A 56-year-old female patient sought medical advice because of mild fever and a face lesion of two-week duration. Her past medical history was significant for diabetes mellitus (managed with insulin), mild chronic renal insufficiency and breast cancer for which she underwent total right mastectomy 10 years ago. The patient also received radiation and chemotherapy at that time. She recently received again chemotherapy due to hepatic and bone metastases (the last chemotherapy regimen was one month ago). Physical examination showed a temperature of 37 degrees Celsius and a large, vegetating lesion on the nose with areas of honey-coloured and black areas (Figure 1). Routine laboratory testing showed: hematocrit 39.6%, hemoglobin 13 g/dL, white blood cell count 6.91 K per cubic mm, neutrophils 93.6%, glucose 622 mg/dL, creatinine 1.9 mg/dL, blood urea 96 mg/dL, and total bilirubin 1.36 mg/dL. What is the diagnosis?

Impetigo-like lesions caused by Klebsiella pneumoniae.

Management
A culture of the affected tissue grew Klebsiella pneumoniae. The patient received antimicrobial treatment with ciprofloxacin 500 mg p.o. every 12 hours and amoxycillin/clavulanic acid 500/125 mg p.o. every 8 hours that led to gradual disappearance of fever and the nasal lesion within 2 weeks (Figure 2).

Teaching points
- The immunosuppressive state due to chemotherapy for metastatic breast cancer combined with the uncontrolled diabetes mellitus suggested a fungal infection such as mucormycosis or aspergillosis as a possible cause of the black nasal lesion (2). However, the normal findings of the nasal cavity of the examination by an ENT specialist and the overall good condition of the patient were against the diagnosis of invasive fungal disease.
- The clinical features of this vegetating skin lesion of the nasal region do not really fit to one of the described infectious or non-infectious skin and/or subcutaneous tissue inflammatory diseases. Although no biopsy was obtained (since the lesion started to improve quickly after the initiation of the antimicrobial treatment), the impressive response to the antimicrobial treatment leaves no doubt about the infectious etiology of the lesion (Klebsiella pneumoniae). The lesions of our patient could resemble those of impetigo. For this reason, the microbial etiology of the infection of our patient (Klebsiella pneumoniae) is of special clinical interest.
- Several other specific clinical entities were considered, but various features did not support any of them. Klebsiella ozonae and Klebsiella rhinoscleromatis may affect the upper respiratory tract leading to ozena and rhinoscleroma respectively (3,4). Noma (cancrum otis) is a gangrenous disease affecting the soft and hard tissues of the mouth and face (5). It predominantly affects children in less developed countries. Ecthyma gangrenosum is a cutaneous manifestation of Pseudomonas aeruginosa infection in immunocompromised patients. It is characterized by necrotic ulcerations surrounded by an erythematous halo (6). However, our patient did not have necrotic lesions. Periorbital tissues may become infected either by trauma or as a result of primary bacteremia. Periorbital cellulitis is manifested as erythema, induration, tenderness and warmth of the preseptal periorbital tissues, mainly the eyelids. Orbital cellulitis is a potentially lethal infection that involves the orbit itself. It causes proptosis, chemosis, ophthalmoplegia or decreased visual acuity. It almost always occurs as a complication of sinusitis (7). Pyoderma vegetans is characterized by large verrucous plaques with elevated borders and multiple pustules. Its aetiology remains unknown; the lesions do not respond to antimicrobial treatment (8). Vegetating pyoderma gangrenosum is characterized by chronic, hypertrophic, inflammatory lesions affecting extensive skin surface areas (9). Necrotizing soft tissue infections are a group of highly lethal infections. ExCISIONAL debridement is needed in these cases (10).
- Impetigo-like lesions may be caused by Klebsiella pneumoniae, in immunosuppressed patients.

References


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