave. age 44.6 yrs), immunocompromise, non-vaccination with Hib vaccine
Epiglottitis

- ABC
- Keep patient calm
- secure airway + supplemental oxygen
- intravenous antibiotics
- corticosteroids
- nebulised epinephrine
- prolonged intubation
Epiglottitis

- **ABC**
- Keep calm
- secure airway + supplemental oxygen
- intravenous antibiotics
- corticosteroids
- nebulised epinephrine
- prolonged intubation
Foreign Bodies

- Any Cavity
- Any thing
- Any length of time
Presentation

- ‘I’ve stuck a bead up my nose / in my ear’
- Hearing loss / breathing difficulties / airway compromise
- Foul discharge
Using glue and a stick to extract an ear FB

http://academiclifeinem.com/trick-of-the-trade-ear-foreign-body/
Using a curette to extract an ear FB

Ear Speculum*

Curette

*Require head light
Other methods

- Suction catheters
- Blowing up opposite nostril (by parent)
- Theatre / GA (especially with impending airway compromise)
Foreign body in nose and throat
Other methods

- Suction catheters
- Blowing up opposite nostril (by parent)
- Theatre / GA (especially with impending airway compromise)
Insects

- Kill with mineral oil or local anaesthetics

Abrasions to ear canal

- Antibiotic and steroid ear drops for 7/7
Wax

- Soften with olive oil or warm water 1-2/52
- Remove as per FB with Loupes

Otitis Externa

- *Pseudomonas* species, followed by *Staphylococcus* and *Streptococcus* species
- Pain, discharge, hearing loss
- Erythema, edema, and narrowing of the external auditory canal
- Treat with Abx / Steroid combination drop
Cerumen impaction
Wax

- Soften with olive oil or warm water 1-2/52
- Remove as per FB with Loupes

Otitis Externa

- *Pseudomonas* species, followed by *Staphylococcus* and *Streptococcus* species
- Pain, discharge, hearing loss
- erythema, edema, and narrowing of the external auditory canal
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Otitis Externa
Summary

- Epistaxis
  - Anterior and Posterior bleeding
  - Haemorrhage control as part of ABC
  - Treat predisposing factors
- Tonsillitis and differentials
  - Potential airway compromise
- Simple ENT problems may require theatre especially in children
Five Minute Break
Cases
Cases

- Remember:
  - History
  - Assessment
  - Resuscitation
  - Control haemorrhage
  - Correct predisposing factors
  - Think Disposition
Case 1

- 4 y.o. male
- Intermittent nose bleeds for last 4 weeks
- Had a cold

What is the likely diagnosis?
Case 1

- 4 y.o. male
- Intermittent nose bleeds for last 4 weeks
- Had a cold

What is the diagnosis?
- Bleeding from Littles area

What will you do?
Case 1

- 4 y.o. male
- Intermittent nose bleeds for last 4 weeks
- Had a cold

What is the diagnosis?
- Bleeding from Littles area

What will you do?
- Advice
Case 2

- 44 y.o. male
- Intermittent nose bleeds for last 4 weeks
- Had a cold

What is the diagnosis?
Case 2

- 44 y.o. male
- Intermittent nose bleeds for last 4 weeks
- Had a cold

What is the diagnosis?

- Needs more history and examination
Case 2

- Thinks he lost quite a lot of blood (soaked a hanky)
- Temp 37°C  HR 70  BP 206/97

What to do?
Case 2

- Thinks he lost quite a lot of blood (soaked a hanky)
- Temp 37°C  HR 70  BP 206/97

What to do?

- Ensure bleeding has stopped
- Control BP – Analgesia, BZs, Vasoactive drugs (avoid acute severe BP drop)
- Consider other complications of raised BP
Case 3

- 17 y.o. Male
- BIBA post MVA
- Unrestrained in front seat of car
- Hit concrete lamp post at 110 kmh
- Face imprint in windscreen
- Driver Killed
Case 3

- GCS 12
- Being continuously suctioned by crew
- Maintaining airway but intermittently seems occluded by blood
- HR 120 bpm   BP  90/60 mmHg   CRT 3 secs

What will you do?
Case 3

- AcBCD
Case 3

- AcBCD
- Airway and Circulation of concern
Case 3

- AcBCD
- Airway and Circulation of concern
- Airway takes priority but trauma team may allow parallel intervention
Case 3

- Airway
  - Control Haemorrhage
  - Consider facial trauma – risk of ethmoid plate injury
  - Tampons high risk
  - Foley Cather bilaterally to 20-30ml to tamponade and obstruct nasopharyngeal cavity
Case 3

Case 4

- 3y.o. presents with FB in left ear

What do you do?
Case 4

- Establish appropriate history
- Assess chances of success
- Make appropriate preparation for simple removal
- Attempt removal!
Case 4

- Establish appropriate history
- Assess chances of success
- Make appropriate preparation
- Attempt removal!

YOU FAIL MISERABLY
Case 4

Further options?

