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原文作者姓名：	Nitin Prakash Oswal, Pushkar Kiran Gadre, Prachee Sathe, Kiran Shrikrishna Gadre
通訊作者學校：	Sahyadri Hospital, Bopodi, Pune, India
報告者姓名(組別)：	賈媮如 (Intern F 組)
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內文：

Abstract

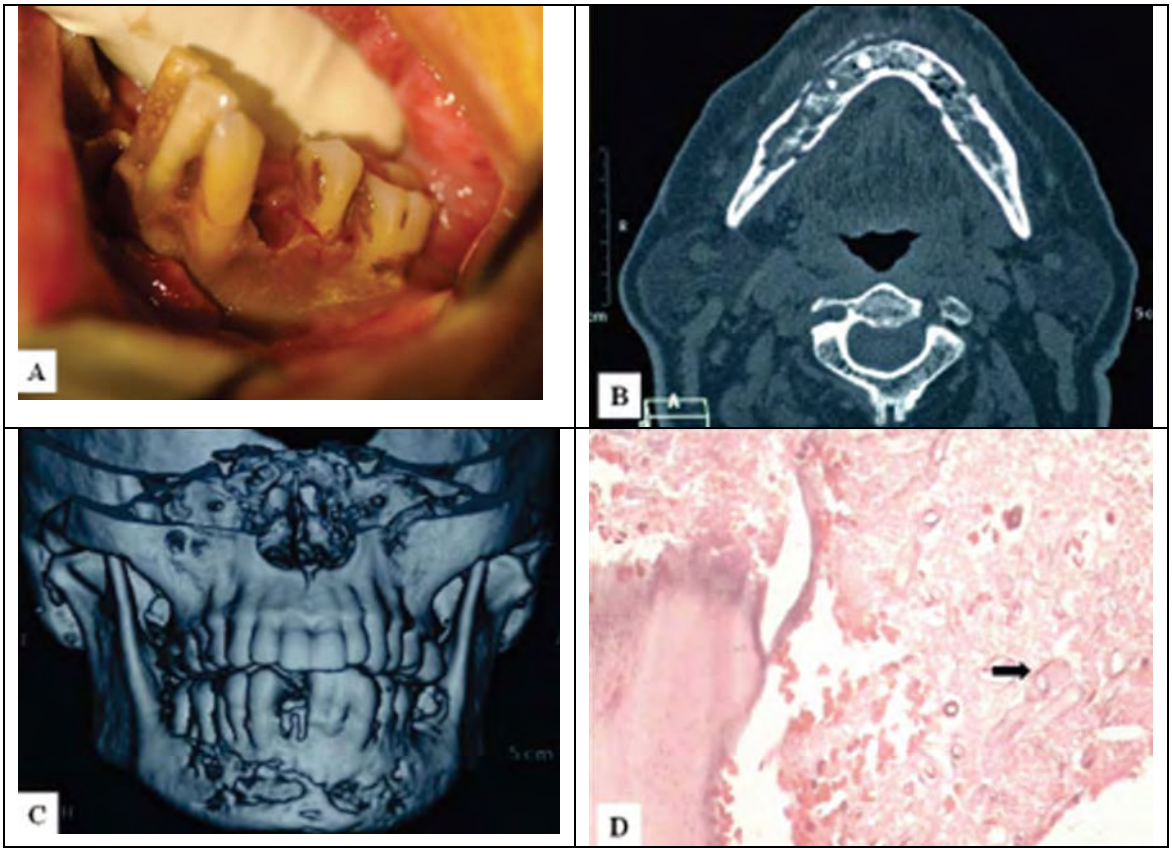
Our patient with uncontrolled diabetes mellitus and multiple systemic disorders, developed postextraction mucormycosis of mandible, and succumbed to multiple organ failure secondary to septicemia.

I. Introduction—Mucormycosis/ zygomycosis/phycomycosis

1. Among the opportunistic fungal infections, mucormycosis is most tissue-destructive and life-threatening infection
2. Most report in immunosuppression, uncontrolled DM or debilitating disease.
3. Rapid proliferation and invasion ensues in deeper tissues
4. Via inhalation, damaged or lacerated skin can be port of entry
5. Hyphae invade endothelium→thrombosis and infractions→tissue ischaemia→necrosis of affected structures
6. Six clinical types
   Rhinocerebral, GI, pulmonary (disseminated), burn wound, CNS, endocarditis and vascular
7. Mordality is high within several days to a few weeks

