DIABETIC FOOT INFECTIONS

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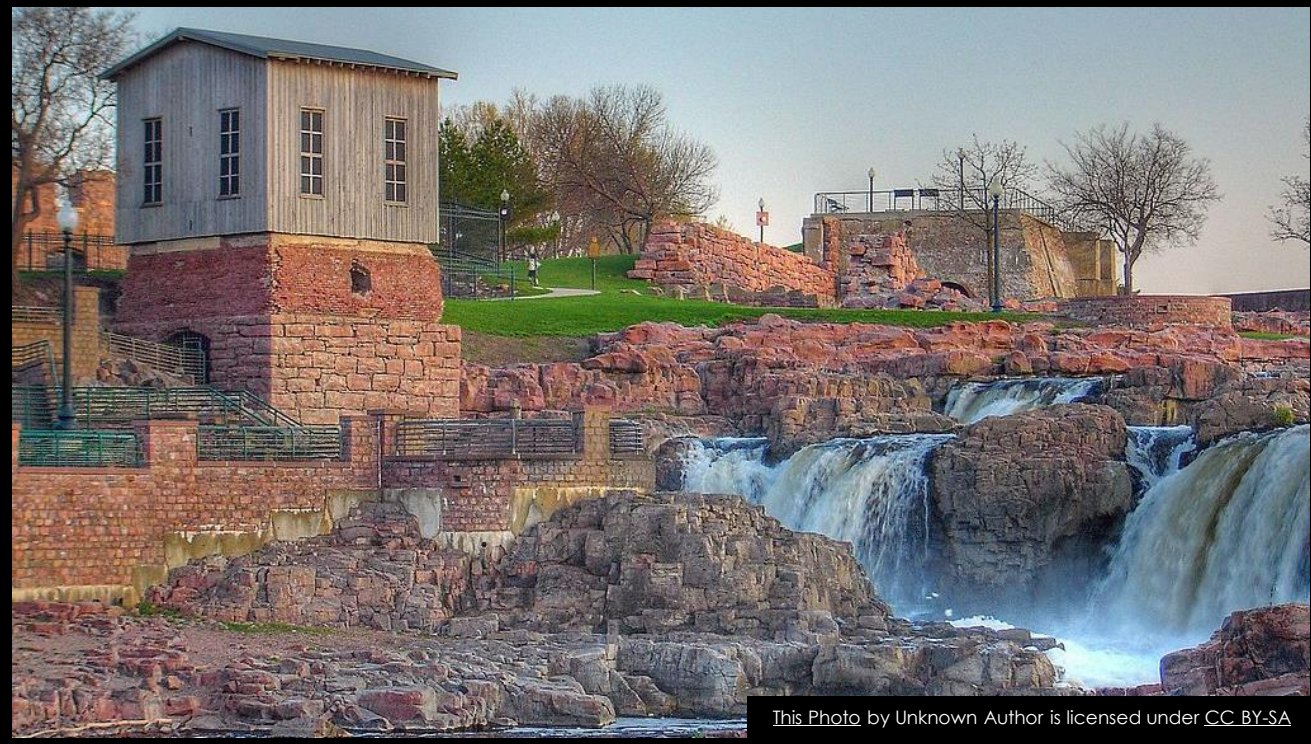
Sanford Health



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VIEWER DISCRETION IS ADVISED

