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Our Issues, Our Drugs, Our Patients

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Varicella zoster Virus

VIRUSES TAKING ADVANTAGE OF HIV

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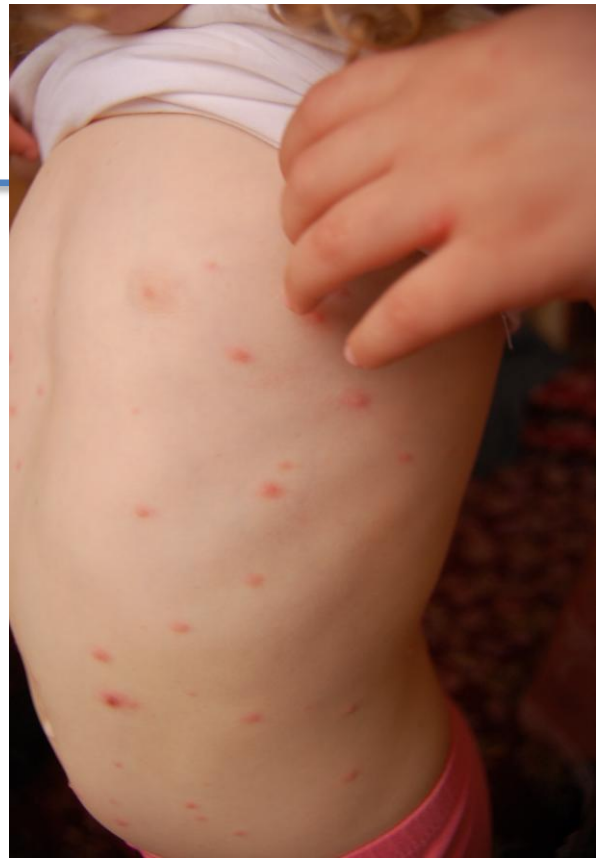
Varicella zoster virus

- Herpesviridae
  - Along with HSV-1, HSV-2, CMV, EBV, HHV-6, HHV-7 and HHV-8
- Causes two distinct syndromes:
  - Varicella (chickenpox) – on initial exposure
  - Herpes zoster (shingles) – on reactivation

Chickenpox

- Commonly occurs in children (90% < 13 years)
- Incubation period 10-21 days
- Prodrome of fever, malaise, pharyngitis, anorexia.
- Crops of lesions: macules → papules → vesicles → pustule → crusting.
  - Patients infectious from 2 days before rash until all vesicles crusted.
- Lesions start on face then spread centrifugally.



Chickenpox

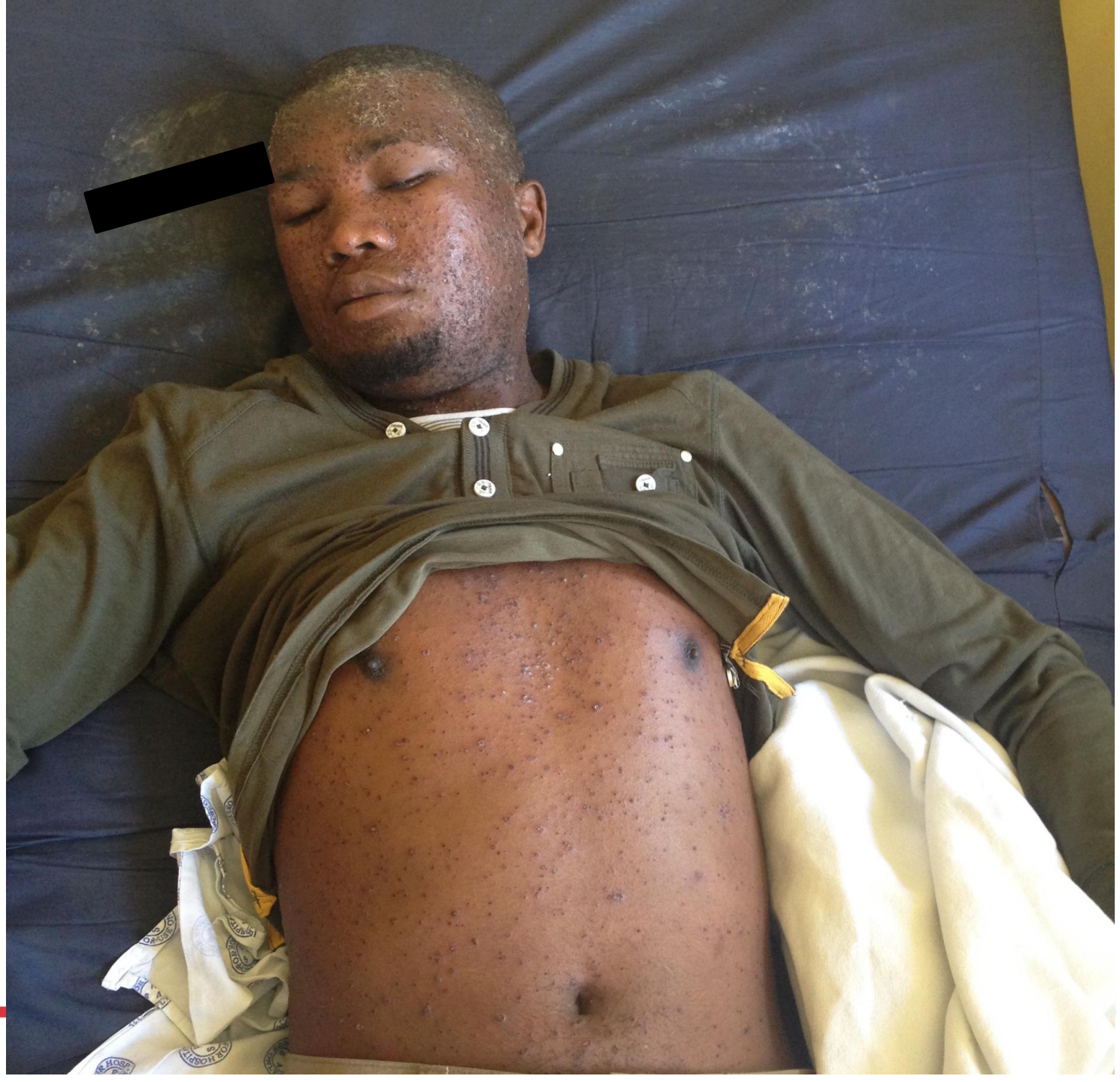
- Spread mostly by intimate contact
  - 2^{ndary} attack rate in susceptible household members is 90%.
  - Spread by aerosolised droplets from nasopharynx of infected person, or by contact with vesicle fluid.

