Lethal gastric gas gangrene caused by *Clostridium butyricum*

Clostridium butyricum happened to infect the stomach, resulting in fulminant death of a diabetic male patient aged 60's. *C. butyricum*, a resident of healthy human gut, uniquely produces butyric acid as a metabolite, hence named. At autopsy, foamy appearance of the gastric wall was quite characteristic. The liver also appeared foamy/spongy. The formation of spores inside the rugby ball-shaped Gram-positive rod bodies is microscopically characteristic of *C. butyricum*. This is in sharp contrast to poor spore formation by *C. perfringens*. Surgically curable *C. butyricum*-induced intestinal gas gangrene is described in Inf-118-1-rods and Inf-118-2-rods.

Ref.: Cassir N, et al. *Clostridium butyricum*: from beneficial to a new emerging pathogen. Clin Microbiol Infect 2016; 22(1): 37-45. doi.: 10.1016/j.cmi.2015.10.014



Gross appearance of *Clostridium butyricum*-induced lethal gastric gas gangrene seen in a diabetic male patient aged 60's. The gastric wall grossly demonstrates formation of palpitating small gas bubbles. Gross appearance after formalin fixation-1



Gross appearance of *Clostridium butyricum*-induced lethal gastric gas gangrene seen in a diabetic male patient aged 60's. The gastric wall grossly demonstrates formation of palpitating small gas bubbles. Gross appearance after formalin fixation-2



Microscopic appearance of *Clostridium butyricum*-induced lethal gastric gas gangrene seen in a diabetic male patient aged 60's. Small gas bubbles are formed in the mucosa and submucosa but with little inflammatory reactions. H&E



The Gram-positive long rods growing in the gastric wall (around the gas bubble) exhibit distinct spore formation in rugby ball-shaped bacterial bodies, morphologically consistent with *Clostridium butyricum*. Gram-1



The Gram-positive long rods growing in the gastric wall (around the gas bubble) exhibit distinct spore formation in rugby ball-shaped bacterial bodies, morphologically consistent with *Clostridium butyricum*. Gram-2