WARNING

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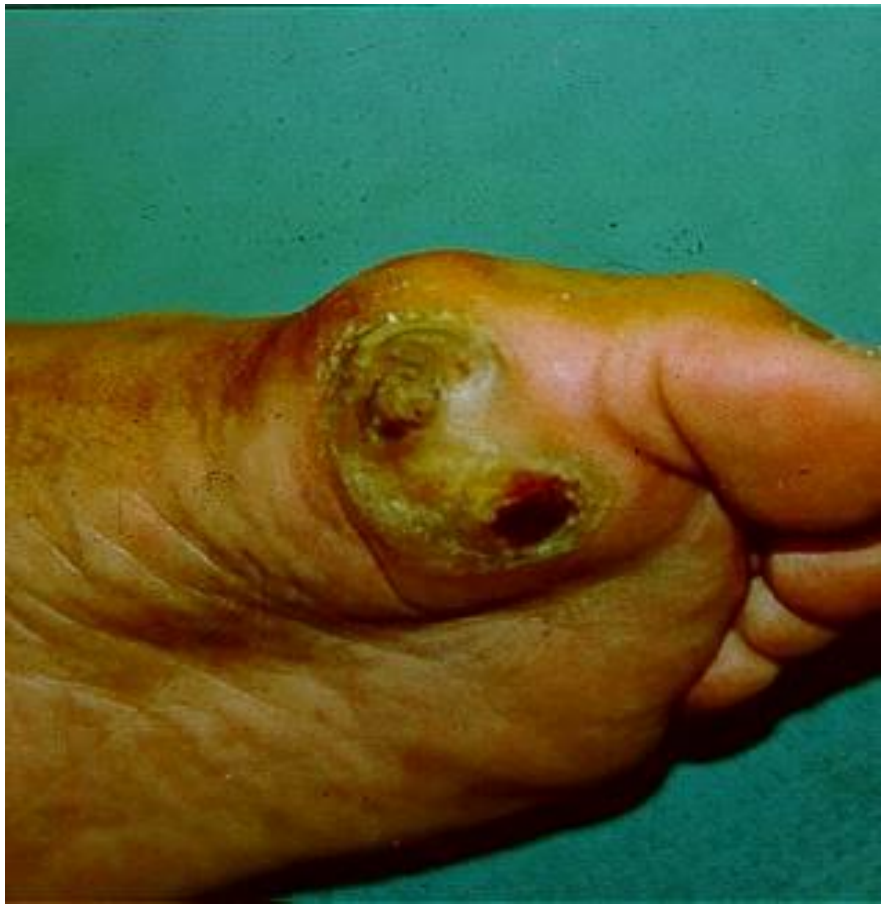
WHY LEARN ABOUT DIABETIC FOOT INFECTIONS (DFI)

- 37.2 Million Americans have DM according to the CDC. (Pop of Us 331.9 Million as of 2021)
- 20-35% of those patients will develop an Ulcer in their lifetime.
- Of those who get an ulcer 50% have the possibility of subsequent infection (Repeat Offenders).
- DFI are a common cause of hospital admissions reported at around 20% of all primary admissions and 40% of readmissions.
- One in six patients admitted for a diabetic infection will die in 1 year.
- Direct and indirect cost of treating patients with diabetes in the US is estimated to cost $245 BILLION DOLLARS a year.