- Sedation in ED – Ketamine
- Theatre - ENT
Case 5

5 y.o. girl presents to ED

- Playing in lounge when she began to choke
- Drooling since
- Quiet
- Mum thinks she indicated that she put something in her mouth
Case 5

- Hands off approach
- Assess for sepsis
Case 5

- Hands off approach
- Assess for sepsis
  - Not hot
  - No signs of physiological disturbance
  - Has had immunisations
Case 5

- Hands off approach
- Assess for sepsis – unlikely epiglottitis
- XR lateral soft tissue (portable) and AP chest
Case 5

- Requires skilled paediatric Airway Skills

WHY?
Case 5

- Requires skilled paediatric Airway Skills

**WHY?**

- High risk of airway obstruction
- Requires gas induction in theatre
Questions
Summary

- Always manage with resuscitation ABC / AcBC
- Careful history
- Preparation
- Parallel thinking to manage complex cases
Thankyou
References

- Life in the Fast Lane
  - http://lifeinthefastlane.com/epistaxis/
- MedScape
- Academic Life in Emergency Medicine
- NSW Agency for Clinical Innovation
- OtoRhinoLaryngology Portal
  - http://www.drrahmatorlummc.com/
- ENTSHO.com http://entsho.com
EPISTAXIS

Bleeding from anterior and/or posterior nostrils
ANATOMY

- Kiesselbach Plexus
  - Located at the Antero-Inferior Nasal Septum known also Little`s Area
  - Have branches from the Ophthalmic artery and sphenopalatine artery

- Woodruff Plexus
  - Located at Postero-Middle Turbinate have branches from the Sphenopalatine artery and Ethmoidal Artery
- Ophthalmic artery
- Posterior ethmoid artery
- Sphenopalatine artery
- Greater palatine artery
- Anterior ethmoid artery
- Kiesselbach’s plexus (Little’s area)
- Superior labial artery
RISK FACTORS

- Low Humidity
- Trauma
CHILDREN RISKS

- URTI
- NOSE PICKING
- HAEMOPHILIA
- HEREDITARY TELANGICTASIA
ADULT RISKS

- HYPERTENSION
- MEDICATION EFFECT (ANTIPLATLETS, ANTICOAGULANTS)
- TUMOURS (NASOPHARYNGEAL CARCINOMA COMMON IN ASIAN BACKBROWN PATIENTS)
ASSESSMENT OF EPISTAXIS

- ABC

- HISTORY SHOULD COVER THE FOLLOWING
  - Degree of bleeding in last 24 hours
  - If patient had similar problem before
  - Search for causative factors like (Trauma, Tumour and Infection)
  - Nose picking habit
  - Hay fever history
  - Recent Air travel
  - Drug history
EXAMINATION

- Tachycardia, Hypotension
- Hypertension is a common cause for Posterior Epistaxis
- Airway may compromise with Post Bleed or with clots
- Diathesis
NASAL EXAMINATION

- Unilateral or Bilateral Epistaxis
- Anterior Or Posterior Bleeding
- Look for Haematoma at nasal Septum in Trauma patient
INVESTIGATIONS

Threshold will be Low for Investigating the
Follow two groups of patients

- Recurrent Epistaxis
- Elderly
INVESTIGATION

- FBE LOOKING FOR CHRONIC BLOOD LOSS AND PLT
- GROUP AND HOLD
- INR, APTT
- UEC LOOKING FOR UREAMIA
MANAGEMENT

- ABC
- REASSURANCE AND EXPLANATION
- VITAL SIGNS MONITORING
- PUT PATIENT UPRIGHT TO AVOID ASPIRATION TO DECREASE NASAL BLOOD FLOW BY 20%
MANAGEMENT

- ICE PACK
- PRESSURE JUST BELOW NASAL BONE FOR 15 MINUTES
- IV ACCESS
- CALL FOR HELP
- IF BP HIGH lower it, aim of diastolic below 90 mmHg
- FLUID REUCITATION IF SHOCK
LOCAL MANAGEMENT

- APPLY LOCAL
  
  A. ANASTHETICS (LIDNOCAINE, PHENYLEDRINE) SPRAY preferable with adrenaline
  
  B. LIQUID ANASTHETICS SOAKED IN A COTTON

- Avoid using Cocaine it may increase addiction and increase BP

- Cocaine also Increase risk of MI in elderly patient, If you should use it it has to be less than 60 mg of 10% solution
LOCAL MANAGEMENT

- Suction any clots you see
- Cautarise bleeding blood vessels (Silver Nitrate, Electrical)
- Intravenous Narcotics in case sedation will be required for Nasal Packing
- Nasal Packing with Gel Foam rather than Vaseline Gauze in coagulopathic epistaxis
NASAL PACKING

- Anterior Nasal Packing
- 1-Gauze Pack Vaseline impregnated Ribbon Gauze
- 2- Expanding Nasal Sponge known also nasal Tampon

Removal of Both Usually at 48 Hours
NASAL PACKING

- Posterior Packing
  - 1- Epistat Packing
  - 2- Rapid Rhino
  - 3- Foley`s Catheter size 10 or 14 F gauge put 20-30 mls in the balloon

Cover with Antibiotics to prevent infection
OTHER MANAGEMENTS

- Arterial Ligation
- Embolisation

Usually done by ENT or Interventional Radiologist
ADMISSION

- Elderly patient
- Coagulopathic patient
- Patient with Posterior Nasal Packing
PREVENTION

- Avoid the Causative factor after knowing it.
- In children with recurrent epistaxis, apply Antiseptic cream BD for 4 weeks. This will prevent 50% of epistaxis.
- Estrogen Cream apply to nasal Septum for Hereditary Haemorrhagic Telangiectasia.