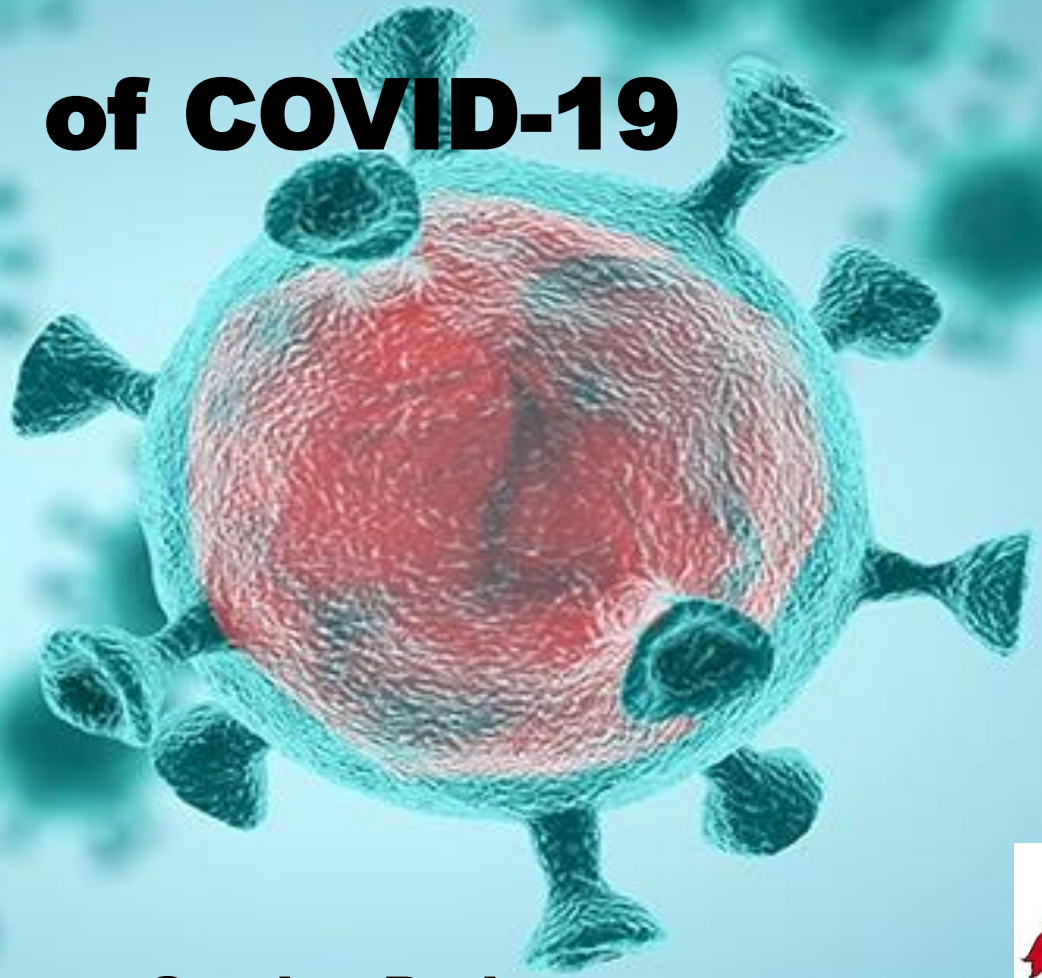
Cutaneous Manifestations of COVID-19



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Objectives

1. Classification
2. Clinical patterns
3. Timing in relation to disease symptoms
4. Severity
5. Prognostic significance

Classification

Inflammatory reactions

- Maculopapular eruptions
- Urticaria
- Vesicular eruptions

Vascular reactions

- Pseudo-chilblain
- Petechiae/Purpura
- Livedo or necrosis

Classification (2)