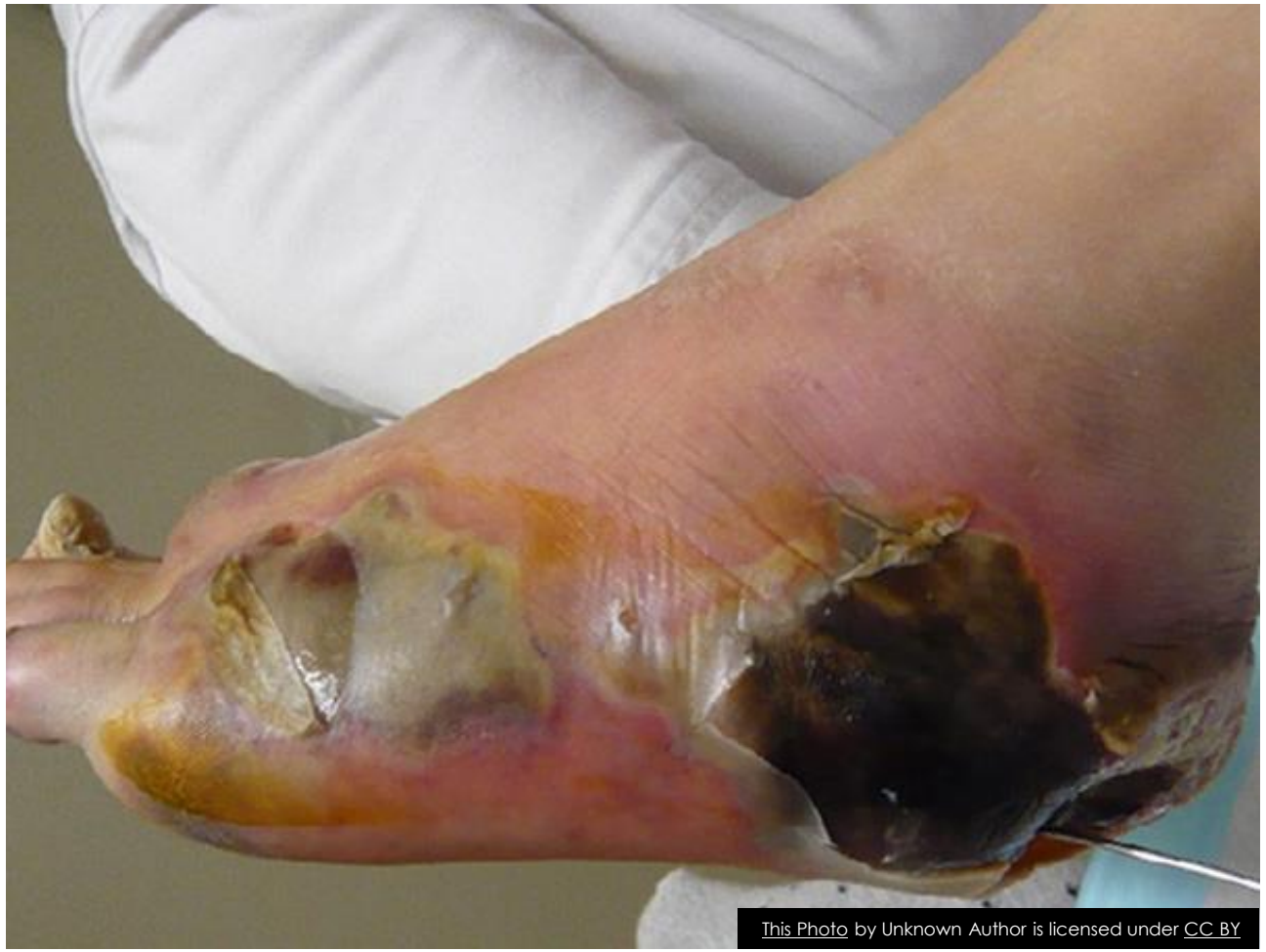


THOMAS CAMPBELL

"Coming Events Cast Their Shadows Before" .....

DEFINITION

- DFI is an invasion and multiplication of microorganisms in host soft tissue or bone of a person with diabetes that induces a host inflammatory response, usually followed by tissue destruction.



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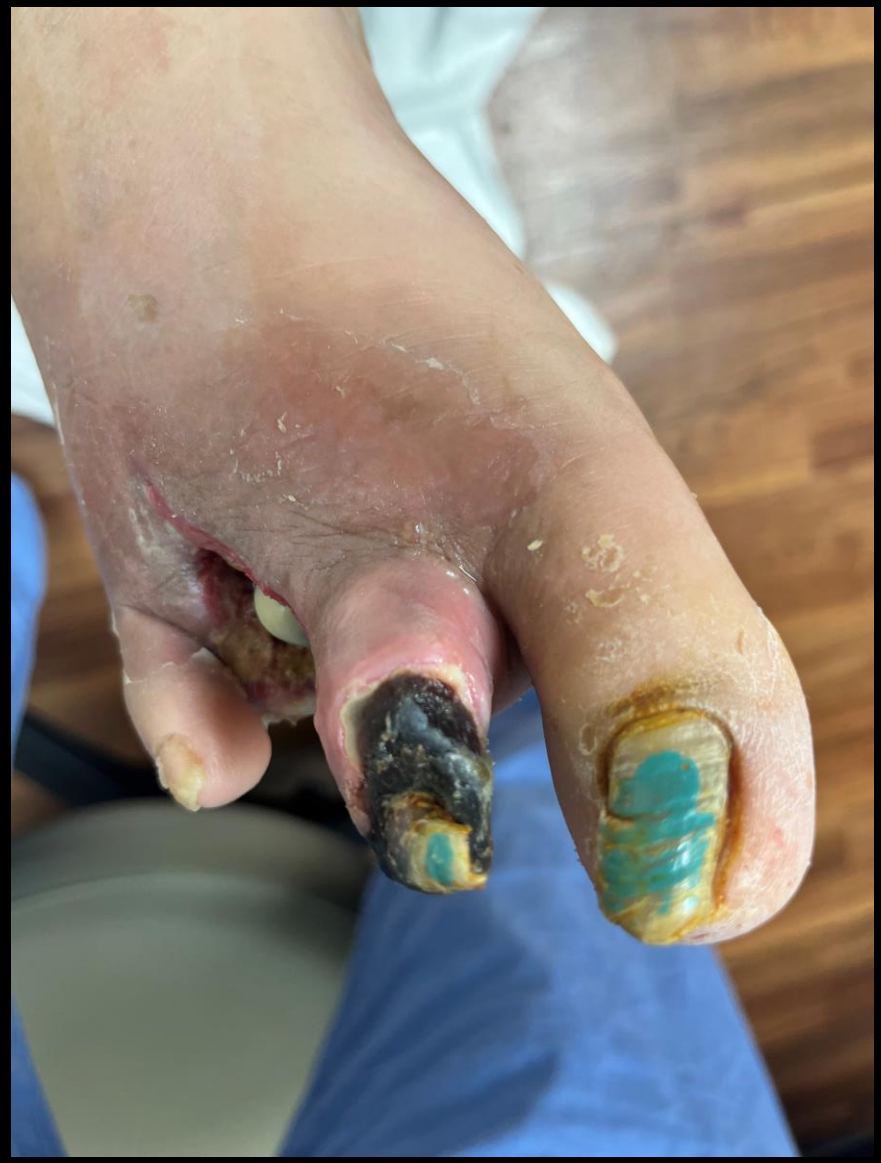
WHAT IS AN INFECTION?

