Constructing a Well-Built Clinical Question (WBCQ)

Clinical Example – Diagnosis

Scenario
A 53 year old male patient with a 15 year history of type 2 diabetes mellitus presents to your clinic. He is a tradesman who operates his own construction company, is very busy and generally doesn’t manage his diabetes very well. His recent HbA1c was 9% and is normally around this range. His endocrinologist recently commenced insulin to assist with his glycaemia control. Today he presents with a red, hot, swollen right foot. On inspection there is no evidence of ulceration or open wound on the foot, however, the patient reports having an ulcer on the right foot which healed approximately 3 weeks.

Teaching point
Osteomyelitis and acute neuropathic joint disease often have a very similar clinical presentation. Differentiating between them can be difficult. MRI, blood studies and thorough patient history and physical exam are the cornerstones of early and efficient diagnosis.

PICO

| P          | Insulin requiring type 2 diabetes. |
| I          | Physical exam including joint mobilisation to identify presence of joint crepitus.  
            | Radiological imaging including X-ray and MRI.  
            | Skin temperature assessment (6 point) to determine bilateral difference.  
            | Blood studies including ESR and CRP.  
            | Neurovascular exam to determine presence of neuropathy and exclude peripheral arterial disease. |
| O          | Early diagnosis is essential as morbidity increases dramatically for both osteomyelitis and acute neuropathic joint disease if treatment is not implemented promptly.  
            | Late detection of osteomyelitis in the insulin requiring type 2 diabetic can lead to septicaemia.  
            | Late detection of acute neuropathic joint disease can lead to joint deformity, ulceration and amputation. |

Clinical Question
What clinical and laboratory tests and studies can you perform and/or request to assist you to differentiate between a diagnosis of osteomyelitis or an acute neuropathic joint (Charcot) episode? What is the gold standard test to differentiate these two pathologies?

Evidence
Clin-eguide: Leibovici L. Review: magnetic resonance imaging
Review: Magnetic resonance imaging is an accurate test for diagnosing foot osteomyelitis