

Image in Medicine

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Quiz 1

CT scan images of the chest of a 46-year old man with cough and fever since 1 month.

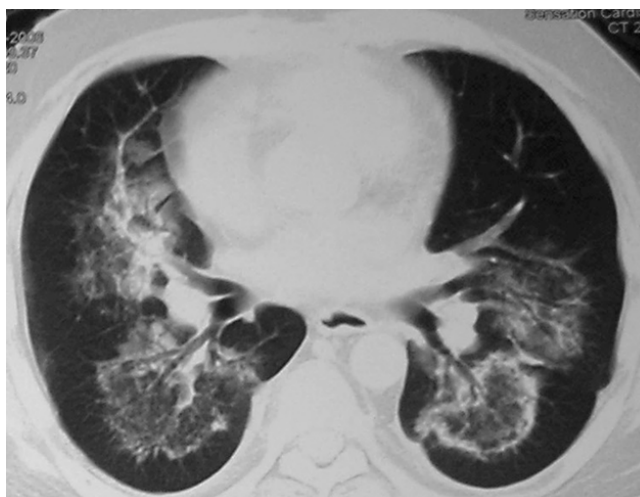
Questions :

- (1) What is the sign ?
- (2) What are the common differential diagnosis?

Answers :

(1) Reversed halo or atoll sign, is defined as central ground-glass opacities surrounded by denser consolidation.

(2) Atoll sign is classically seen in organising pneumonia. However it can also be seen in invasive fungal infections, COVID, sarcoidosis and rarely in other conditions such as pulmonary infarction, granulomatosis with polyangiitis and radiation pneumonitis.



Quiz 2

A CT scan images of a 32 year old man who presented with swelling in left upper thigh following an interventional drainage procedure.

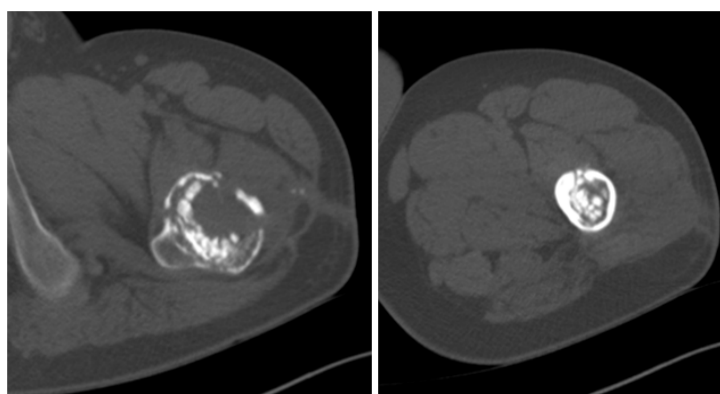
Questions :

- (1) What is the diagnosis ?
- (2) What is the advantage of antibiotic impregnated beads in osteomyelitis ?
- (3) What are the common indications of antibiotic impregnated cement ?

Answers :

(1) Osteolytic area with cortical erosion is seen involving proximal 1/3rd shaft of femur with inflammation of surrounding muscles. Findings are in favour of osteomyelitis. Multiple antibiotic beads (seen as multiple well defined hyperdense foci) are placed within proximal shaft of femur.

(2) Antibiotic-impregnated cement delivers a higher concentration of antibiotic locally than can be achieved with systemic therapy while avoiding the drug toxicity that is often associated with high parenteral doses. The delivery of antibiotic is facilitated by local diffusion into



the tissues and allows the drug to reach avascular areas that are otherwise inaccessible. Polymethyl-methacrylate (PMMA) cement is prepared by mixing powdered PMMA particles, containing barium sulfate with liquid methyl-methacrylate and an activator. The antibiotics are mixed in powdered form with this PMMA powder and are then molded into beads.

(3) Antibiotic impregnated cement beads are commonly used in revision arthroplasty, open fractures, infected internal fixation hardware and osteomyelitis. Other uses are infected thoracic and abdominal aortic grafts.



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