WHAT IS AN INFECTION?

- Edema
- Warmth
- Redness
- Pain?
- Malodor
- Drainage
- Necrosis
- Exposed Bone
- Constitutional Symptoms



CASE PRESENTATION

65 year old F with uncontrolled Diabetes who presents for ingrown nail after trauma 3 months ago

WHAT JUMPS OUT?

RED Flag – Diabetic (Uncontrolled)

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RED Flag – Time Frame

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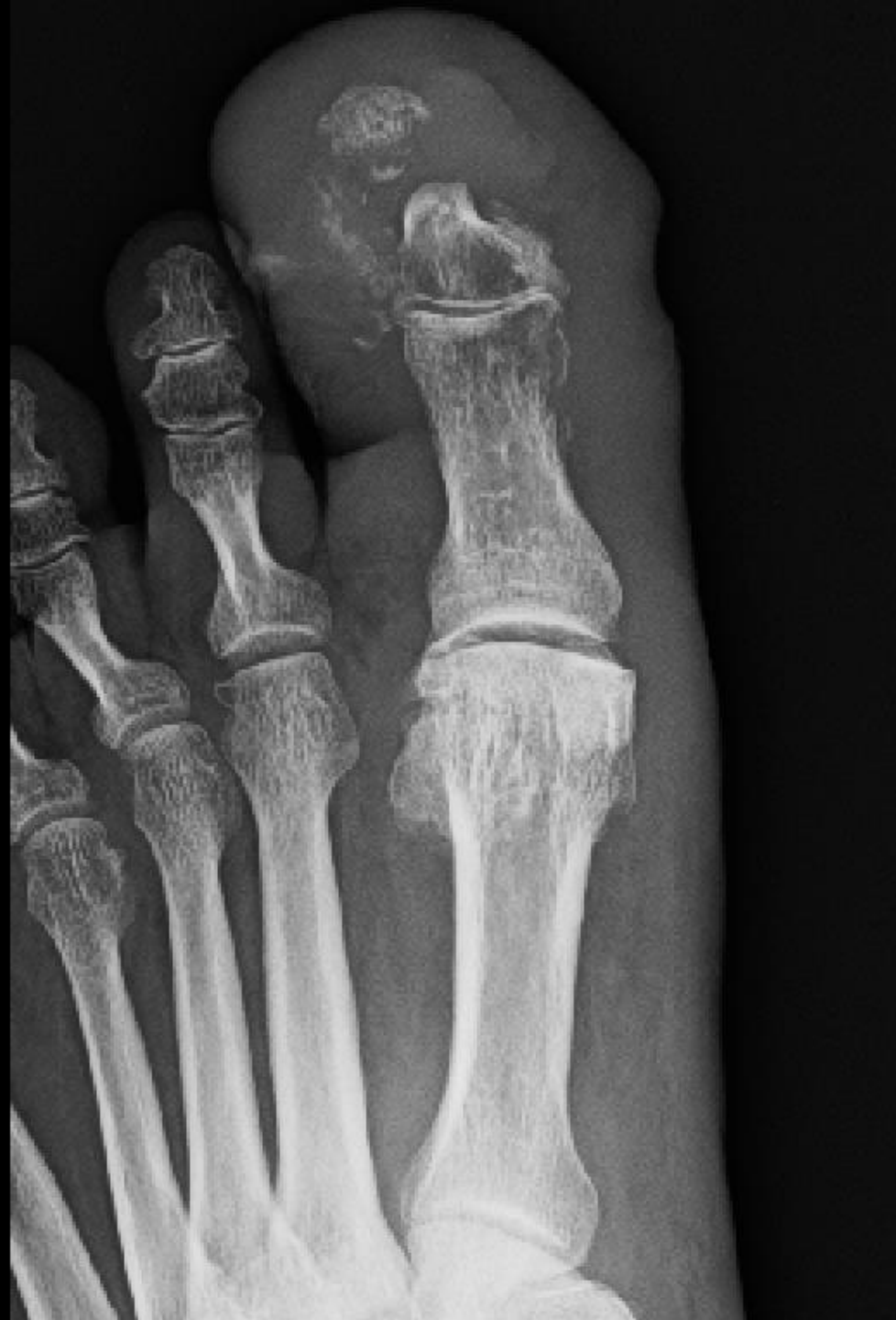
PATIENT HISTORY

