How I Manage Nosebleeds

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Epistaxis

- It's all Greek to me…
- (epi) - "above", "over"
- (stazo) - "to drip [from the nostrils]"

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Contents

- Classification
- Anatomy
- Causes
- First-aid measures
- Emergency Management
- Definitive Management
- HHT

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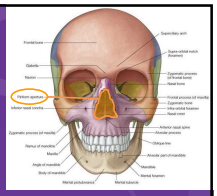
Classification



• CHILDHOOD	<16 Years
• ADULT	>16 Years
• PRIMARY	No proven causal factor
• SECONDARY	Proven causal factor
• ANTERIOR	Bleeding point anterior to piriform aperture
• POSTERIOR	Bleeding point posterior to piriform aperture

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Anterior vs Posterior Epistaxis

	Anterior	Posterior
Incidence	More	Less
Site	Little's area or anterior part of lateral wall	Posterosuperior part of nasal cavity; difficult to localise bleeding point
Age	Children and young adult	>40 years
Cause	Trauma	Spontaneous - Often due to hypertension or arteriosclerosis
Bleeding	Mild, can typically be controlled by local pressure / anterior nasal pack	Severe bleeding

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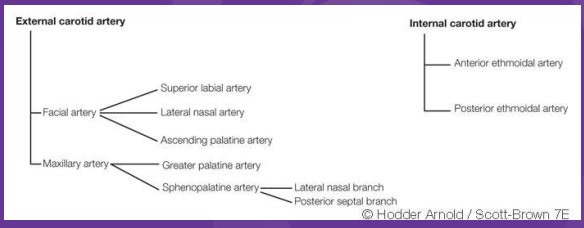
Vascular Anatomy



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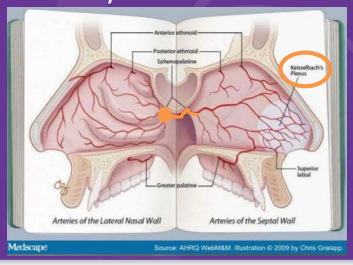
Vascular Anatomy



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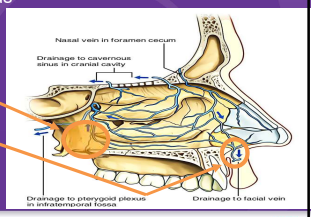
Important Areas

- Little's Area / Keisselbach's Plexus
- Woodruff's Plexus
- Retrocolumellar Vein



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Causes

Common

- Idiopathic
  - Septal arteries
  - Septal veins
- Anti-coagulants
- Trauma
  - Nose picking
  - Surgeries
  - Septal Perforation
- Vestibulitis/infection
- Foreign bodies
- Nasal allergy

Less Common

- Coagulopathy secondary to
  - Blood disorders
  - Liver disease
  - Leukemia
  - Myelosuppression
- Hereditary Haemorrhagic telangiectasia (HHT)
- Tumours (e.g. JNA)
- Septal deformity

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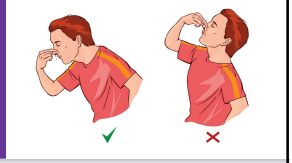
First-Aid Management

- "If it's bleeding, press on it"
- Ice (cream)



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Emergency Management

- A to E, "bloods etc" 😇😳
- Tranexamic Acid
- Correct coagulopathies
  - "Discuss with haematology"
    - "Have you read the guidelines?"
- Hot saline irrigation
- Anterior nasal packing
- Posterior nasal packing

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Anterior Nasal Packing

- Ribbon gauze
- Impregnated with:
  - Petroleum jelly
  - Antibiotic cream, e.g. Naseptin
  - Liquid paraffin
  - BIPP
    - Bismuth Iodoform Paraffin Paste

