HERPES ZOSTER: INTRODUCTION AND COMMON PRESENTATIONS

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Outline

- Herpes zoster pathogenesis, key clinical features, unique presentations, special patient populations
- Zoster in the immunocompromised
- Pediatric zoster
- Zoster diagnostics
- Treatment regimens, including post-herpetic neuralgia
- Prevention strategies, vaccination guidelines
- Evidence? NEJM and zoster vaccine package insert
*Intro*

- SHINGLES from Latin cingulum = "encircling" the body
- ZOSTER from Ancient Greek "belt or girdle"
- "The house guests who never leave"
- "belt of fire", "big rash", "Hell's fire", "small snake"
- 1 million cases each year USA
- 10-30% lifetime risk
- 50% chance having zoster outbreak if age $\geq 85$ before vaccine era

Lingo – varicella/chicken pox vs. herpes zoster/shingles
Case

72 y/o otherwise healthy male with painful bumps along R back, thinks he may have been bitten by a spider or a tick. When you tell him it's shingles, he wonders how he caught it.
Pathophysiology

- **Human α-herpesvirus-3 (DNA)**
- **Latent VZV in cranial nerve and dorsal root ganglia**, acute spread of virus along sensory nerve to the dermatome
- **None or transient viremia**, less viral load than varicella
The cervical, brachial, lumbar, and sacral plexuses (at left), and the major peripheral nerves of each (at right). The branches of the 12 cranial nerves, their functions (motor, sensory, or mixed), and the structures they innervate.
Dermatomes

Schematic demarcation of dermatomes shown as distinct segments. There is actually considerable overlap between any two adjacent dermatomes.
Pathophysiology

Primary risk factor is increasing age, decreased T-cell immunity to VZV.

Why is a particular dermatome involved?

Ganglia most exposed to reactivating stimuli?

Location where lesions most concentrated during primary varicella?
Case

81 y/o female, new patient, came in with hx of rapidly-evolving painful and pruritic eruption on R cheek x few days. She is unsure of her med list.
Prodrome DDx

- MI, headache, stroke, renal colic, PE, appendicitis, cholecystitis, glaucoma, costochondritis

Skin DDx

- Allergic or irritant contactant
- Autoimmune blistering disease
- Arthropod assault
- Other herpetic and infectious eruptions
Clinical presentations

- Classic
- Classic with adjacent dermatomes (1-3), <20 lesions
- Disseminated but not immunosuppressed
- Duplex bilateralis?
- Disseminated
- Zoster sine herpete
- >50% truncal
- 10-15% V1
## Complications

**Table 1. Selected Complications of Herpes Zoster in Nonimmunocompromised Persons.**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Manifestations</th>
<th>Site of VZV Reactivation</th>
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<tbody>
<tr>
<td>Aseptic meningitis</td>
<td>Headache, meningismus</td>
<td>Cranial nerve V</td>
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<tr>
<td>Bacterial superinfection</td>
<td>Streptococcus, staphylococcus cellulitis</td>
<td>Any sensory ganglia</td>
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<tr>
<td>Bell’s palsy</td>
<td>Unilateral facial paralysis</td>
<td>Cranial nerve VII</td>
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<tr>
<td>Eye involvement (herpes zoster ophthalmicus)</td>
<td>Keratitis, episcleritis, iritis, conjunctivitis, uveitis, acute retinal necrosis, optic neuritis, acute glaucoma</td>
<td>Cranial nerve II, III, or V (ophthalmic [V1] branch)</td>
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<tr>
<td>Hearing impairment</td>
<td>Deafness</td>
<td>Cranial nerve VIII</td>
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<tr>
<td>Motor neuropathy</td>
<td>Weakness, diaphragmatic paralysis, neurogenic bladder</td>
<td>Any sensory ganglia</td>
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<tr>
<td>Postherpetic neuralgia</td>
<td>Pain persisting after the rash has resolved</td>
<td>Any sensory ganglia</td>
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<tr>
<td>Ramsay Hunt syndrome</td>
<td>Ear pain and vesicles in the canal, numbness of anterior tongue, facial paralysis</td>
<td>Cranial nerve VII geniculate ganglia, with spread to cranial nerve VIII</td>
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<tr>
<td>Transverse myelitis</td>
<td>Paraparesis, sensory loss, sphincter impairment</td>
<td>Vertebral ganglia</td>
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<tr>
<td>Vasculopathy (encephalitis)</td>
<td>Vasculitis of cerebral arteries, confusion, seizures, TIAs, stroke</td>
<td>Cranial nerve V</td>
</tr>
</tbody>
</table>
The cervical, brachial, lumbar, and sacral plexuses (at left), and the major peripheral nerves of each (at right).

The branches of the 12 cranial nerves, their functions (motor, sensory, or mixed), and the structures they innervate.
Case

24 y/o ill-appearing African American male presents to dermatology clinic at urology request with rapidly spreading tense vesicles all over body. He is febrile and cannot walk on his own due to painful lesions on plantar surfaces.
Case

30 y/o pregnant female at 28 weeks has eruption consistent with acute varicella infection with diffuse vesicles all over body. Her daughter is born at term with no complications, but at age 10 months, she develops a herpetic rash involving T3 region.
Case

62 y/o male with zoster diagnosed last week, treated with oral antivirals by PCP. He sees dermatology for skin checks and calls to ask if he should be doing anything else for the lesions and pain? He is a college engineering professor and has been reading about prednisone and gabapentin. He prefers that I call him Doctor J.
Case

80 y/o female Hx zoster 5 years ago, presents to dermatology clinic with what PCP has been calling ‘recurrent zoster’ since her original diagnosis. She is actively scratching and rubbing her forehead during the visit.
The same 62 y/o college professor calls b/c he wants my email address b/c he's too busy wait on hold or wait for my call. He is wondering if he should get the shingles vaccine. He wants to make sure he doesn't get this again because he has friends who have dealt with it 'several times'. He is still on valacyclovir for zoster, but he also has 'extra pills' at home b/c he also gets cold sores. He also wants to know if his wife, who is in her 50's, could also receive the vaccine.
The same professor emails you again and asks about insurance coverage of the vaccination for him and his wife, and that he is certainly willing to pay for it. He says money is no object, yet he asks you if there are any coupons or samples available.
Case

55 y/o female sees you regularly for severe psoriasis and psoriatic arthritis. You're currently working on a prior authorization for adalimumab for these indications. What should you tell her about zoster vaccination?
To be continued....

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