Additional Info:

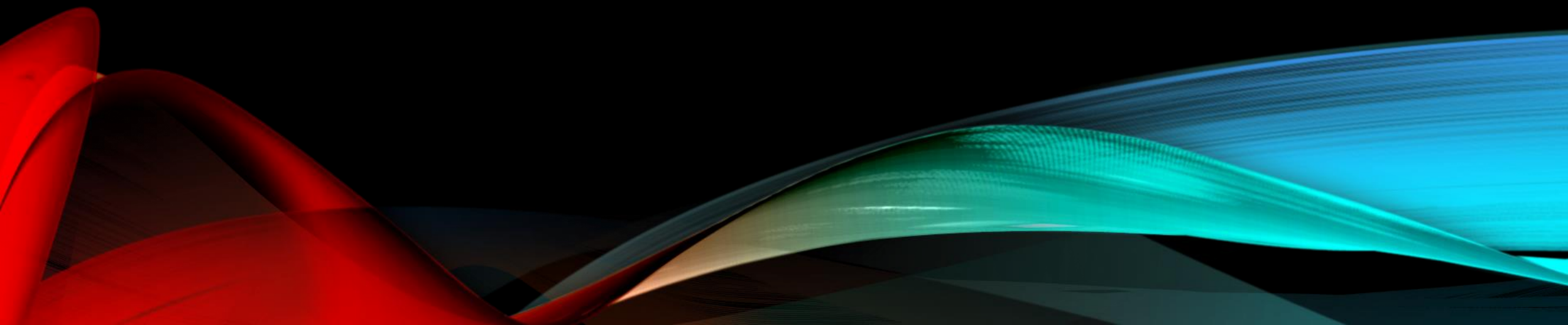
- •Dropped a fire extinguisher on left great toe 3 months ago.
- •Toe has been swollen and red in appearance ever since
- •Throbbing pain when WB
- •Denies constitutional symptoms except she had the chills 2 or 3 days ago…maybe

EXAMINATION

- Palpable DP PT pulses
- Edematous great toe
- Distal nail lysis with surrounding “proud flesh”
- Erythema with only partial resolve with elevation
- Minimal to mild pain
- Muscle strength 5/5



SO WHAT DOES HE HAVE?



BONE INFECTION (OSTEOMYELITIS)

DEFINE OSTEOMYELITIS?

an infection of bone marrow and surrounding bone.

