PRACTICAL DERMATOLOGY - DR ELLIE CHOI

Maculopapular Eruptions (00:59)

Salient point to address in history

- Onset
- Progression
    - Worsening, stabilisation, improvement
    - Defined by extent of lesions, colour of lesions (most rashes then to resolve with hyperpigmentation and browning)
- Location where the rash first started (central vs acral) and its spread (centripetal: extremities to trunk vs centrifugal: trunk to extremities)
    - Most acute exanthems and eruptions tend to start centrally then spread distally
    - Exceptions such as erythema multiforme, HFMD, secondary syphilis tend to have a centripetal spread
- Associated symptoms: Itch, burning, pain
- Red flags: mucosal involvement, skin pain/tenderness, systemic organ involvement

Most common etiologies for a maculopapular skin eruption

- Parainfectious
    - May precede, occur during, or after the onset of fever and other infective symptoms
    - In some cases, the infective trigger/etiology may be very mild/fairly asymptomatic
    - Usually self resolving
- Drugs

How to tell if its a drug reaction ? (03:28)

MP rash can look and present identically for parainfectious and drug etiologies.. Certain features such as presence of eosinophilia, central location, dusky appearance, culpable drug and lack of infective symptoms favours a drug cause. However there are many overlaps and dermatologists often find it difficult to differentiate too!

What kind of drugs should we be especially concerned about

- Antibiotics (e.g. Bactrim)
- Allopurinol
- Anti-convulsants
- TCM
- Painkillers (e.g. Opioids/NSAIDs)
- Many many drugs can case cutaneous rashes

Different kinds of drug eruptions

Common - non severe adverse cutaneous reactions

- Maculopapular - longer drug latency compared to urticaria (Onset usually 1-2 weeks after initiation of medication, earlier if the patient has had prior sensitisation), typically a type 4 delayed hypersensitivity.
- Urticaria and/or angioedema - shorter drug latency (Usually minutes to hours), typically an immediate type 1 hypersensitivity
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Uncommon but life-threatening - severe cutaneous adverse reaction (SCAR)

- SJS/TEN
- Drug hypersensitivity syndrome (DHS), old name DRESS
- Acute generalised exanthematous pustulosis

Other types of drug eruptions: drug induced photosensitivity/photoaggravated eczema, lichenoid drug eruption, bullous drug eruption, chemotherapy related skin toxicities.

Drug Charts

- If considering a drug cause, then please include a drug chart
- Usually preferred in an excel format as easier to see the temporal sequence when drug history is complex
- If there are very few medications or if all medications are old (>3-4months), typing the onset of medication on cdoc is usually acceptable
- While the most important information is the duration prior to the onset of rash, the period after onset of the rash (and any worsening/improvement) is also important. If the rash is worsening, the offending drug is likely still ongoing while if the rash is improving, the offending drug/trigger likely has been resolved.
- Generally, electrolyte and drips are inert and unlikely to be the cause - might not need to do day to day charting although can still include if worried
- A faster way of creating a drug chart is to go to the "all medication tab" and sort by name/alphabetical order. As opposed to looking at a day by day medication administration.

Common errors

- Not including drugs prior to rash onset
- Forgetting other possible allergens such as CT/MRI contrast; blood products

What happens if you are unable to pinpoint which drug is responsible, or if there are multiple possible drugs

- Check for temporal relation of drug to rash and compare it with the usual latency period for the rash morphology
- If multiple drugs started at the same time (e.g. in ICU when you have multiple potential drugs), consider drug notoriety e.g. which drugs are well known to cause drug rash e.g. allopurinol
- If the CADR is mild, can consider holding off one or two of the most likely drug culprits and watch for improvement
- However, if CADR is severe, then usually would hold off all potential culprit drugs as the risk of worsening the CADR outweighs the benefits of keeping the medication on

<u>Blistering Skin Conditions (10:25)</u>

Blister: fluid filled skin lesions

Vesicle: small blisters <5mm in diameter

Bulla: larger >5mm in diameter

DDx

- Edema bullae - usually over shins (a/w pedal edema and leg swelling)
- Bullous cellulitis, bullous tinea, bullous scabies - secondary to underlying infection/inflammation
- Bullous pemphigoid (usually multiple blisters, often an acral predominance - palms and soles)
- Consider base of the blister
    - Non erythematous base: more likely edema bullae or non-inflammatory blisters
    - Erythematous base: Bullous pemphigoid
    - Surrounding skin suggestive of an infective: bullous cellulitis, bullous tinea, bullous scabies
- Skin biopsy of a fresh blister is diagnostic, but consider serology alone esp in patients which we are less keen to biopsy if considering bullous pemphigoid, or when diagnosis of bullous pemphigoid is less likely: indirect immunofluorescence, BP 180/230
- Herpes (more likely crops of vesicles)
- Shingles (usually dermatomal)

<u>Eczema (14:46)</u>

Eczema = dermatitis

Many different kinds of eczema/dermatitis: e.g. atopic/irritant contact/allergic contact/discoid/seborrhoeic dermatitis

