Case Report

J Chin Med Assoc
2004;67:51-53

Aeromonas Hydrophila Orbital Cellulitis in a Patient with Myelodysplastic Syndrome

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Orbital cellulitis caused by *Aeromonas hydrophila* developed in a 73-year-old male with a history of myelodysplastic syndrome. He was admitted because of fever, general malaise, pain as well as periorbital swelling in the right eye. Four days later, a yellowish pustule with purulent material was noted over right lower eyelid. *Aeromonas hydrophila* was isolated from the discharge. After administering intravenous cefuroxime 1,500 mg every 8 hours and topical ofloxacin eye oint, his symptoms subsided gradually. We present the first known case of orbital cellulitis from *Aeromonas hydrophila* in a patient with myelodysplastic syndrome. In patients with myelodysplastic syndrome, *Aeromonas hydrophila* should be listed as an important pathogen in any soft tissue infection including eyelid infection. Culture and adequate antimicrobial therapy are recommended, because rapid worsening may result in orbital cellulitis or even septicemia in patients with suppressed immune system.

Key Words
aeromonas hydrophila;
myelodysplastic syndrome;
orbital cellulitis

Aeromonas hydrophila (*A. hydrophila*) is a gram-negative anaerobic bacillus commonly found in lake water, streams, ponds, ditches, and swimming pools.[1] In healthy people, the most common clinical manifestations attributed to *A. hydrophila* are diarrhea and soft tissue infections. This organism has also been reported to cause meningitis, otitis media, myonecrosis, endocarditis, peritonitis, cholecystitis or septicemia,[2] especially in immunocompromised patients and those with underlying liver disease. Presented herein is a case of hordeolum which progressed to orbital cellulitis caused by *A. hydrophila* in a patient with myelodysplastic syndrome (MDS).

CASE REPORT

A 73-year-old man was referred to our center with progressive right periorbital swelling, fever, chills and general malaise. One week before admission, he had experienced progressive swelling of the right lower lid, and was treated with topical and oral antibiotics with a clinical diagnosis of hordeolum with preseptal cellulitis. No other medical problem or history was elicited at presentation except MDS proved by bone marrow biopsy with refractory anemia with ring sideroblasts subtype noted 1 year ago. He received transfusion therapy of packed red blood cells for supportive treatment. He denied any history of alcohol drinking, contamination with water or soil, fishing, swimming and diving.

His temperature was 39.5 °C, pulse was 90 beats/min, respiration rates were 20/min, and systolic blood pressure was 100 mmHg. On examination, the bestcorrected visual acuity was 6/8.6 in both eyes. Careful inspection showed mild proptosis, periorbital swelling, conjunctival chemosis and mild anterior uveitis over his right eye. A tender mass was found in the right lower eyelid and the skin was friable and erythematous swelling. In addition, the patient developed pain on eye movements, and mild limitation in all directions of gaze. Pupil testing, intraocular pressure and color vision examination was normal. Results from the remainder of the eye examination were noncontributory. The patient's white blood cell count was 3,800/cumm with 86% lympho-

Received: March 26, 2003.
Accepted: September 2, 2003.

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cytes, 10% monocytes, and 4% atypical lymphocytes. Hemoglobin was 8.2 g/dL, and the hematocrit 24.2%. Platelet count was 53,000/cumm. Results of the glucose, electrolyte, BUN, creatinine, and liver function test were all normal. Computed tomography (CT) demonstrated preseptal soft tissue swelling with some infiltration of the infraorbital and lateral portion of right orbit, which was compatible with an orbital cellulitis (Fig. 1).

The patient was initially given intravenous oxacillin 2 g every 6 hours after blood culture was performed. Four days later, a yellowish pustule with purulent material was noted over his right lower eyelid (Fig. 2). The antibiotics were changed to topical ofloxacin eye ointment and intravenous cefuroxime, 1,500 mg every 8 hours, after culture from the purulent material yielded growth of *A. hydrophila*. Findings from blood cultures were negative. After 14 days of intravenous antibiotics therapy, the patient's symptoms gradually improved and he was discharged with oral antibiotics.