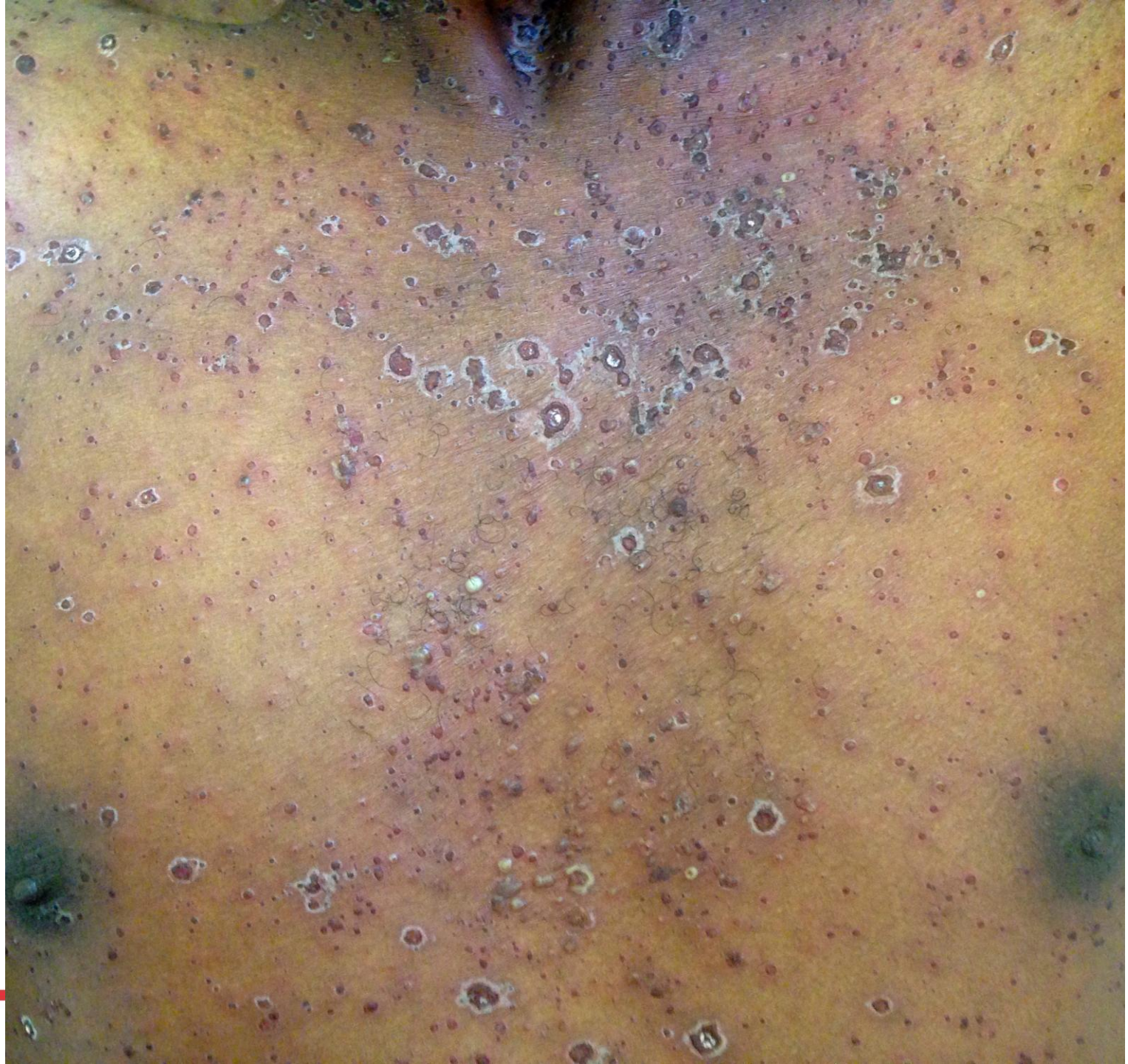
- **<u>Complications:</u>**
  - **Skin and soft tissue infection** – with GAS especially (cellulitis, necrotising fasciitis, toxic shock syndrome, etc.)
  - **Neurological** – encephalitis, acute cerebellar ataxia, varicella vasculopathy
  - **Pneumonia** – from varicella, with possible secondary bacterial infection
  - **Hepatitis**