II. Report of a case

1. Our case: 68-year-old lady
2. C.C: pain and foul smelling discharge from a nonhealing socket on the left side of posterior region of mandible since 1.5 months.
3. P.I.: our patient had a history of surgical removal of left third molar 2months before visit.
4. PMH: DM, hypertension, ischaemic heart diaease, diabetic nephropathy, and sleep apnea syndrome. Insulin therapy for past 10 years.
5. Clinical examination
   - L't side of face: alert, oriented, febrile, pain, and parathesia of lower left lip. Submandibular LN palpable and tender.
   - O.E.: avascular denuded necrotic bone from 32 to 38region.
6. Insulin therapy, laborary investigation, cardiac color Dopplar
   Random blood glucose 205mg/dl, HbA1c6.1%, mitral valve prolapse with moderate mitral regurgitation.
7. CT scan
   Osteolytic lesion involving buccal and lingual cortices, loss of trabecular pattern of medullary bone and multiple small air loculi with evidence of involucrum and sequestrum formation from left angle crossing midline and involving the body on the R't side.



8. Impression: acute exacerbation of chronic osteomyelitis of mandible.
9. Surgery (consultation, extent, p'ts apprehensions)
   Broad surgical debridement of Md. →curettage and saucerization involved segment of mandible and total extraction of all teeth.
10. Insulin drip and empirical antimicrobial prophylactic tx
    (Piperacillin + Tazobactam 4.5gm 8 hourly)
11. OP finding: necrosis of cortex and medullary bone, and greenish discoloration of medullary portion of mandible→ pseudomonas infection
12. Necrotic tissue→histopathological exam
13. Post OP: 1st extubation
    2nd ~4th intermittent fever
    Blood and urine culture: not grow any organisms
    Swab from surgical site (Gram, Acid-fast, Fungal staining)
    few pus cells, plenty G(-) bacilli and few G(+) cocci, no other elements
    organism: Morganella morganii ssp. morganii
    Antimicrobial therapy →Meropenem 500mg 12hourly
    Teicoplanin 50mg 24 hourly
    5th altered sensorium, decreased urine output, hypotension.
    Metabolic acidosis, intubated, inotropic support.
    Septic shock with multiorgan failure, deteriorate
    7th histopathology report of Md. bone showed osteonecrosis and aseptate fungal hyphae with right angle branching consistent with mucormycosis
    Lyophilized Amphotericin B 50mg 24 hourly.
    8th septicemia with multiorgan failure

III. Discussion

1. Mucormycosis incorporates infections caused by zygomycetes, produce branching ribbon-like hyphae and reproduce by zygospores. Pathogen found in

fruits, soil,feces, and oral cavity,nasal passages,throat of healthy individuals.

2. *Mucorales:* subtype of zygomycetes, cause tissue necrosis, fatal infections to immunocompromised hosts.
3. Possible entry: ulceration, and extraction wound, when immunosompromised.
4. Characterized: rapid tissue necrosis from invasion of blood vessels, thrombosis
5. DM alters normal immunological response to any infection:
   Hyperglycemia→fungal proliferation
   Reduction in chemotaxis and phagocytic efficiency→acid-rich environment.
   Diabetic ketoacidotic p't: *Rhizopus oryzae* →ketoreductase→disrupts transferrin to bind iron→host defence↓→fungi growth
6. Management: early diagnosis, predisposing factors, surgical debridement systemic antifungal therapy, remove infected tissue.
7. Antifungal drugs have poor penetration, suggested Amphotericin B deoxycholate 1 to 1.5mg/kg/day, avoid long term use. azoles no activity.
   Posaconazole 800mg/day- potential antifungal activity.
8. Raised oxygen pressure(HBO tx): capability of neutrophils, oxidative action of Amphotericin B
   100% oxygen, 90~120 minutes, 2~2.5atm, 1~2daily→40tx
   Site and host factors primary determinants.
9. No serological tests can help
10. Biopsy sample(-), normal image, no immunosuppression->stop antifungal tx

IV. Summary

1. Any immunocompromised individual suspected osteomyelitis should investigated for fungal infectons
2. Early diagnosis and multimodality treatment.

題號	題目
1	Which clinical form of zygomycosis is the most relevant to oral health care provider? (A) Gastrointestinal (B) Rhinocerebral (C) Pulmonary (D) Endocarditis
答案(B)	出處：ORAL AND MAXILLOFACIAL PATHOLOGY P.232 Ch 6 FUNGAL AND PROTOZOAL DISEASES zygomycosis
題號	題目
2	Which description is not often related to zygomycosis (A) Zygomycosis is noted especially in insulin-dependent diabetics and are ketoacidotic (B) The extensive tissue destruction attributable to the preference of the fungi for invasion of small blood vessels (C) Sulfur granules in in infections other than zygomycosis are so rare that their demonstration supports the diagnosis (D) Patients who are taking deferoxamine are also increased risk for developing zygomycosis
答案(C)	出處：ORAL AND MAXILLOFACIAL PATHOLOGY (C) P.204 Actinomycosis; (A)(B)(D)P.232~P.233