

Case	(526) Emphysematous osteomyelitis: case report & key findings.
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## CASE PRESENTATION

A 43-year-old male was admitted to the Emergency Department following general discomfort of 7 days of evolution. His medical history was relevant for traumatic paraplegia. No history for recent trauma or surgery was given. On arrival, he was febrile, tachycardic and hypotensive.

Physical examination revealed necrotic ulcers on left gluteus and sacral region. Laboratory findings showed elevated procalcitonine and C-reactive protein, with leukocytosis with neutrophilia on blood count. Left-hip ultrasound was performed, showing a huge heterogeneous collection.

The study was completed with a CT-scan, which revealed a large abscess in left hemipelvis with extensive soft-tissue emphysema. Intraosseous gas within left femoral head was observed, consistent with emphysematous osteomyelitis. Antibiotherapy was administered and surgical debridement performed.

Skin-ulcers cultures were positive for *Streptococcus anginosus* (which also grew on blood cultures), *Proteus mirabilis* and *Staphylococcus aureus*. Follow-up CT revealed posterior luxation of left femoral head and a complex insufficiency fracture involving left femoral neck.

## DISCUSSION

Emphysematous osteomyelitis (EO) is a rare and life-threatening condition characterized by presence of intraosseous gas. It is usually a clinically unsuspected condition which is diagnosed upon radiological findings.

The most commonly involved bones are pelvic bones, vertebral bodies and femur. EO affects patients with significant underlying comorbidity (malignancy, DM, alcohol abuse, etc). It is related to high-mortality, requiring early diagnosis and aggressive therapeutic intervention.

EO is caused by gas-forming microorganisms, being anaerobes and bacteria from Enterobacteriaceae family the most commonly involved agents. It could be both mono- and poly-microbial, usually resulting from hematogenous spread.

However, local spread from intraabdominal, spinal or skin and soft-tissue infectious foci has also been described. CT constitutes the imaging modality of choice. It enables:

- Confirmation of EO diagnosis, based on the presence of intraosseous gas. When detected in extra-axial skeleton, is highly suggestive of EO. Conversely, gas within vertebral bodies results almost always from degenerative disease (also known as "vacuum phenomena").

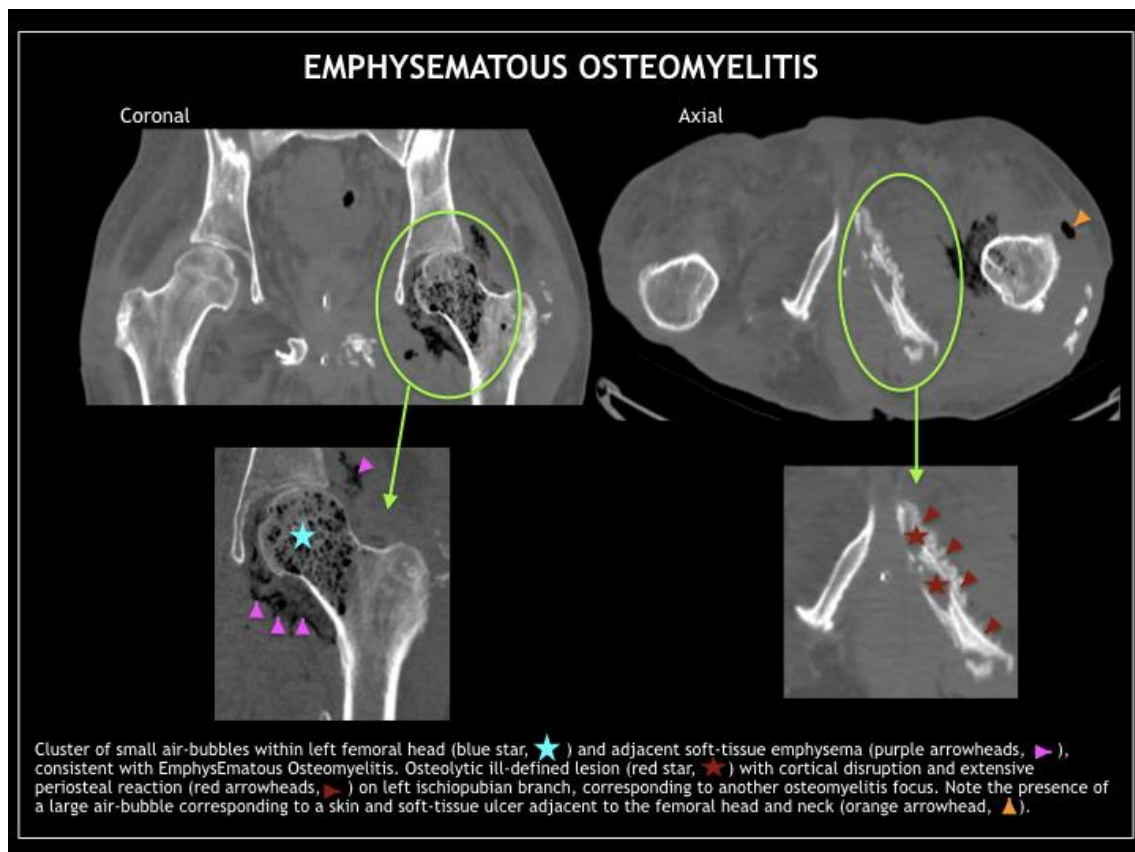
However, whenever extensive intravertebral gas, bone edema and/or paraspinal collections are present, EO should be ruled out.

- Determination of the extent of the infection.

Differential diagnosis for EO includes trauma, postsurgical and degenerative changes, osteonecrosis, malignancy and lymphangiomatosis of the bone.

## CONCLUSION

EO is a life-threatening condition, for which early diagnosis based on key imaging findings (presence of intraosseous gas) results essential



## BIBLIOGRAPHY

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