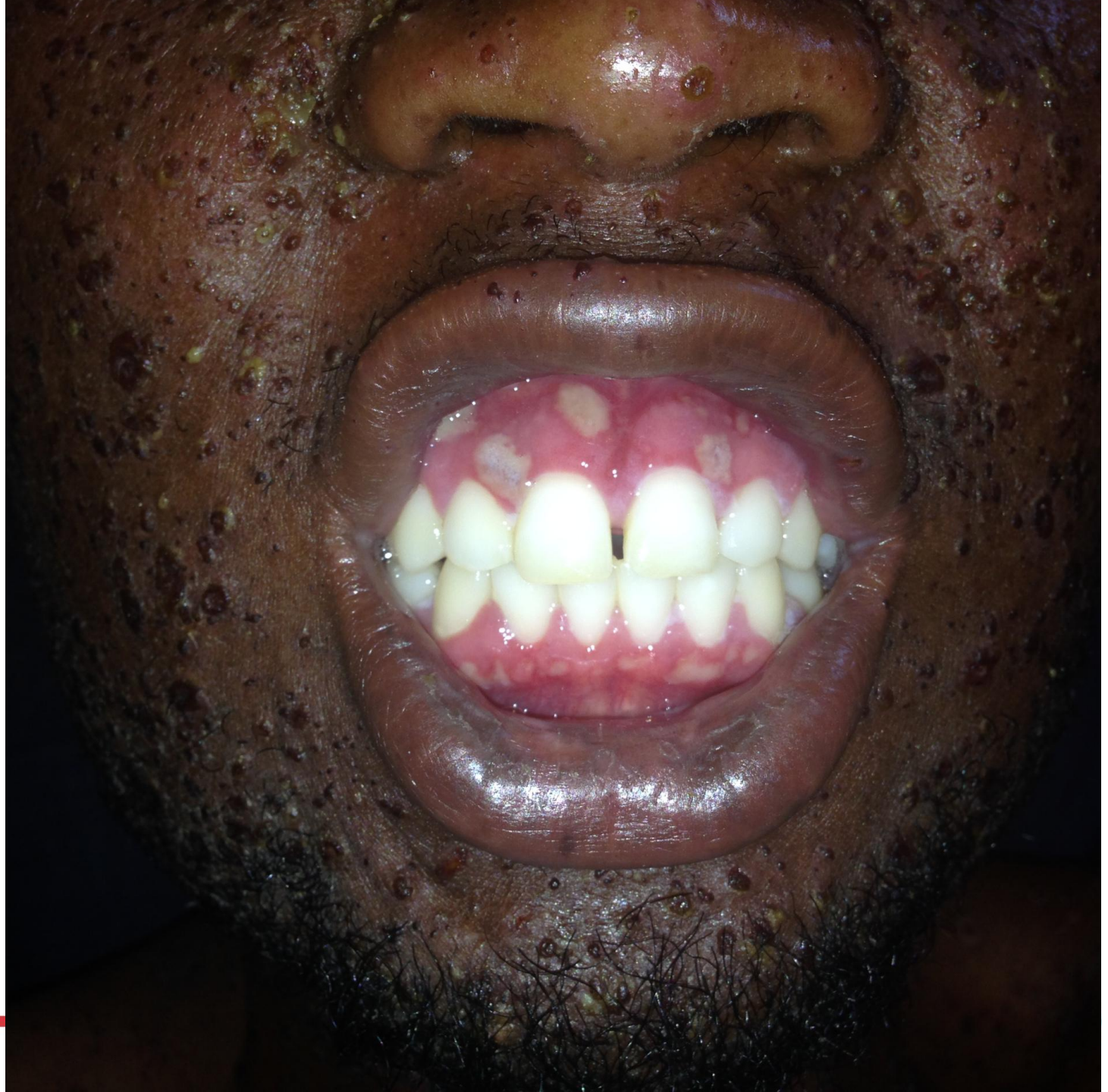
HIV and Chickenpox

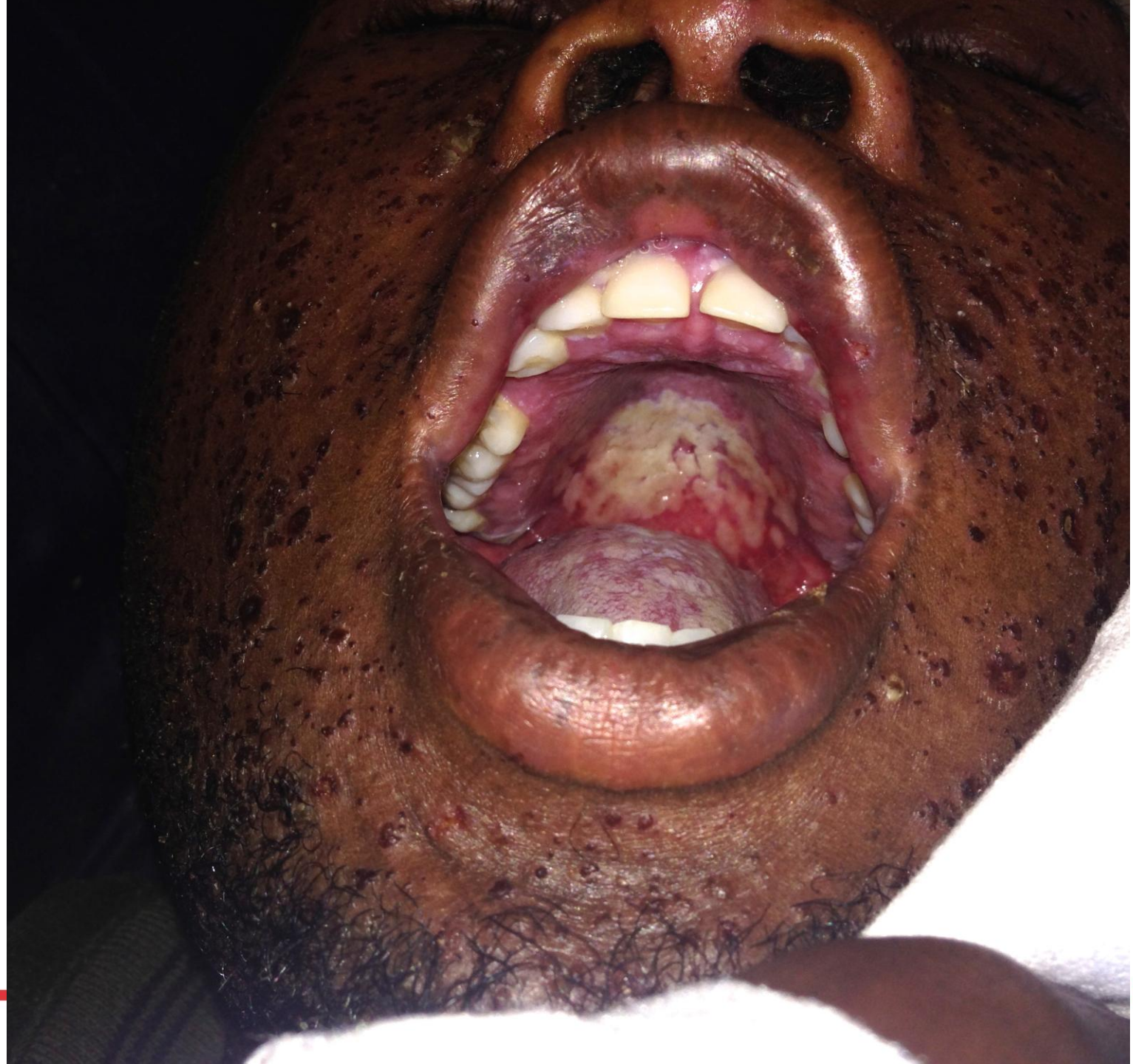
HIV and chickenpox

- More numerous lesions
- Lesions take longer to heal
- More likely to have complications:
  - Varicella pneumonia
  - Hepatitis
    - Can be severe, and can occur before, during or after the rash.



