The OMFS Survival Guide

Signs on Examination for Cervico- Facial Infection

Aims & Objectives

- Provide a structure to your approach to assessment of patients with facial swellings
- Reinforce your understanding of red flags with facial swellings
- To gain an understanding of the pathology behind certain signs on examination
- Revise clinical anatomy relevant to spread of infection

When First Referred a Patient (SBAR Handover)

- Ask for patient details (Name, Age, Hosp Number)
- General history and complaint
- Past medical history
- Obtain their observations (all of them)
- Ask about blood results
- Imaging- if it's been done look at it before you see the patient

General History

- Timeline of events
- SOCRATES for pain and swelling history
- Red flag questions: voice changes, difficulty swallowing, numbness in distribution of V2 or V3, unintentional weight loss
- Non- specific signs of sepsis- fevers, vomiting, lethargy
- Eating and drinking- can they tolerate solids, liquids, both?
- When did they last eat/ drink (important if need to go to theatre)
- Past medical history (PMH)- includes drug history (with med doses), allergies, family history
- Social history- Smoking, alcohol, rec drug use, occupation, who lives at home (important for discharge)

General Examination Process

- End of the bed inspection (do they look very unwell, clearly struggling to breathe?)

- Ask them their name, how they are (initial airway check- can they speak?)
- Check neck movements (look up, chin on chest, look to either side)
- Any overlying changes to the skin? (redness, crusting, pus discharge)
- Palpate the swelling (site, size, consistency, localised/ diffuse etc)
- Can you feel the inferior border of the mandible? (start from where you can feel it and work backwards)
- Check for any lymph nodes
- If upper swelling, same process as above but also do an eye exam- check if globe is pushed forward, can they move their eyes, pupil reactivity
- Check sensation intact in distribution of V2 and V3 (red flag for malignancy)
- Intra- oral: trismus- inter- incisal distance in mm/cm
- Palpate the floor of the mouth on both sides, is either firm or raised?
- Bimanual palpation of the floor of mouth to see if the gland is enlarged.
- Check tongue movements
- Check the oropharynx (if you can), any obvious asymmetry?
- Palpate the buccal sulci adjacent to swelling, check teeth
- Any other abnormalities- ulcerations etc
- If parotid swelling, push on parotid and see if anything is expressed from the duct

Airway Red Flags

- Inability to speak, drooling, inability to move neck (or neck flexed into a fixed position- may mean spread into the parapharyngeal spaces), oxygen saturations dropping
- Additional airway noises:
    - Stertor: Is a sign of airway obstruction in the upper pharynx (soft palate, tonsils), sounds like snoring
    - Stridor is a high- pitched noise on inspiration: this is a late sign of airway obstruction as it means the airway around the larynx and vocal cords has already narrowed: must give an adrenaline nebuliser and IV dexamethasone, seek help early.
- Trismus (in the context of infection) means infection/ pus is irritating the muscles of mastication. This means there is infection spreading into the submasseteric space, or the pterygomandibular/pterygomaxillary space (the latter two may not have any external swelling seen, will have progressive trismus and likely difficulties swallowing).

Orbital Cellulitis

- Any airway issues as above in addition- get help
- Eye examination- any proptosis, inability to move eye in any direction, pupils fixed/ non- reactive

- Contact ophthalmology on- call for full eye assessment
- Pt will require a fine- slice CT of orbits
- Pt's with infection spreading intra- orbitally are often immune- compromised- screen for diabetes and blood- borne viruses if necessary
- Depending on source of infection, pt may just go to ophthalmology, if dental origin pt will be admitted under OMFS with opthal input

Investigations

- Bloods: FBC, U&E, CRP, HbA1c (can help diagnose diabetes),
- If pyrexic/ septic, get a venous blood gas to look at the lactate
- Any other bloods relevant to PMH, e.g. INR if on warfarin, LFTs if liver disease, coagulation screen if liver disease or reports heavy alcohol intake
- OPG
- May require CT if concerns of spread into deep neck spaces (discuss with senior)

Differential Diagnoses of Cervico- Facial Swellings

Sudden Onset Swellings

- Can be salivary (see below)
- Angioedema- allergic reaction, sometimes in patients taking certain medications such as ACE inhibitors, angiotensin- receptor blockers and NSAIDs or C1 esterase deficiency. Can be differentiated from Ludwig's due to sudden onset, responds to steroids and antihistamines.
- Anaphylaxis- will have history of exposure to allergen. Medical emergency- crash call, give i.m. adrenaline (dosed according to age), lie back, give oxygen and IV hydrocortisone.

Salivary Swellings

- Salivary gland swellings often well- localised to the gland, will be firm (as surrounded by a capsule). Submandibular gland swellings- will be able to palpate the inferior border of the mandible
- Sometimes will present with history of mealtime syndrome-swelling increases in size before/ during meals
- In older patients, parotitis can be due to dehydration- treat this vigorously
- In younger people, swollen parotid could be mumps- check vaccination status

Malignancies

- Usually slower growing (however can also become infected so may present with short history)
- May have numbness in ID nerve, infra- orbital nerve (depending on location)

- May have associated firm, irregular lymph nodes
- Pt may have lost weight (unintentionally),

Epidermoid (Skin) Cysts

- Usually superficial, localised and well- demarcated
- Pt may give recurring history of infection in that area
- Treatment (if drainable) is LA and small incision to drain, PO abx
- Usually reviewed in a few weeks, can arrange for formal excision on clinic

Cellulitis

- Inflammation/ infection of the skin, can present alongside the swellings above
- Usually diffuse, nil/ very little swelling, poorly- demarcated erythema
- Treatment is oral abx, unless signs of being unwell can admit for IVs (sometimes under medical team)

Sinusitis

- Rarely presents with facial swelling, may look like an upper dental abscess
- Usually soft, diffuse swelling
- Pain/ pressure symptoms usually bilateral
- Will have increased pain/ pressure over the midface when leaning over (as opposed to dental where they won't have this)

Further reading:

Spread of infection through the head and neck: https://pocketdentistry.com/of-maxillofacial-infections/

Deep neck space infections, identification and management: https://entsho.com/deep-neck-space-infections

E- Face:
https://www.e-lfh.org.uk/programmes/oral-and-maxillofacial-surgery/

General assessment of OMFS patients: https://www.amazon.co.uk/Call-Oral-Malliofacial-Surgery-2nd/dp/1909818585