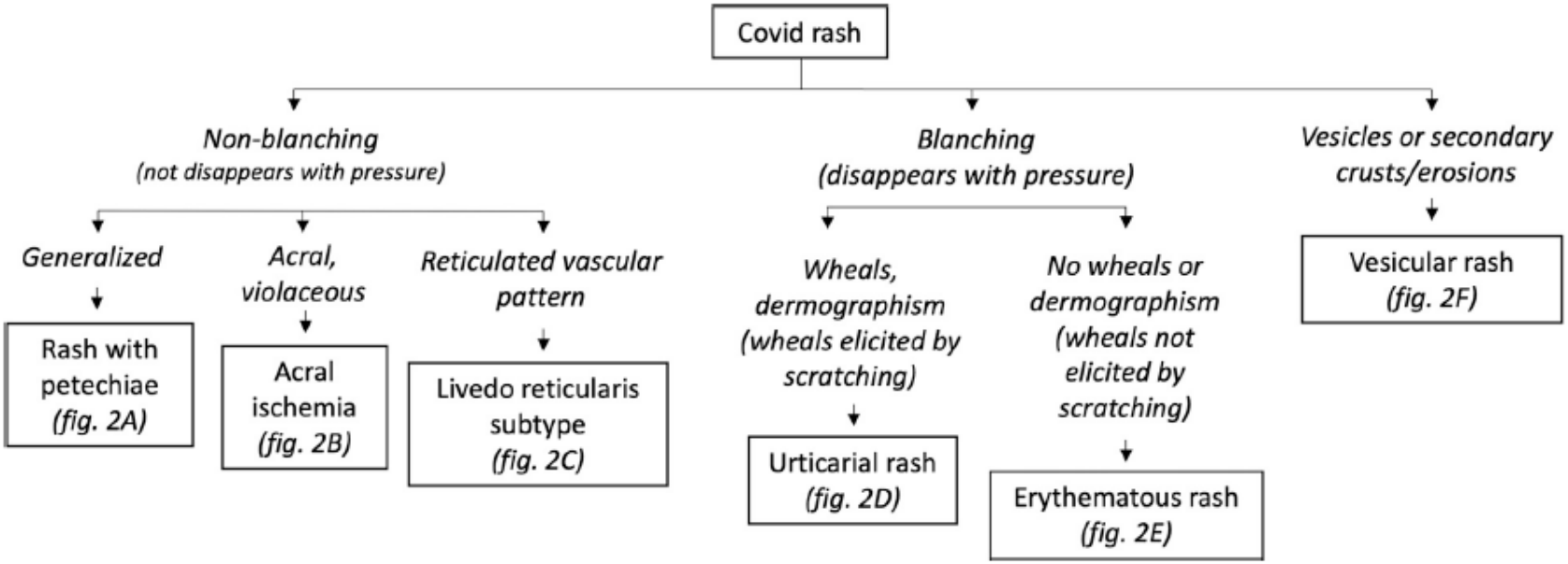


Fig 1. Proposed algorithm. *COVID*, Coronavirus disease 2019.


A


B


C


D
COVID


E


F

Maculopapular eruptions

- Most common presentation – 47% of cases, but non-specific.
- Appear same time as other symptoms.
- Mean duration 8.6 days.
- Associated with **more severe** Covid-19 infection.
- Mortality 2%.
- Pruritus (57%).

Maculopapular eruptions (2)

- Erythematous macules and papules, some perifollicular, with varying degrees of scale.
- Similar to pityriasis rosea.
- Purpura also present; punctiform or on larger areas.
- Trunk or any body site.

Urticaria

- Very commonly reported – 19%, but non-specific.
- Acute lesions presenting early on in viraemic phase, lasting few min – 24 hrs.
- Random and not associated with high fevers.
- Mean duration 6.8 days.
- Associated with **more severe** Covid-19 infection.
- Pruritus (92%)

Urticaria (2)

- Characterized by wheals; superficial swelling, pale or skin-coloured, surrounded by erythema.
- Mostly truncal or dispersed; lasting few min – 24 hrs.
- Few cases palmar.

Vesicular eruptions*

- 15% of cases.
- Early presentation; prior to other symptoms.
- 50% have respiratory symptoms.
- Mean duration 10.4 days.
- Associated with **intermediate severity** of Covid-19 infection.
- Pruritus (68%)
- Herpes Zoster Virus (HZV) common.
- Can **mimic chicken-pox.**
- More in adults (middle-aged) than children.

Vesicular eruptions* (2)

- **Small monomorphic** (at same stages) vs. polymorphic vesicles as in chicken pox.
- Vesicles can become larger or diffuse.
- May have haemorrhagic component.
- Heals **without scarring**.
- Usually on torso, but may affect limbs.