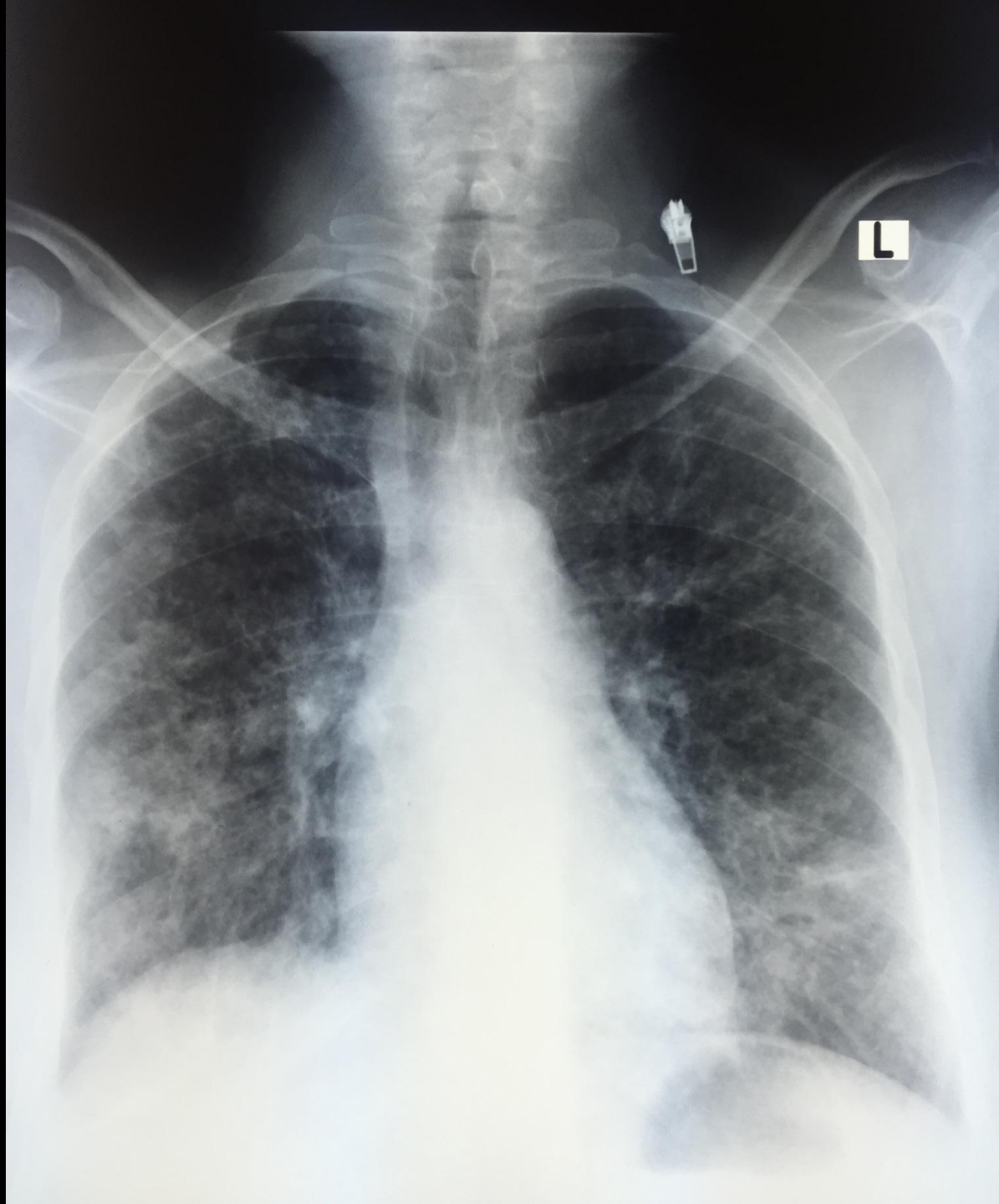






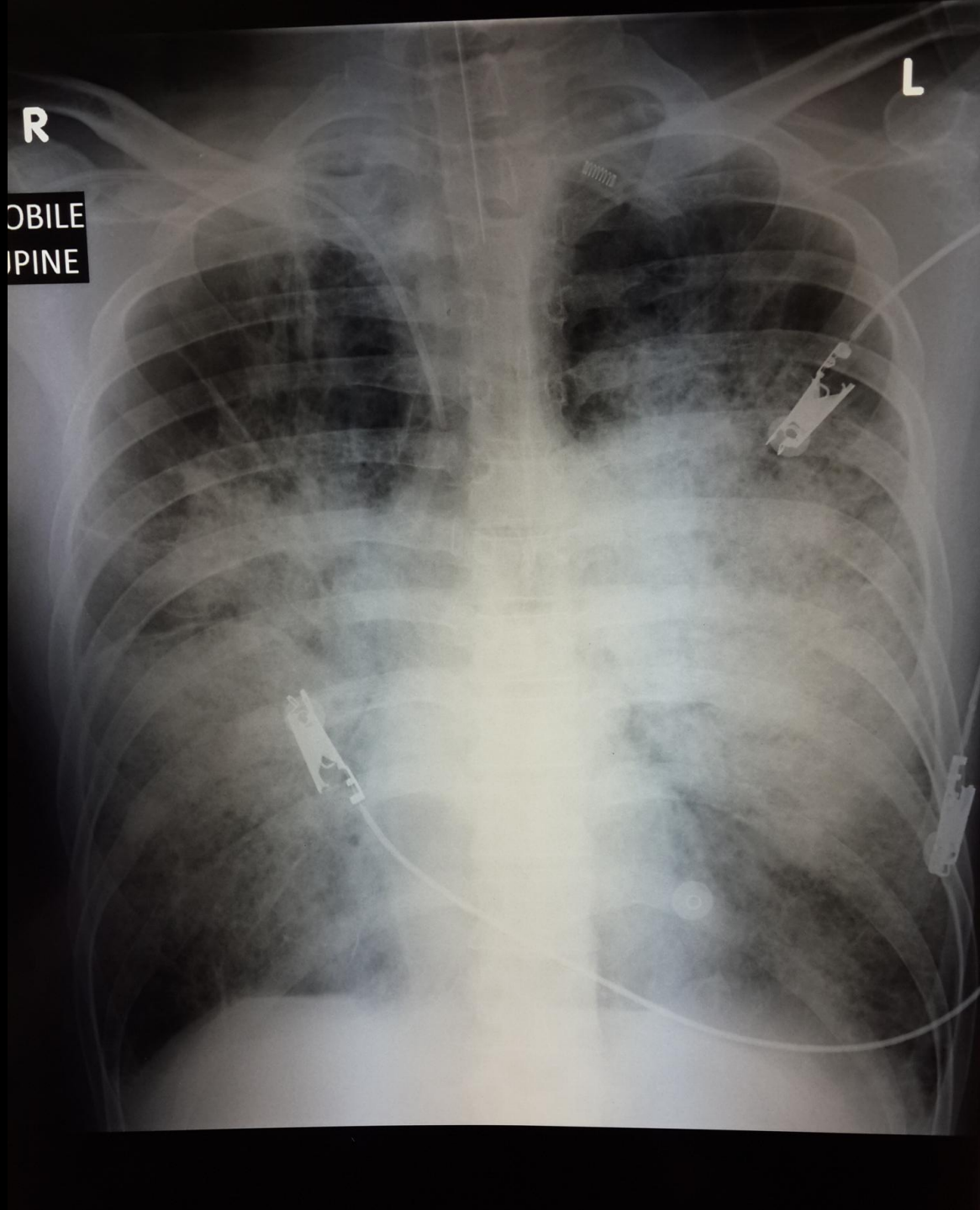
Primary varicella pneumonia

- Bilateral
- Nodular usually