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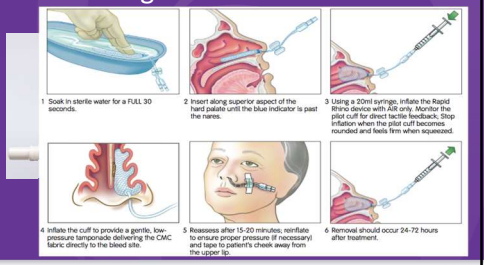
Anterior Nasal Packing

- Rapid Rhino



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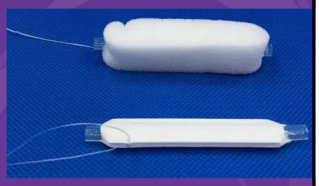
Anterior Nasal Packing

- Expanding sponge, e.g. Merocel
- Bioresorbable dressings
  - E.g. Nasopore



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Anterior Nasal Packing

- Haemostatic matrix
  - Floseal (Baxter)
    - Human thrombin with bovine gelatin
  - Surgiflo (Ethicon)
    - Human thrombin with porcine gelatin
  - Purabond (3-D Matrix)
    - Synthetic peptides

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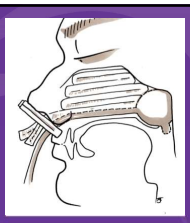
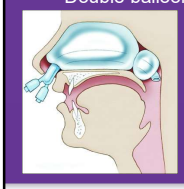
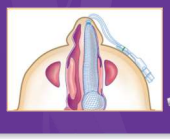
Posterior Nasal Packing

- Foley catheter + anterior pack
- Double balloon pack







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How NOT to pack a nose…

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Definitive Management

- Correct coagulation

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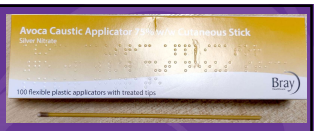
Definitive Management

- Awake cautery
  - Silver nitrate chemical cautery
  - Electrocautery



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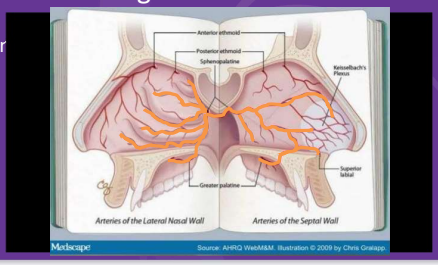
Definitive Management

- Spher



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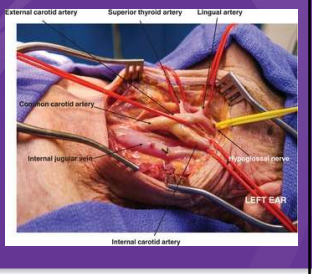
Definitive Management

- Anterior ethmoid artery ligation
- Embolisation
- External carotid artery ligation



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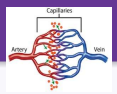
Hereditary Haemorrhagic Telangiectasia (HHT)

- AKA "Osler-Weber-Rendu Disease"
- Autosomal dominant
- Prevalence: Affects approximately 1 in 5,000 people globally.
- Abnormal blood vessel formation
- Telangiectasia and arteriovenous malformations (AVMs)
- Blood vessels lack normal capillaries between artery and vein
  - Arterial blood under high pressure flows directly into a low pressure vein without first having to squeeze through the many very small capillaries
  - Communications can rupture and bleed



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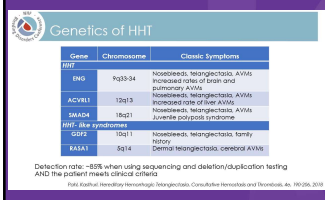
Hereditary Haemorrhagic Telangiectasia



Gene	Chromosome	Classic Symptoms
HHT		
ENG	9q33-34	Nosebleeds, telangiectasia, AVMs increased rates of brain and pulmonary AVMs
ACVRL1	12q13	Nosebleeds, telangiectasia, AVMs increased rate of liver AVMs
SMAD4	18q21	Nosebleeds, telangiectasia, AVMs Juvenile polyposis syndrome
HHT- like syndromes		
GDF2	10q11	Nosebleeds, telangiectasia, family history
RASA1	5q14	Dermal telangiectasia, cerebral AVMs

