A Life-Threatening Case of "Shoulder Pain"

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Introduction

- Diagnostic errors have the potential to seriously harm patients.
- Contributors to diagnostic error include patient characteristics, clinician cognitive errors and health system factors.
- We analyze a case of delayed life-threatening musculoskeletal diagnosis and offer multi-level strategies to lower risk for misdiagnosis.

Case Description

24 Hours: 1st Emergency Department Evaluation

- A 50 year-old female with a history of morbid obesity, Diabetes Type 2, and chronic low back pain presented to the emergency department (ED) with acute onset of R "shoulder pain."
- Musculoskeletal exam documentation limited to: "Normal range of motion."
- ED Diagnosis: "Acute pain of R shoulder. Sprain of R rotator cuff capsule."
- ED Treatment: Range of motion exercises. Norco® #12.

48 Hours: Outpatient Orthopedic Consultation

- Noted that patient reported difficulty swallowing due to pain in the R side of neck.
- Noted R clavicle & anterior chest wall tender to palpation. Tenderness along nape of neck, posterior aspect of R shoulder, proximal upper arm.
- Diagnosis: Muscle strain R shoulder.

72 Hours: 2nd Emergency Department Evaluation

- Patient returned to ED with increasing pain.
- New ED physician examined patient with plans to discharge.
- Family medicine resident contacted for final disposition.
- Family medicine resident noted slight R neck fullness, tenderness to palpation of R sternoclavicular joint, and severe pain with rotation and side-bending of head to right.
- CT soft-tissue neck ordered (See Fig 1 & 2).
- Final Diagnosis: Septic sternoclavicular joint infection and neck abscess with myonecrosis.

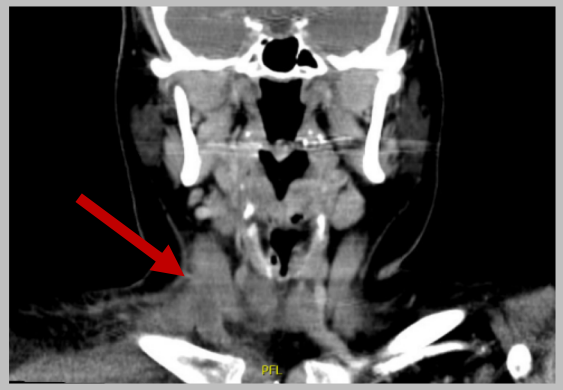

Figure 1: CT Neck with Contrast: Superimposed intramuscular abscess involving the distal right sternocleidomastoid muscle.

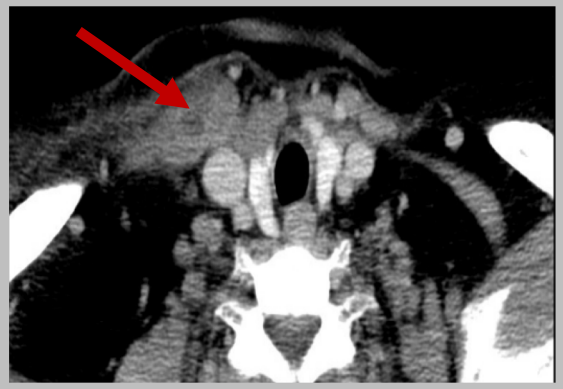

Figure 2: CT Neck with Contrast: Septic arthritis involving the right sternomanubrial joint with associated myositis involving the right sternocleidomastoid, right sternohyoid and partially visualized right pectoralis muscles.

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Discussion

- We hypothesize that the interplay of illness misrepresentation, clinician bias, and diagnostic inertia led to a serious medical emergency.

- **Potential Sources of Diagnostic Error:**
  - Patient symptom translation error: "shoulder pain"
  - Clinician biases regarding obese, chronic pain patients
  - Inadequate physical examination
  - Faulty reassurance based on plain film imaging
  - Anchoring bias: Overreliance on initial information without appropriate re-interpretation of new information
  - Premature closure fallacy: Failure to consider reasonable alternatives after an initial diagnosis is made
  - Delayed/lack of integrated health record systems

- **Strategies for Improvement:**
  - Communication
    - Detailed/targeted chart review
    - Peer-to-peer dialogue
  - "Patient-centered" diagnostic inquiry
  - Focused thorough physical examination
  - Self-awareness of potential implicit bias
  - Real-time health record access linking primary, specialty, and emergency care documentation

Conclusion

- Clinicians fail to achieve accurate, timely diagnosis due to multi-level factors, exemplified by this case.
- Recognition and amelioration of these potential pitfalls could lead to earlier diagnoses, preventing life-threatening complications, and reducing healthcare costs.

References

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