most commonly penetration of bacterial pathogens through some break in the skin

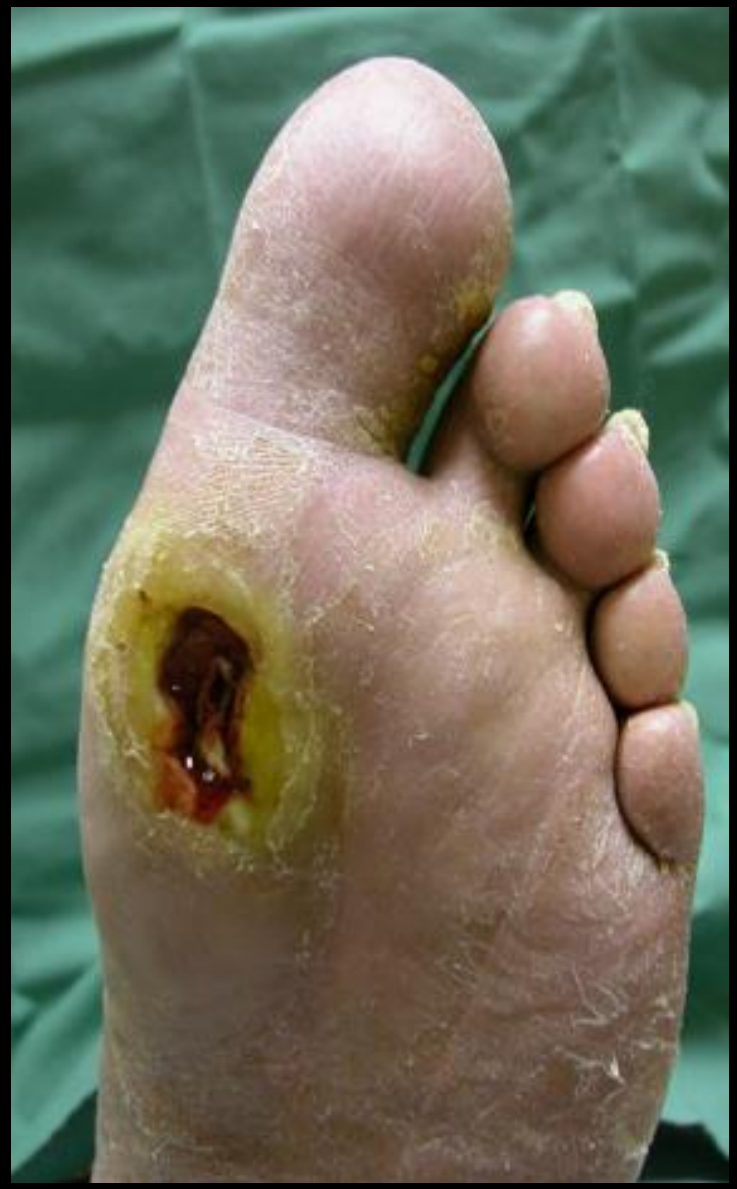
bacteria adhere to the underlying bone and eventually penetrate through the cortical bone into the medullary cavity.

Infection of one bone may spread to adjacent tissue

EPIDEMIOLOGY

Epidemiology

- Diabetics are the most commonly involved patient group with osteomyelitis!
- Diabetics have an approximately 25% chance of developing a foot complication, the most common of which is ulceration (Singh, et al. 2005).
- Of these diabetic foot infections 20-66% involve infected bone (Lavery, et al. 2006

