รายงานผู้ป่วย

Hemophilus influenzae cellulitis of the leg : a case report

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Hemophilus influenzae type b cellulitis of the extremities is a rare infection, mainly diagnosed in the age group of 2-months to 3-years. We report a 9-month-old girl suffering from cellulitis of the right leg associated with H. influenzae bacteremia who subsequently developed meningitis. One must include H. influenzae type b in the differential diagnosis of cellulitis of the extremities in this age group, with rapid onset of fever, constitutional symptoms and high white blood count. One should also specify the possibility on gram stain and all cultures so that appropiate identification of the organism and proper management can be made.

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Hemophilus influenzae เป็นสาเหตุที่พบน้อยมากที่ทำให้เกิดการอักเสบของผิวหนังบริเวณแขนขา และส่วนใหญ่มักเกิดในเด็กอายุ 2 เดือน ถึง 3 ปี จากการทบทวนวารสารในประเทศไม่พบรายงานของการติดเชื้อแบคทีเรียชนิดนี้ของผิวหนังบริเวณแขนขาในเด็กไทยมาก่อน บทความนี้เป็นรายงานผู้ป่วยเด็ก 1 ราย อายุ 9 เดือน ที่มีการติดเชื้อของผิวหนังบริเวณขาขวา พร้อมกับมีการติดเชื้อ H. influenzae ในกระแสเลือดร่วมด้วย ซึ่งต่อมาการติดเชื้อได้ลุกลาม และทำให้เกิดอาการเยื่อหุ้มสมองอักเสบ ในผู้ป่วยเด็กอายุน้อยที่มีอาการของการติดเชื้อบริเวณแขนขา โดยอาจมีอาการหวัดนำมาก่อนพร้อมกับมีไข้สูง และการตรวจเลือดพบเม็ดเลือดขาวจำนวนมาก แพทย์ควรจะคำนึงถึงเชื้อ H. influenzae ด้วยว่าอาจเป็นสาเหตุหนึ่ง การย้อมสีแกรมจากบริเวณที่อักเสบ และการเพาะเชื้อจากสิ่งส่งตรวจต่าง ๆ จะช่วยนำไปสู่การวินิจฉัยและการรักษาที่ถูกต้องต่อไป

Cellulitis is a common infection of the skin and subcutaneous tissue in children. Etiologic agents are best determined by history, clinical appearance, and microbiologic confirmation. Although staphylococci and streptococci are the most commonly isolated microorganism, Hemophilus influenzae type b cellulitis affecting children under 3 years old is not as rare as generally thought. H.influenzae type b cellulitis usually affects the face or periorbital area and less commonly the extremities.[1-4] We report a child with cellulitis of the right leg caused by H.influenzae type b who subsequently developed meningitis; a case like this has not been reported in Thai children to our knowledge.

Case report

A 9-month old girl was admitted to the Department of Pediatrics, Chulalongkorn hospital because of fever, convulsion and cellulitis of right leg. One day earlier she had been seen in the outpatient clinic because of low grade fever, cellulitis, and was sent home with oral cloxacillin. Six days before admission, she had rhinorrhea and low grade fever. Her mother noticed a red spot over the child's right leg which progressed to erythema and swelling of right leg. There was no previous history of trauma.

On admission the child appeared toxic and irritable but had no stiff neck. The temperature was 39.7°C. There was erythema, induration, warm and tender skin over the lateral surface of right leg which extended from the area below right knee to area above the right ankle. The range of motion of the right knee and ankle were normal. The remainder of the physical examination, including the tympanic membrane was unremarkable.

Initial laboratory data revealed the following values : Hemoglobin 9.3 gm% WBC 25800/c.mm, PMN 73%, M 6%, L 21%,adequate platelet. Urinalysis was normal. The cerebrospinal fluid (CSF) examination was normal. Roentgenograms of the chest and right leg were normal. Hemoculture and CSF culture were pending.