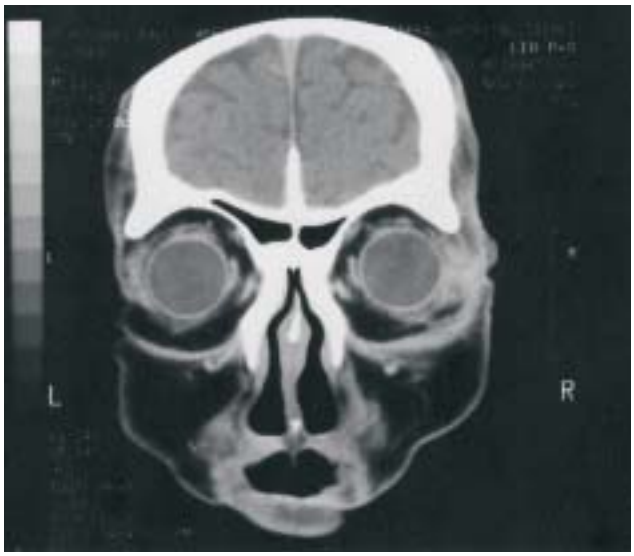

Fig. 1. CT scan showed preseptal soft tissue swelling with infiltration to infraorbital and lateral portion of right eye.

Fig. 2. Four days after intravenous antibiotics, a yellowish pustule with purulent material was noted over right lower eyelid.

DISCUSSION

MDS is a group of disorders with characteristic abnormalities of peripheral blood and bone marrow morphology as well as impaired bone marrow function which can transform into acute myeloid leukemia.[3] We described an MDS patient who developed *A. hydrophila* orbital cellulitis from a hordeolum of eyelid. Most patients with hordeolum may develop preseptal cellulites without orbital extension. Due to the orbital septum, limiting spread to the orbit. Paranasal sinus disease is the commonest predisposing cause of orbital cellulites, especially in the pediatric age group. The commonest species isolated were Staphylococci and Streptococci.[4] *A. hydrophila* can be cultured from sewage, soil, vegetables, and other body fluids such as feces and wound. This organism can be responsible for opportunistic infections in immunocompromised patients who have malignant hematologic disease, nonhematologic malignancies, and hepatobiliary disease such as liver cirrhosis, hepatitis, liver abscess and biliary tract obstruction.[5,6] Predisposing factors have been reported to include those such as diabetes, alcoholism, severe malnutrition, renal failure and severe peripheral vascular disease.[7,8] Our patient denied any history of swimming, diving and contamination with water or soil. He was noted with normal liver and renal function. Soft tissue infection with *A. hydrophila* is usually posttraumatic with a history of contamination with water or soil.[9] Although their clinical presentation is non-specific, any early eyelid infection in patients with MDS should be carefully monitored. Because rapid worsening may results in orbital cellulitis or even septicemia in people with suppressed immune system. Mortality rate of septicemia due to *A. hydrophila* has been reported to be as high as 56% to 75%.[10-12] Aeromonas infection in patients with hematological ma-

lignancy is frequently reported. Aeromonas bacteremia can cause a rapid fatal outcome and should be considered an important pathogen for septicemia in patients with liver cirrosis or neoplasm.[6] *Aeromonas* spp could be treated with trimethoprim-sulfamethoxazole, aminoglycosides and cephalosporins. They are resistant to penicillin, ticarcillin, ampicillin and carbenicillin.[13]

Most of *A. hydrophila* soft tissue infections were reported to occur below the neck. This is the first case report of orbital cellulitis caused by *A. hydrophila* without any history of trauma or contamination with soil or water in the English literature. It further emphasizes the fact that when the clinical presentation of hordeolum is atypical in patients with suppressed immune system, aggressive and prompt treatment is recommended.

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