Detection rate: ~85% when using sequencing and deletion/duplication testing AND the patient meets clinical criteria

Faughnan ME, Palda VA, Garcia-Tsao G, et al. International guidelines for the diagnosis and management of hereditary haemorrhagic telangiectasia. J Med Genet. 2011;48(2):73-87. doi:10.1136/jmg.2009.069971

Curaçao Diagnostic Criteria for HHT

1. Recurrent and spontaneous epistaxis
2. Multiple telangiectasia on the skin of the hands, lips, face, or inside of the nose or mouth.
3. AVMs or telangiectasia in one or more of the internal organs, including the lungs, brain, liver, intestines, stomach, and spinal cord.
4. A family history of HHT (first degree relative)

- Three or more criteria met: **Definite HHT**
- Two criteria met: **Possible HHT**
- < Two criteria met: Unlikely to be HHT

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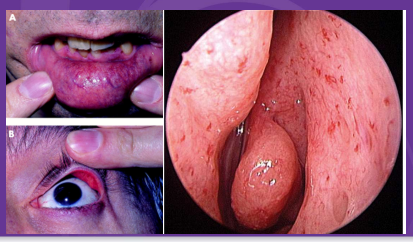
Hereditary Haemorrhagic Telangiectasia

- Telangectasia:
  - Nose
  - Mouth
  - Skin
  - GI Tract
- AVMs:
  - Lungs
  - Liver
  - Brain
  - Spine



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Clinical Features in ENT

- Epistaxis: Occurs in up to 90% of HHT patients, often severe and recurrent.
- Telangiectasias: Frequently found on the nasal mucosa.
- Airway Involvement: Rare, but arteriovenous malformations (AVMs) may affect the lungs.

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Hereditary Haemorrhagic Telangiectasia

	Epistaxis			Blood Transfusion	
	Frequency	Intensity	Duration	Number of Previous Blood Transfusions	Recent Need for Blood Transfusions
Grade 1	Less than one episode/wk	Slight stains on the handkerchief	Less than 10 min	No need	No need
Grade 2	At least one episode/wk	Soaked handkerchief	From 10 to 30 min	Less than 10 U	From 1 to 5 U during the last 3 mo
Grade 3	More than one episode/day	Bowl or similar utensil necessary	Over 30 min	More than 10 U	Over 5 U during the last 3 mo

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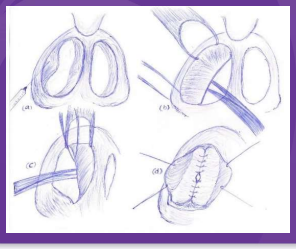
Hereditary Haemorrhagic Telangiectasia

- Management:
  - AVOID PACKING!
  - TXA (topical / systemic)
  - Transfuse
  - Iron replacement
  - Oestrogen creams
  - Coblation / LASER
  - Nasal septal splints
  - Septodermoplasty
  - Modified Young's Procedure



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Haematological Considerations

- Anticoagulation: Patients with HHT are at higher risk of bleeding, requiring special consideration when using anticoagulants.
- Iron Deficiency Anemia: Frequent due to chronic blood loss, often requiring iron supplementation or intravenous iron therapy.
- Collaboration: Essential in managing complex cases.

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Emerging Therapies

- Anti-VEGF Therapy: The use of bevacizumab (an anti-VEGF agent) has shown promise in severe cases of epistaxis in HHT.
- Gene Therapy: Currently under investigation, but still in the experimental phase.

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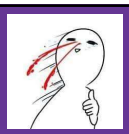

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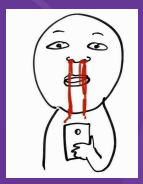

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