Therapy with intravenous cloxacillin (100 mg/kg/day) was initiated during the next four days, the cellulitis was slightly improved but the patient continued to be febrile and had stiff neck and positive Brudzinski's sign. Second CSF examination on the fifth day of hospitalization was normal except CSF sugar of less than 25 mg%; blood sugar was 110 mg%. Lumbar puncture was repeated on the following day and CSF examination revealed WBC of 270/c.mm. PMN 30%, M 70%, protein 82 mg%, sugar of less than 30 mg%, blood sugar was 110 mg%. The dosage of cloxacillin was increased to 200 mg/kg/day and intravenous chloramphenicol 100 mg/kg/day was added to the treatment. Hemoculture obtained on admission yielded H.influenzae type b, beta lactamase negative, sensitive to ampicillin and chloramphenicol. The culture of the first CSF was sterile, but the second and third CSF cultures grew H.influenzae type b. beta lactamase negative, sensitive to ampicillin and chloramphenicol. The throat culture was normal. Counterimmunoelectrophoresis of the third CSF was positive for H.influenzae type b. Cloxacillin was discontinued on the eleventh hospital day and intravenous ampicillin (300 mg/kg/day) was instituted. Therapy was continued with intravenous ampicillin and chloramphenicol, and cellulitis gradually resolved and fever subsided on the twelveth day of chloramphenicol treatment. Antibiotics were continued for another week after she was afebrile.

Discussion

The first report of H.influenzae cellulitis appeared in 1953. Subsequent reports[2,3,4,6] delineated this condition. A typical patient is a child of 6-36 months of age, acutely ill with high fever, leukocytosis, a bluish or purplish-red discoloration of the affected area found in approximately 45% of the cases, with two-thirds of the lesions being localized over the face or periorbital area and positive blood culture in approximately 82% of the cases.[1] The pathogenesis responsible for localization of the cellulitis remains poorly understood. Rapkin and Bautista[4] noted the erythematous buccal mucosa and the frequency of the cellulitis affecting the cheek, suggesting the possibility of a direct spread of H.influenzae from the oral cavity. Periorbital cellulitis may result from local extension from the ethmoidal sinuses. In 1976 Nelson and Ginsburg[7] called attention to the relationship between H.influfnzae, type b buccal cellulitis and otitis media and suggested that the primary event in patients with H.influenzae buccal cellulitis was otitis media. However, the frequent recovery of the etiologic agent from the blood and the more distant sites of the cellulitis, such as arm, hand, leg or foot, strongly favor the hematogenous spread of the organism from the respiratory tract. We believe this observation applied to the case of our patient. The importance of recognizing the entity is, of course, related to the accompanied bacteremia which may lead to osteomyelitis, pyoarthrosis or meningitis[1,2,4] which is the most severe sequelae of H.influenzae infection.[8] Baker and Bausher[9] reported that six out of sixty-seven cases of H.influenzae facial cellulitis(9%) developed bacterial meningitis in which only two patients had clinical and laboratory evidence of purulent meningitis at presentation. We had the same report for our patient.

The etiologic agents causing cellulitis in young children can not be determined solely on clinical ground. Violaceous discoloration in facial cellulitis may be caused by streptococcus pneumoniae.[10,11] Sokol and Bowden reported an erysipelas-like scalp cellulitis due to H.influenzae type b in an 8-month-old boy. Definite diagnosis can be made from blood cultures, lumber puncture or needle aspiration[13] As for our case, H.influenzae cellulitis was not considered as an etiologic possibility due to the less common site of involvement and absence of violaceous color attributed to H. influenzae type b cellulitis. Lolekha and Isaraprasart[14] reviewed 36 cases of periorbital and orbital cellulitis in Thai children but H.influenzae was not found to be the etiologic organism. Although H. influenzae cellulitis may not be a rare illness, unless the blood culture and or needle aspiration are obtained, one cannot make the diagnosis. We conclude that cellulitis in a child less than 3 years of age with rapid onset of fever, constitutional symptoms and a high white blood cell count with a leftward shift, may be due to H.influenzae type b. Therefore, blood cultures, needle aspiration and lumbar puncture, if indicated, should be performed before initiating appropriate therapy that should include drugs effective against H.influenzae type b.

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