Osteomyelitis is an increasingly common ~~pathology that~~ condition~~often poses a diagnostic challenge to clinicians~~. Accurate and timely diagnosis is ~~critical to~~crucial for preventing complications that can result in the loss of life or limb; however, the diagnosis remains a challenge clinically. In addition to history, physical ~~exam~~examination, and laboratory studies, diagnostic imaging ~~plays an~~is essential ~~role in the diagnostic process. This~~ for diagnosis. In this narrative review article ~~discusses~~, various imaging modalities ~~employed to diagnoseosteomyelitis~~used to diagnose osteomyelitis are described; these include~~:~~ plain ~~films~~radiography, computed tomography (CT), magnetic resonance imaging (MRI), ~~ultrasound~~ultrasonography, bone scintigraphy, and positron emission tomography (PET). Articles were ~~obtained from~~identified through PubMed and screened for relevance to the topic of diagnostic imaging for osteomyelitis. The authors ~~conclude~~concluded that plain ~~films are~~ radiography is an appropriate first step~~, as they~~ because the images may reveal osteolytic changes and can help rule out alternative ~~pathology~~disease. MRI is often the most appropriate second ~~study, as~~step because it is highly sensitive and can ~~detect~~reveal bone marrow changes within days of an infection. Other ~~studies~~imaging modalities such as CT, ~~ultrasound~~ultrasonography, and bone scintigraphy may be ~~useful in patients who~~helpful when MRI cannot ~~undergo MRI~~be performed. CT is useful for ~~identifyingnecrotic~~identifying necrotic bone in chronic infections. ~~Ultrasound~~Ultrasonography may be useful in children or ~~those~~ individuals with sickle-cell disease. Bone scintigraphy is particularly useful ~~for~~in detecting vertebral osteomyelitis. Finally, PET ~~scan~~ has demonstrated high sensitivity and specificity; however, as it is expensive and often unavailable, its clinical application is limited ~~by its high cost and poor availability.~~. When used appropriately, ~~diagnostic imaging can provide~~radiographic evaluation has high sensitivity and specificity for detecting osteomyelitis~~, making radiographic evaluation~~; thus, it is a crucial step in ~~the diagnostic process of~~diagnosing this debilitating condition.

Comment [A1]: Some text has been rearranged here for ensuring better flow with respect to context.

Comment [Editor2]: "Those" has been replaced with "individuals" for clarity as to who is being referred to at this instance.

Comment [A3]: At a previous instance in the text, the term "PET" has been used. Therefore, at this instance, "PET scan" has been revised to "PET" to maintain consistency.

SAMPLE

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