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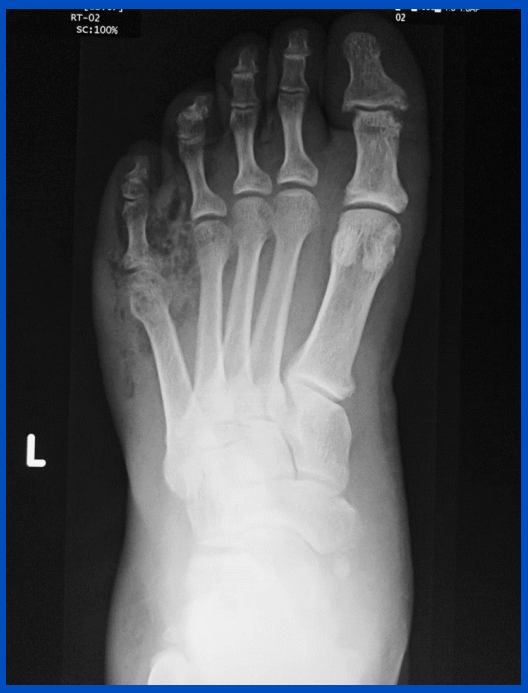

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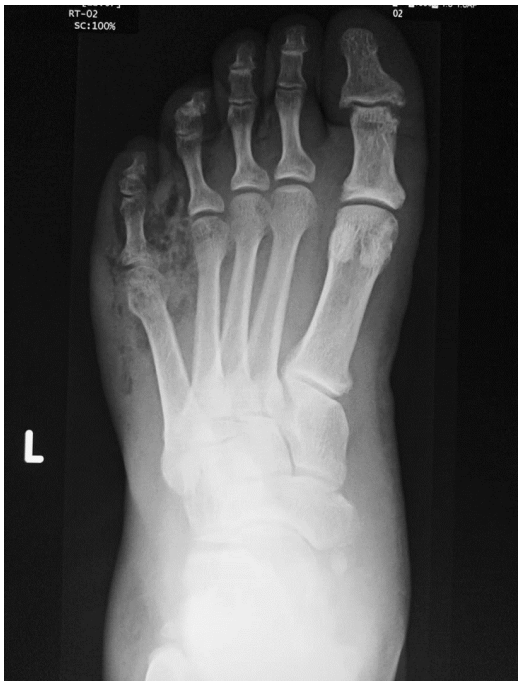

A 47-year-old man with poorly controlled diabetes mellitus ($Hb_{A1}c$ 10.6%), hypertension, dyslipidaemia and previous stroke (good recovery) presented with a week history of left foot discomfort. This was associated with fever, chills, rigors, discolouration of the toes and foul smelling discharge. There was erythema of the dorsal aspect and gangrene of the 4^{th} and 5^{th} toes. Peripheral pulses were intact. Laboratory investigations revealed leukocytosis (white cell count 22.1 x 10^9), elevated C-reactive protein (CRP 28 mg/dl) and mild acute kidney injury. What does the radiograph of the left foot radiograph show?

What is the diagnosis?

Answer*: refer to page 10*

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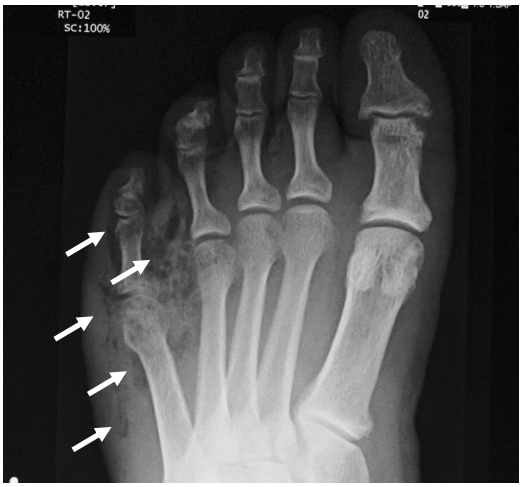
DISCLOSURE: There is no conflict of interest and consent has been obtained from parents for use of these images.

(Refer to page 9)

ANSWER: EMPHYSEMATOUS CELLULITIS

The radiograph (panel) of the left foot shows gas pockets (arrows) located at the 4th and 5th toes with changes of osteomyelitis affecting the 5th toe. Pus and tissue cultures isolated *Morganella morganii (M. morganii)* sensitive to the antibiotics (intravenous amoxicillin -clavulanic acid and ceftazidime) given to the patient. The patient was treated with wound debridement disarticulation of the 4th and 5th toes but later required a below knee amputation to control the infection.



Diabetic foot is a common complication among patients with poorly controlled diabetes mellitus and is the leading cause of limb amputation.[1, 2] Emphysematous cellulitis is uncommon and is potentially catastrophic resulting in amputation and even death. The causative organisms can be *Clostridia* or non-*clostridia* species. Gas formation caused by non-clostridia organisms is due to mixed aerobic (sometimes anaerobic bacteria) metabolism and usually has a more gradual progression and better prognosis compared to *Clostridial* infection.[3] In patient with diabetes mellitus, gas formation can be due to fermentation of organic acid as result of hyperglycemia. Microvascular complications contribute to tissue ischaemia. *M. morganii* is a gram negative bacillus and it can produce severe local and systemic infection in diabetes patient which can result poor outcomes.[4]

Emphysematous cellulitis requires early diagnosis and should be treated appropriately with glycaemia control and good antibiotic coverage, typically intravenous in the initial phase that can be changed to oral formulation. The antibiotics coverage should be guided by microbial sensitivity results. Surgical interventions (i.e. debridement) may need to be considered early because amputation can greatly effect on the outcome and on the daily life of the patient. In this present case, the infection was not controlled with debridement and disarticulation necessitating a below knee amputation.

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