Treatment principles

- Emollients: if weepy, can consider to use a astringent such as potassium permanganate in addition to the emollient as the emollient might make the weepiness worse
- Antihistamines

- Topical steroids as required
    - Can consider combination creams such as fucicort (betamethasone valerate/fusidic acid) or fobancort (betamethasone dipropionate/fusidic acid) if infected, but development of resistance if possible
- Topical/systemic abx if infected
- Topical antiseptics (octenisept, octenisan)

How to use potassium permanganate?
Comes in either crystals which need to be diluted until a light pink colour or a pre-diluted solution
To soak gauze in the wash and then apply to the wet lesions for 10mins twice daily.
Also helpful for maceration tinea pedis to dry up toe webs

If using multiple creams/emollients/steroids, which do you apply first?
- Order doesn't particularly matter, actually can be combined e.g. they are combined in wet wraps
- If used separately can space out 5-10 minutes apart to give time for absorption of the 1st topical
- Depends on the vehicle (lotion/cream/ointment), to apply the oilier vehicle last

Is there a difference between moisturisers?
- They differ in price, but all are effective, boils down to patient/physician preference
- Cheaper options would be topicals such as aqueous cream and urea cream, however, some patients may find these irritative (due to presence of sodium lauryl sulfate or 10% urea)
- Other options would be moisturisers like QV, Cetaphil, Physiogel

<u>Fungal Rashes (21:57)</u>
- Different groups with different morphology
    - Dermatophyte (tinea) - annular scaly plaque with peripheral active rim and central clearing
    - Yeasts e.g. candida - erythematous papules and pustules with satellite lesions; malassezia - monomorphic erythematous papules and pustules - e.g. pityrosporum folliculitis
    - Moulds e.g. Fusarium
- May be pruritic or non-pruritic

How to differentiate tinea vs eczema?
- Fungal scrape
- Tinea is usually drier compared to discoid eczema which are both annular
- Rashes in the intertriginous areas may also have contributory components of irritant contact dermatitis from the occlusion, friction and maceration.

Treatment
- Common topicals: miconazole cream/powder, clotrimazole lotion/cream, terbinafine cream
- Ketoconazole shampoo used as body wash
- Oral anti-fungals: would advise dermatology consult before starting

Miconazole cream vs powder?
- If too wet, powder might potentially cake
- On the trunk would usually use cream as will stay longer, for feet usually powder
- However, would boil down to physician/patient preference

Any role in switching between the different topicals e.g. miconazole switch to terbinafine
- No real guidelines, in practice, does not seem to be particularly useful
- Need to be aware, that some topicals are not effective against yeast e.g. terbinafine

Ward measures?
- Keep area dry
- Cradle nursing to help aerate the area

When would you consider treatment failure to topicals?

- No real guidelines, but ballpark would be about 2 months
- However, in cases of extensive fungal infections, at the onset one can consider oral anti-fungals together with topicals.

Nail fungal infections (onychomycosis)

- Need to consider other causes of nail dystrophy such as trauma induced instead of labelling all nail thickness and discolouration as fungal
- Can consider clotrimazole solution; also can consider amorolfine (Loceryl) nail lacquer which is formulated for fungal nail infections (application is 1x/week, applied like nail polish)

Any role for nail clippings investigations?

- Can send for fungal smear, fungal culture and dermatophyte PCR
- Can be expensive to send for all ~$200 dollars, dermatophyte PCR is the most sensitive

Combination Creams (31:14)

- Combination creams can be given selectively. Even in dermatology practice, we routinely give combination creams such as daktocort (hydrocortisone + miconazole)
- However, many combination creams (e.g. Neoderm and combiderm - betamethasone dipropionate/clotrimazole/gentamicin) contain strongpotent topical steroids which may lead to conditions such as tinea incognito amongst other topical steroid side effects

Skin scrape (32:22)

- Need to scrape properly to increase the yield
- In dermatology clinic, we have a blunt scalpel, but in the ward, can use the back end of the scalpel
- Can scrape it into a piece of paper/filter paper and fold it upon itself and place it into a white specimen bottle
- Wipe the surface of the skin with alcohol to remove commensals prior to scraping
- Make sure that the topicals (e.g. miconazole) has been removed/avoid applying before scraping
- Scrape the area of the most active areas (margin of the scaly plaque)

Swab PCR (35:51)

- Usually in cases of sending VZV PCR, HSV PCR
- Clean area with alcohol first and then use a small needle e.g. blue needle to lance the vesicle/pustule
- Send the fluid within the vesicle/pustules for investigation

Psoriasis (36:54)

Treatment

- Topicals steroids
- Vit D analogues (daivonex)
- Coal tar preparations e.g. cream/shampoo
    - Shampoo (can apply 2-3x/week as can be very drying)

Dangerous variants

- Generalised pustular psoriasis
- Erythrodermic psoriasis

Steroids (39:41)

- Consider age of patient (young and elderly, would use a milder steroid)
- Consider location of lesion (e.g. face and neck skin is thinner, would use a milder steroid, near the eyes can cause cataracts)
- Consider thickness of lesions (thicker the lesion, the more potent of steroid)