Pseudo-chilblain* (Covid toes)

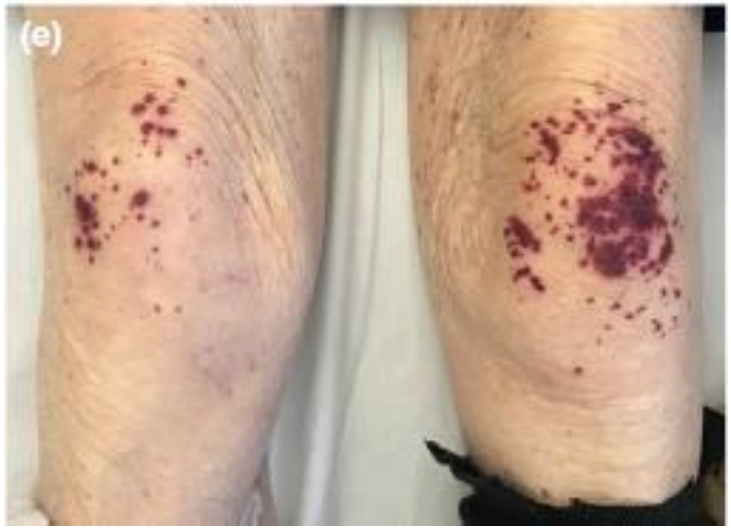
- Commonly reported – 19%.
- Late presentation; 59% after other symptoms.
- Mean duration 12.7 days.
- Associated with **less severe** Covid-19 infection.
- More pruritus than pain.
- Younger, healthier, often asymptomatic patients with positive contacts.
- No history of Chilblain/pernio.
- Indolent course of disease.

Pseudo-chilblain* (2)

- Erythematous-oedematous, violaceous macules or plaques typically on dorsal aspects of feet, but may also affect hands.
- Pustules or vesicles may be present.
- Reported in warmer weather.
- Resemble chilblains and have purpuric areas.
- Usually asymmetrical.

Petechiae/Purpura

- Less common than other lesions.
- Small, subdermal hemorrhages; while purpura is larger variant.
- Many patients thrombocytopenic, thus may represent less common complication in Covid-19 or due to vasculitis.

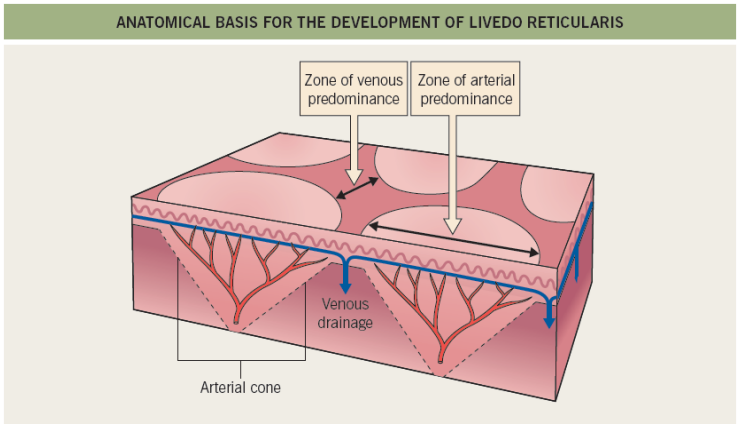


Livedo or necrosis

- Relatively uncommon.
- Present later in evolution of disease.
- Mean duration 9.4 days.
- Associated with more severe Covid-19 infection.
- Mortality 10%.
- Older patients, severely ill (ICU), usually in setting of ARDS and coagulopathy.

Livedo or necrosis (2)

- Different degrees of lesions suggesting occlusive vascular disease.
- Present with livedo reticularis or racemosa; violaceous, dusky lesions with net-like or retiform pattern.
- Some show enanthem or purpuric flexural lesions.
- May have skin necrosis.
- Affect legs, buttocks, trunk or acral areas.



In summary

- Skin is an important and often overlooked target organ for Covid-19.
- Positive cases missed based on ‘classic’ symptoms.
- Rash should trigger consideration of Covid-19.
- Further research required and could be improved if more patients with cutaneous lesions can be tested for Covid-19 and other viruses.
- More information needed on clinicopathological correlation of these patterns.

References

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