

the appearance of swelling on the left side of the neck.

Apart from enlargement of lymph nodes this patient also had persistent fever and poor feeding which are the indicators of progressive disease and poor response.

We agree with the authors that, presence of granuloma indicates good hypersensitivity and hence T-cell function. Patients with leukocyte and monocyte deficiency associated disseminated BCG infection may show miliary granuloma composed of mononuclear, plasma and giant cells(2). These children will have normal or increased levels of immunoglobulins and no lymphopenia. Our case might be one such and categorization of immune deficiency was not possible with available facilities. Disseminated BCG lesion can also follow vaccination soon after birth(3), as already mentioned in the report.

In spite of such rare complication due to BCG vaccination, we also strongly feel BCG vaccination should be supported whole heartedly.

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Generalized BCG Tuberculosis

We read with interest the letter "Generalized BCG tuberculosis" by Dhaded *et al.*(1) and would like to make the following observations.

That disseminated form of the disease due to BCG vaccination is extremely rare and is usually associated with immune system abnormalities. A thorough contact survey, detailed investigations of the mother and liver biopsy would have proved fruitful in pointing at a source of infection.

Even with BCG dissemination, usually only the axillary lymph nodes are involved.

Unless BCG adenopathy in the axilla is looked for, the relationship' of lymphadenopathy to vaccine may not be established(2).

Unless BCG organisms are identified in the different sites involved(3), the possibility of disseminated disease being due to BCG vaccine remains hypothetical.

A paradox is also apparent in the case report in that while there was no evidence of immune deficiency in the child the lack of response to anti-tubercular therapy has still been explained by an underlying immune-deficiency.

The occurrence of a disseminated form of disease in a recent BCG recipient can

be coincidental and not necessarily have a causal relationship. Hence, a thorough attempt should have been made to exclude congenital infection or an acquired disseminated form of the disease before labelling it as BCG induced.

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Reply

As already mentioned in the report there was no evidence of close contact with an open case of tuberculosis.

BCG given high on the tip of shoulder gives rise to enlargement of infra-clavicular nodes or those in the anterior triangle of the neck(1). In this patient, BCG was given just 2.5 cm below the acromion tip, indicating a higher site than the routine.

Identification of BCG organisms requires special techniques available only in reference laboratory. All possible investigations were done to arrive at diagnosis and it may not be possible to follow gold standard in every case due to lack of facilities.

Patients with leukocyte and monocyte deficiencies may also show miliary granuloma composed of mononuclear, plasma

and giant cells(2); therefore, presence of granuloma does not rule out immunodeficiency. Chemotherapy in such children against mycobacteria or other organisms will have a transient or little effect(2). This patient's immune deficiency could not be categorized with available facilities.

Taking into account the course of events after BCG vaccination, absence of source of contact and lack of response to treatment in the form of progressive lymph node enlargement, persistent fever, and poor feeding, we feel it is a case of generalized BCG tuberculosis. Categorization of immune deficiency and identification of BCG organisms was not possible due to non availability of laboratory services.

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