FTU (finger tip units)

- Used to measure how much cream to prescribe to a patient with skin disease e.g. 1 FTU for 2 palm size of skin

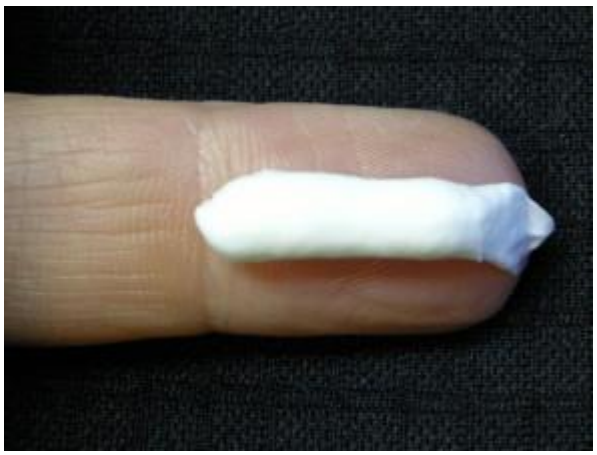
 1 FTU

Photo Credit: DermNetNZ

Choice of topical steroids

- Most potent to less potent
    - Vehicle: Ointment > Cream > Lotion
- Location of lesion
    - E.g. ointment is best for thick rashes or when skin is thick (e.g. acrally), whereas lotions would be better for hair bearing areas like the scalp to enable it to reach the scalp
- Size of lesion
    - E.g. lotion would be useful to cover large areas for ease of application
- Can start with BD dosing (depends on topical, some are only meant for OM use) then taper to OM to EOD etc.

Topical steroid sparers

- Most common - calcineurin inhibitors
    - E.g. Tacrolimus ointment, Pimecrolimus cream
- Might be useful in sensitive areas e.g face
- However, expensive and have other side effects

Oral steroids

- Depends on severity of the condition e.g. 0.5mg/kg (usually to a max of 30mg) in eczema with taper. Lower doses can be used if flare is less serious

<u>Red Flags/Life threatening conditions (42:42)</u>

- SJS/TEN
    - Early signs may be rashes that turn dusky/purplish looking suggestive of early necrosis
    - Skin pain would be representative of skin necrosis
    - Need to look for mucosal involvement
- Drug hypersensitivity syndrome
    - Systemic involvement with a rash
    - Changed from DRESS as eosinophilia might not be present
- Acute generalised exanthematous pustulosis

http://www.regiscar.org/ - website dedicated to SCAR reactions

<u>Skin Cancers (49:25)</u>

- Common: SCC/BCC/melanoma
- Consider if bleeding/ulcerated rashes
- Common non malignant lesions that are referred TRO malignancy is seborrhoeic keratosis

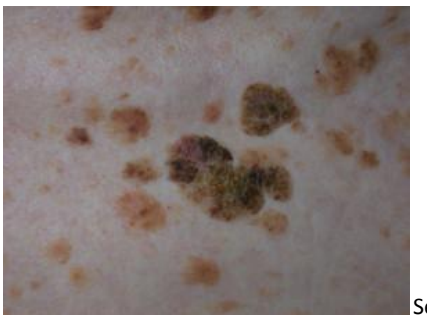
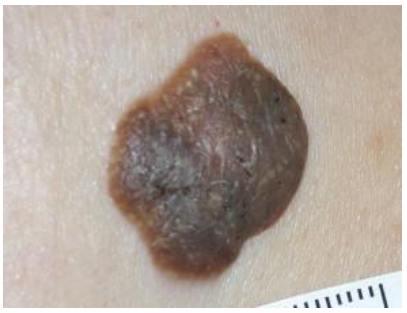

Seborrhoeic keratosis

Pigmented Seb K

Photo Credit: DermNet NZ

Morphology of Seb K vs SCC/BCC/melanoma: usually Seb K is a stuck-on well-demarcated warty plaque

Differentiating severe eczema vs SCC/Bowens

- If older patient, consider SCC/Bowens
- If solitary plaque, should consider SCC/Bowens
- If on palpation, it is more indurated, can consider SCC/Bowens (would reflect deeper invasion)

Does instituting topical steroids prior to referral affect the morphology (e.g. starting over the weekend)

- Can still consider starting, should not change the morphology significantly
- Question would be if your diagnosis is correct in the first place
- If clear cut (e.g. clear cut eczema), can consider starting topical steroids prior to referral to dermatology
- Caution: do not treat psoriasis with systemic steroids as can cause psoriasis flare

<u>Photography</u>

- Lighting is important (wards can be poorly lit)
- Get a combination of far away shots (extent of rashes) and close up shots (morphology)
- Ensure the skin is in focus

<u>Take Home Points (54:55)</u>

- Practice describing rashes when making referrals to dermatology
- Photography of the rash is very important especially if rash may not longer be present during dermatological review (e.g. urticaria, rash that develops over the weekend)
- Can see above for the rest of the points