CASE REPORT

MELIOIDOSIS IN A SPLENECTOMIZED BOY WITH β - THALASSEMIA MAJOR

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The term melioidosis refers to all infections caused by the organism *Pseudomonas pseudomallei,* which is a gram negative bipolar staining mobile bacillus. It is endemic in countries near the equator *ie* in Africa, the Indian subcontinent, Central and South America, Southeast Asia and Northern Australia. It occurs sporadically in North America and Europe (Dance, 1952). *P. pseudomallei* is found free-living in the soil and surface water of gardens, monsoon drains, paddy-fields and estates in tropical countries (Leelarasamee and Bovornkitti, 1989). The organism tends to infect adults who work in contact with water and soil or who have chronic debilitating conditions *eg* diabetes mellitus, malnutrition or alcoholism (Rode and Webling, 1988). Reports about children are uncommon (Rode and Webling, 1988; Puthucherry *et al,* 1981). We present here a case of melioidosis in a 15 year old Malay boy with β - thalassemia major.

MY is a 15 year old Malay boy who has β - thlassemia major and is on regular monthly blood transfusions plus daily desferioxamine. He underwent a splenectomy in 1988 because of hypersplenism and was on penicillin prophylaxis.

In November 1991, he presented with an abcess in the left lumbar region measuring 15 × 12 cm. There was a history of his having backed onto the corner of a table one month before. There were no constitutional symptoms and except for pallor and a hepatomegaly of 4 cm, the physical examination was normal.

The abcess was drained and the culture grew *P. pseudomallei* sensitive to cefuroxime, cefoperazone, cefotaxime, ceftazidime, tetracycline and piperacillin. Blood cultures were negative. His hemoglobin was 7.5 g/dl and the white cell count was 23.3 × 10^9/1. His serum ferritin was 5,900 ng/ml and the fasting blood sugar was 5.4 mmol/l. The serum immunoglobulins (IgA, IgG, IgM) and C_3/C_4 levels were normal as were the T and B cell enumeration and lymphocyte transformation tests. There was, however, a reduction of phagocytic function with a reduction in the chemiluminescence for opsonized zymosan and opsonized *Staphylococcus aureus* by 24% and 28%, respectively. The anti-HIV antibody was negative.

He was commenced on IV ceftazidime (120 mg/kg/day) for 4 weeks after which he was treated with oral cotrimoxazole. Unfortunately he developed a generalized erythematous macular-papular rash with cotrimoxazole. He was then put on tetracycline (1 g/day) for 2 months after which his wound healed completely.

Malaysia being a tropical country, is endemic for melioidosis. *Pseudomonas pseudomallei* has been isolated from monsoon drains, estates soil, garden soil and paddy fields (Leelarasamee and Bovornkitti, 1989). It is not clear how our patient acquired the infection as he was fully clothed at the time of the minor trauma. There is no history of him using soil or water to treat the affected area. Nearly half of the patients in the series of Rode and Webling (1988) had no history of a penetrating wound.

Clinically, melioidosis may be asymptomatic in the majority. A minority of patients may have (a) septicemia of abrupt onset, (b) localized infection, (c) prolonged fever with or without an infectious site. Our patient would fall into the category of a localized infection without septicemia.

To our knowledge, this is the only case reported of a patient with β - thalassemia major who developed melioidosis. Jayanetra *et al* (1974),

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did report in 1974 a 41 year old Thai male with hemoglobin E disease who had melioidosis.

Pseudomonas pseudomallei produces a siderophore which is a high affinity binding compound and the growth of this bacteria *in vitro* is promoted by the presence of iron (Yang *et al,* 1991). our patient had an excess of iron because of the repeated blood transfusions and thus it is possible that he may be predisposed to melioidosis. However, it must be noted that he did not have a positive blood culture and that there is a scarcity of cases reported who also have high serum ferritin levels. As such, it remains to be seen whether the presence of excess iron *in vivo* does promote the growth of *P. pseudomallei.*

Ceftazidime was used in the treatment of melioidosis in this case as it was shown to be the most effective agent against *P. pseudomallei* (White *et al,* 1989). The duration of treatment was chosen as 4 weeks followed by a further 2 month course of oral tetracycline as follow-up treatment. This is generally accepted as necessary to prevent relapses which can occur in infections by *Pseudomonas pseudomallei* (Leelarasamee and Bovornkitti, 1989).

In conclusion, melioidosis is endemic in Malaysia and needs to be kept in mind in all patients who present with a septicemic illness or abcesses.

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