Swelling of Face

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A 40-year-old woman who has worked in a wool factory came to the emergency room with severe swelling of her face and eyelids since two days before. She had also difficulty in swallowing. She was hospitalized and appropriate treatment was started. On the third day of hospitalization, although she got generally better, she developed ulceration of her left eyelid. The treatment was continued and she was discharged in good health after seven days of treatment.

What’s your diagnosis?
**Anthrax** is an acute infectious disease. It is a lethal but rare disease of animals and humans. The causative agent for anthrax is *Bacillus anthracis* which is an anaerobic spore-forming Gram-positive rod. The spore which causes infection is highly resistant to dryness and heat and can be found in soil all over the world.

The disease is well controlled in developed countries through widespread vaccination of animals and burning carcass of infected animals.

The organism enters the body through the breaks in the skin, gastrointestinal tract and the respiratory system. The latter which has been used as a mean for bioterrorism results in the most dangerous form of the disease—the inhalational anthrax.

The most common form of the disease, however, is the cutaneous anthrax which is usually an occupation disease typically seen in young men working in wool or leather factories. Nevertheless, in many developing countries where people have close contact with sheep and cattle in rural areas, the disease is seen in both sexes and all age groups.

**Cutaneous Anthrax**

*Anthrax* “lethal toxin” and “edema toxin” are the major virulence factors of the organism. The lethal factor is a protein toxin which leads to derangement of a major cell signaling pathway, while the edema toxin would cause edema at the site of infection, particularly in areas with loose tissue (like eyelid). In the cutaneous form, some pruritic vesicular lesions appear over the entry site, within 48 hours. If left untreated, the vesicles turn into painless ulcers and eschars within one week.

The gold standard test for the diagnosis of anthrax is culture; the organism can grow easily in ordinary culture media but appropriate cautions for respiratory transmissions should be taken. Other diagnostic tests include biochemical tests, skin test, polymerase chain reaction (PCR), and enzyme-linked immunosorbent assay (ELISA).

*B. anthracis* was highly sensitive to penicillin in the past. However, ciprofloxacin is the drug of choice for treatment of anthrax at the present time. Timely diagnosis and appropriate treatment of the disease are associated with a good outcome.

**References**