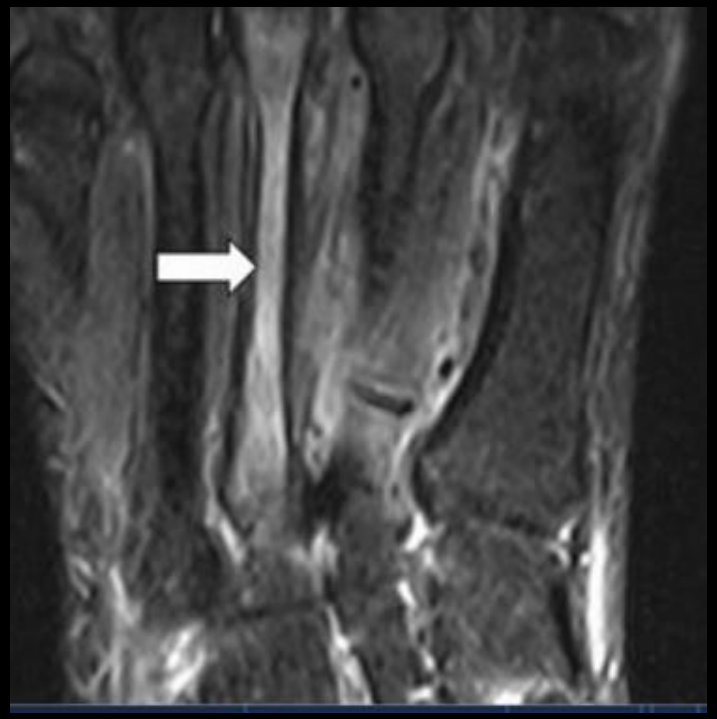


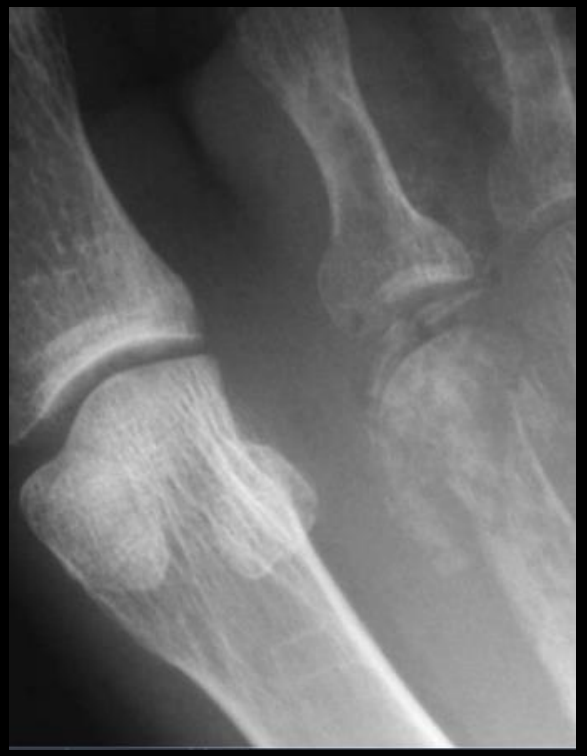
DIFFERENTIALS

- Acute Charcot neuroarthropathy
- Chronic Charcot neuroarthropathy
- Bone tumors
- Sickle cell crisis
- Avascular necrosis
- Inflammatory arthropathies
- Metabolic bone diseases (Paget's, hyperparathyroidism, etc)
- Trauma
- Various infectious agents

WORKUP

- XR
- MRI
- ABI/Arterial Duples
- TCPO2





LABS

- CBC
- Metabolic panel
- ESR
- CRP
- HgA1c

TREATMENT

- Staging is Vital
- Non Surgical – Antibiotics, Hyperbaric, wound care
- Surgical

SIMPLE WOUND CLASSIFICATION

- Whats the problem?
  - Unable to distinguish presence of infection or ischemia as independent risk factors for healing!!!

Table 1.1. Traditional Meggitt-Wagner Ulcer Classification System.

Grade	Lesion
0	No ulcer, but high-risk foot (bony prominences, callus, deformities, etc).
1	Superficial, full-thickness ulcer.
2	Deep ulcer, may involve tendons, but without bone involvement.
3	Deep ulcer with osteomyelitis.
4	Local gangrene (toes or forefoot).
5	Gangrene of whole foot.

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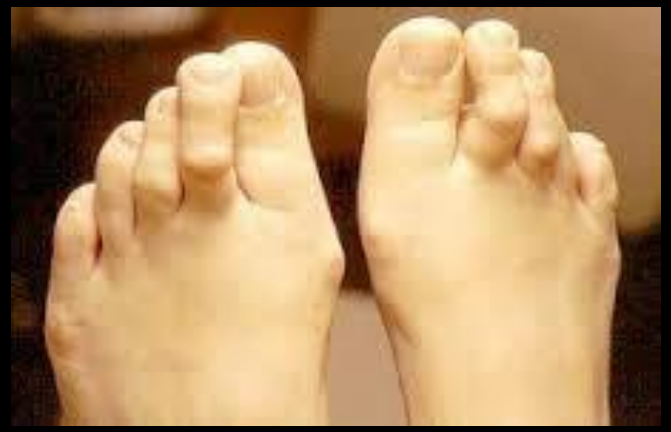
RECOGNIZE DEFORMITIES

