Massive Gas-forming Gangrene in a Diabetic Foot Infection

Shigeo Kono*†, Reiko Nakagawachi¹, Jun Arata² and Benjamin A Lipsky³

¹WHO-collaborating Centre for Diabetes, National Hospital Organization, Kyoto Medical Center, Kyoto, Japan
²Department of Plastic Surgery, National Hospital Organization, Kyoto Medical Center, Kyoto, Japan
³University of Washington, Seattle, Washington, USA, University of Geneva, Switzerland, and University of Oxford, Oxford, UK

Clinical Image

This 63-year-old woman with type 1 diabetes on hemodialysis burned her heel three months previously. Despite surgical debridement and topical silver sulfadiazine the wound worsened, with the development of purulent secretions and fever to 39°C, leukocytosis (35,900/mL), an elevated c-reactive protein (420 mg/L), but with a low creatine kinase (20 IU/L). Repeated aerobic and anaerobic cultures of wound tissue grew only Streptococcus agalactiae, Staphylococcus aureus and corynebacteria (unspeciated). She was treated with intravenous meropenem and vancomycin, but infection progressed and she was transferred to our hospital.

Examination of her foot revealed erythema, warmth, purulence, crepitus, and wet gangrene (Figures 1 and 2). Examination of the affected foot revealed sensory peripheral neuropathy but no circulatory impairment. Plain radiographs showed massive gas in the entire foot (Figure 3). Computed tomography confirmed extensive gas, making the plantar aponeurosis clearly visible (Figure 4).

She underwent immediate aggressive operative wound debridement, and then repeated bedside debridement. Repeat bacterial cultures of wound tissue grew only Streptococcus agalactiae and coagulase-negative Staphylococcus. Clindamycin was added to the meropenem and vancomycin therapy. Over 6 months her infection resolved and the foot healed without amputation (Figure 5).

Gas-forming gangrene is an uncommon, but potentially catastrophic, clinical presentation of diabetic foot infection. It is often misdiagnosed as clostridial gas gangrene, leading to rapid, but potentially unnecessary amputation before definitive diagnosis. While gas-forming infections...
Fox's clonal location, and MRSA may not be present. Patients often have a history of chronic osteomyelitis, diabetes, and other underlying comorbidities. A detailed history and thorough physical examination are crucial for accurate diagnosis.

**Treatment**

Successful treatment of MRSA osteomyelitis requires a multidisciplinary approach, including surgical debridement, appropriate antibiotic therapy, and management of comorbidities. In our patient, the combination of surgical debridement, antibiotic therapy, and aggressive management of diabetes led to a successful outcome.

**References**


**Figure 5:**

A radiograph showing a bone lesion.

Submit your next manuscript and get advantages of OMICS Group submissions

- **Unique features:**
  - User friendly/feasible website-translation of your paper to 50 world's leading languages
  - Audio Version of published paper
  - Digital articles to share and explore

- **Special features:**
  - 300 Open Access Journals
  - 25,000 editorial team
  - 21 days rapid review process
  - Quality and quick editorial, review and publication processing
  - Indexing at PubMed (partial), Scopus, IBR/IBZ/IBR/IBS, Index Copernicus and Google Scholar etc
  - Sharing Option: Social Networking Enabled
  - Authors, Reviewers and Editors rewarded with online Scientific Credits
  - Better discount for your subsequent articles

Submit your manuscript at: www.omicsonline.org/submission/