Primary varicella pneumonia

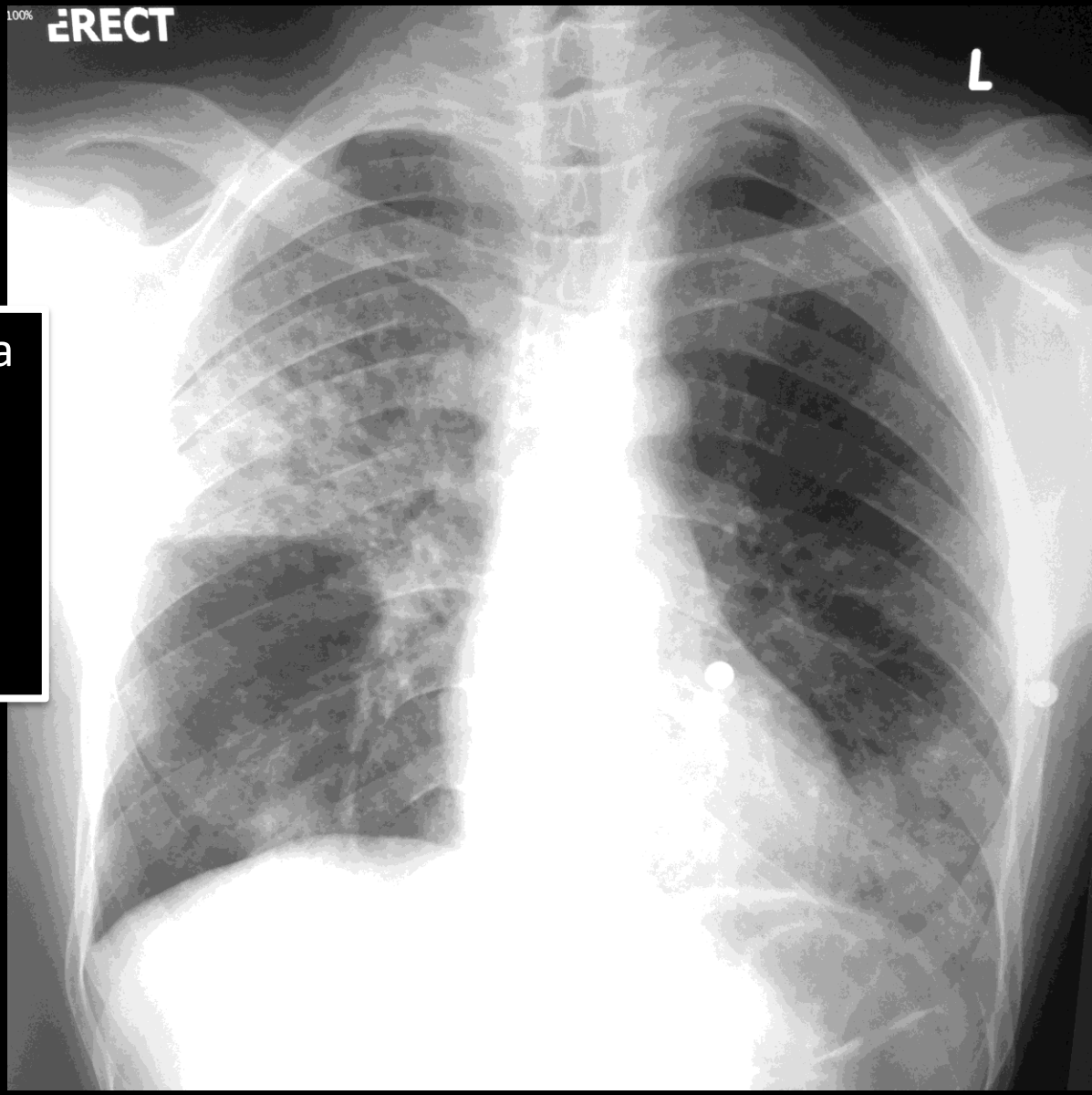
Can progress to ARDS and death



Secondary bacterial pneumonia

Think:

- *Streptococcus pneumoniae*
- *Staphylococcus aureus*

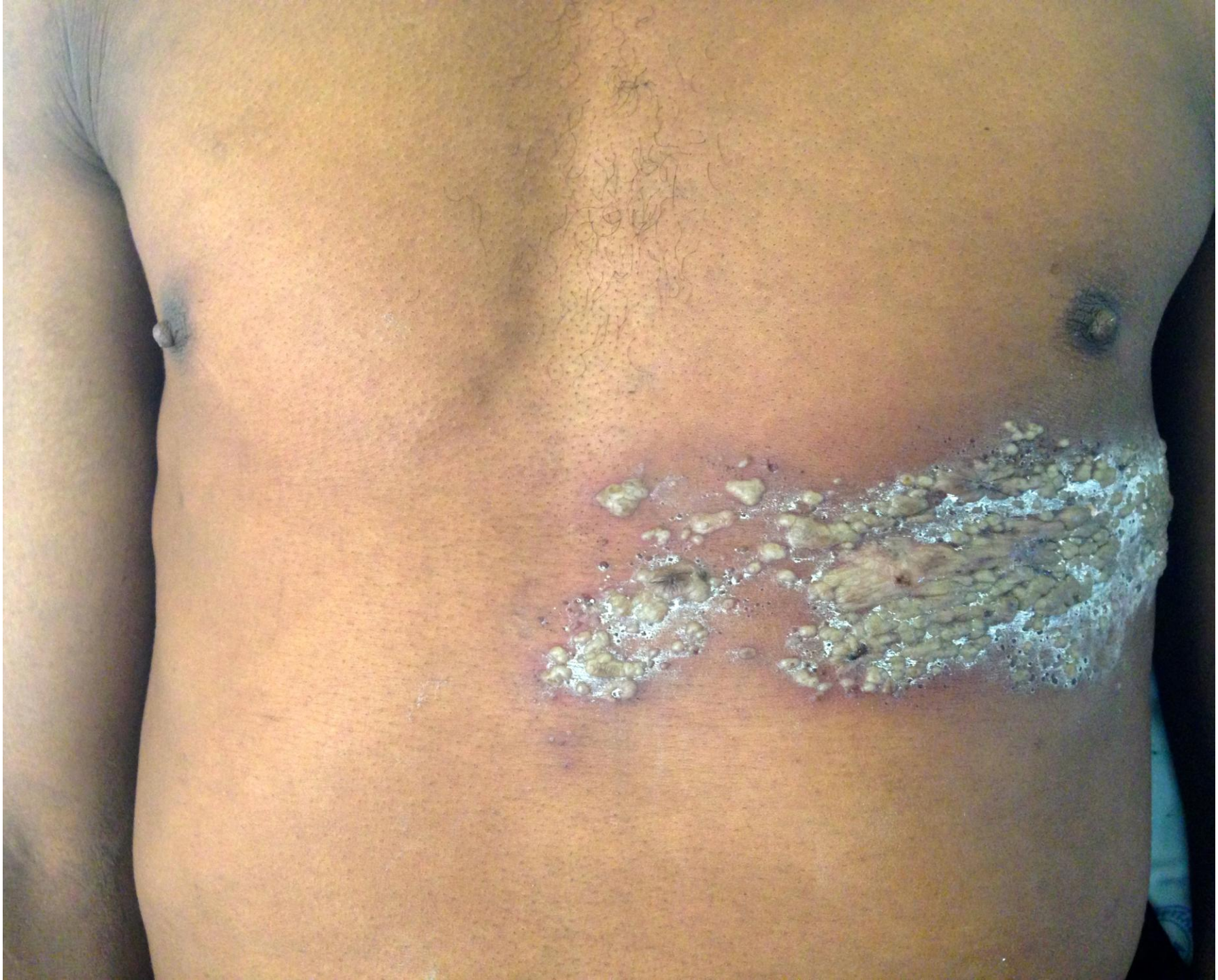


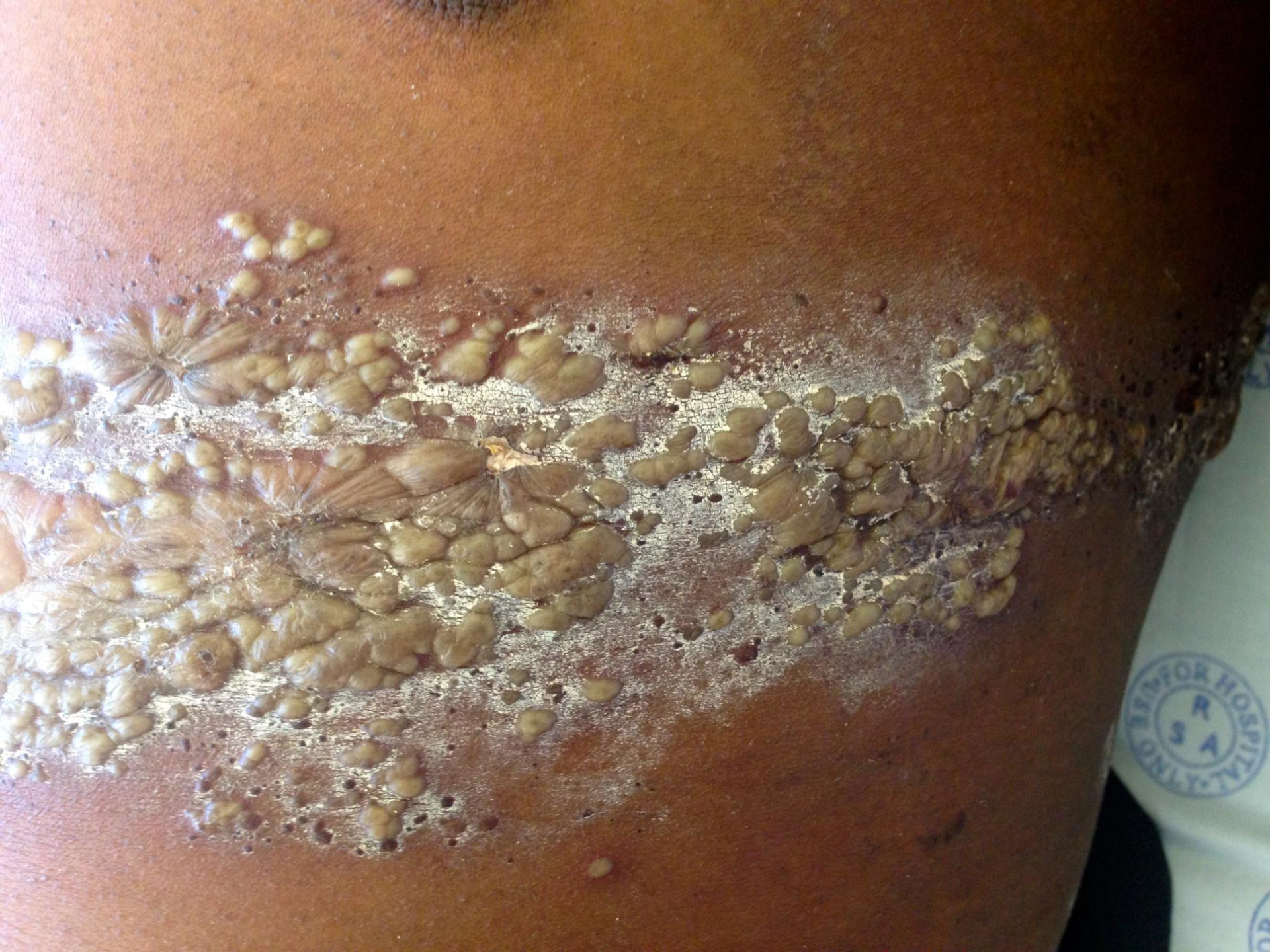
Herpes Zoster (shingles)

