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Fine-needle aspiration to improve diagnosis of melioidosis of the head and neck in children: a study from Sarawak, Malaysia

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Abstract

Background: Melioidosis, the infection caused by *Burkholderia pseudomallei*, is associated with a high case fatality rate, due in part to difficulties in clinical recognition and diagnostic confirmation of the disease. Although head and neck involvement is common in children, specific disease manifestations differ between geographic regions. The aim of this study was to provide a detailed description of melioidosis of the head and neck among children in Sarawak, Malaysia, and determine if fine-needle aspiration of suspected head or neck lesions could improve melioidosis diagnosis.

Methods: We conducted a retrospective descriptive study of all children aged < 12 years with culture-confirmed melioidosis presenting with head and neck manifestations and admitted to Bintulu Hospital in Sarawak, Malaysia, from January 2011 until December 2020. Fine-needle aspiration of head and neck lesions suspected to be due to melioidosis with inoculation in blood culture bottles (FNA + BCB) was used from the beginning of 2016.

Results: Of 34 children with culture-confirmed melioidosis, 20 (59%) had an infection involving one or more sites in the head and neck. Of these, 17 (85%) were diagnosed in or after 2016. Cervical lymph nodes were the most common organ or site affected, involved in 19 (95%) children. Clinical presentations of *B. pseudomallei* lymph node infections were highly variable. Five (25%) children had salivary gland involvement. Lacrimal gland involvement (dacryocystitis) and skin or soft tissue infection (scalp abscess) were less frequent. *B. pseudomallei* was isolated from the head or neck using FNA + BCB in 15 (75%) children and by standard culture methods of direct plating of pus on agar following incision and drainage in only 2 (10%) children. *B. pseudomallei* was isolated from non-head or neck specimens or blood in 3 (15%) children.

Conclusions: Manifestations of pediatric head and neck melioidosis in Sarawak, Malaysia, differ from those of other regions. Fine-needle aspiration, mainly of affected cervical lymph nodes, facilitates *B. pseudomallei* detection and enables confirmation of melioidosis infections.

Keywords: Melioidosis, Children, Head and neck, Lymph nodes, Diagnosis, Malaysia

Background

Melioidosis, the infection caused by the environmental saprophyte *Burkholderia pseudomallei*, is associated with a high case fatality rate [1, 2]. This is due partly to the extensive intrinsic antibiotic resistance of the organism

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