Calluses
Mycotic Nails
Bony Prominences
Digital Deformities
Hallux Valgus



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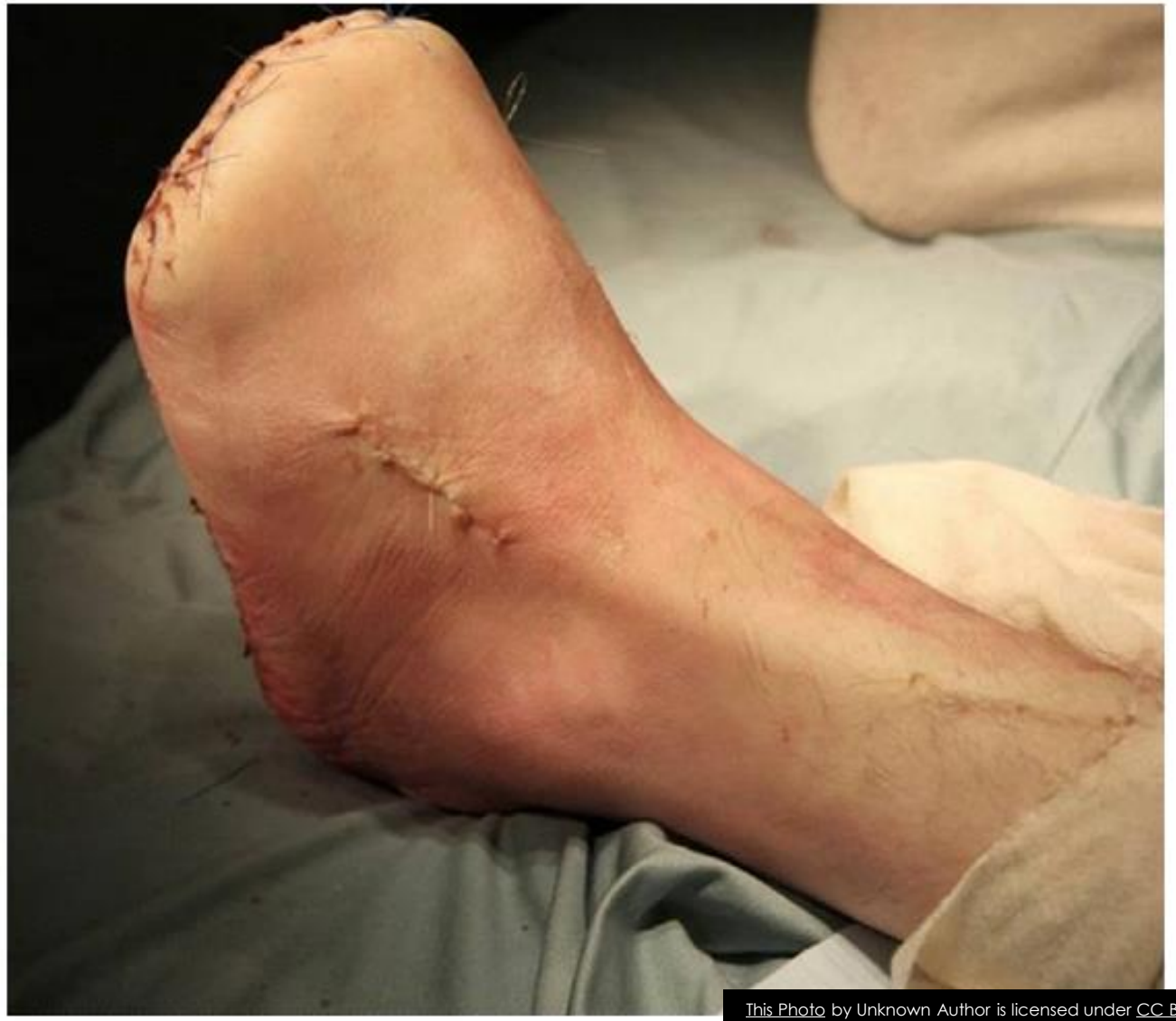
Hallux Limitus
Prominent Met. Heads
Equinus
Charcot Arthropathy
Prior Amputation

UPDATE

- Patient admitted that day.
- MRI evident for osteomyelitis
- TMA
- Per ID recs was treated with 4 week IV antibiotic therapy based off Final OR cultures
- Recovering well and in gait training at this time with close PCP/endocrine follow up



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POST OPERATIVE CARE AND REHABILITATION

- Patient should follow up with PCP
- Diabetic Nurse Educator
- Endocrinologist
- Infectious Disease
- Vascular surgeon
- Wound Care

PEARLS OF WISDOM

- Trust your Nose
- Always check the Feet! Yes you will have to remove peoples shoes
- Infections can be small or big
- Time matters
- Be the first line of defense
- Act quickly and decisive

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ADA CLINICAL PRACTICE RECOMMENDATIONS 2008

- Perform a comprehensive foot examination annually on patients with diabetes to identify risk factors predictive of ulcers and amputations.
- Perform a **visual inspection of patients' feet at each routine visit** *quarterly basis

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QUESTIONS

GOD BLESS THE GREAT STATE OF SOUTH DAKOTA

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