- Reactivation of VZV in cranial nerve or dorsal root ganglia, with spread along sensory nerve to dermatome.
- Risk factors:
  - Age (50% if over 85 years and unvaccinated)
  - Immunosuppression (HIV, transplants, haem malignancies)

Herpes zoster: clinical

- Dermatomal rash – doesn't cross midline.
  - Most commonly thoraco-lumbar region
  - Usually just one dermatome
- Same evolution as chickenpox
  - Papules → vesicles → pustules → crusting





Herpes Zoster: Complications

EARLY	LATE
Pneumonia	Varicella vasculopathy
Hepatitis	**Postherpetic neuralgia**
Neurological: Meningitis, encephalitis, transverse myelitis…	
Herpes zoster opthalmicus	

HIV and Shingles

- Longer period of new vesicle formation (> 1 week)
- More likely to involve more than one dermatome.
- More likely to have complications:
  - Pneumonia
  - Hepatitis

Treatment

	Immunocompetent without complications	Immunocompromised or with complications
Varicella (chickenpox)	**Acyclovir** orally 800 mg 5x daily x 5 days -- if within 24 hours	**Acyclovir** intravenously 10mg/kg tds x 7-10 days -- if active disease (e.g. uncrusted lesions)
Herpes Zoster (shingles)	**Acyclovir** orally 800 mg 5x daily x 7 days -- if within 72 hours	**Acyclovir** intravenously 10mg/kg tds x 7-10 days -- if active disease

Steroids?

- 2013 Cochrane meta-analysis concluded that there was “there is moderate quality evidence that corticosteroids given acutely during zoster infection are **ineffective** in preventing postherpetic neuralgia.”
- Not routinely advised.

Steroids for varicella pneumonia

- Controversial.
- Only one study done: uncontrolled, 15 patients, only 1 of whom was HIV positive.
- 6 patients got steroids and appeared to do better: shorter ICU and hospital stay, trend towards improved mortality (not statistically significant).
- RCT needed to address this!

Corticosteroids in Life-threatening Varicella Pneumonia*

CHEST / 114 / 2 / AUGUST, 1998

Mervyn Mer, MBBCh; and Guy A. Richards, MBBCh, FCCP

Symptomatic relief

CONDITION	TREATMENT	NOTES
Chickenpox (varicella)	Calamine lotion	Itch, not pain, is usually the problem.
Herpes zoster (shingles)	Paracetamol, NSAIDs, or opioids	Pain, not itch, is usually the problem.
Postherpetic neuralgia	Tricyclic antidepressants, gabatentin, pregabalin	Paracetamol and NSAIDs are **not** effective. Opioids are 3rd line at best.

Vaccinations

- For varicella – Varivax
  - 2 doses
  - Ideally for everyon[illegible]out evidence of immunity[illegible] or serologically)
- For zost[illegible]Zostavax
  - [illegible] dose to all adults > 50 years,
    [illegible]gardless of whether previous varicella or shingles reported

Contraindicated if CD4 < 200 (or if pregnant)

Postexposure prophylaxis

- Risk of transmission: varicella > herpes zoster
- **Immunocompetent**: varicella vaccine (if within 3-5 days)
- **Immunocompromised**: VariZIG (asap, but probably works within 10 days)
  - Can prolong incubation period – watch for 28 days