

Unexpected BCG Osteomyelitis of Child's Wrist - A Case Report

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INTRODUCTION:

Bacillus Calmette-Guérin (BCG) vaccination is given to prevent spread of TB infection. It is made from lived attenuated Mycobacterium Bovis. Adverse effect of BCG vaccination occurs in 3.3% of the population, includes regional lymphadenitis, injection site abscess and keloid reaction. However, another more uncommon complication is osteomyelitis.

BCG osteomyelitis often begins with insidious, nonspecific symptoms and may result in delayed medical consultation. Although it is rare, TB osteomyelitis can cause great morbidity and impact to child long life. We presented a case of distal radius TB osteomyelitis caused by Mycobacterium bovis BCG.

REPORT:

A 2 years old boy presented with swelling and pain over left wrist for 2weeks. Otherwise, parent denies any trauma. No constitutional symptoms and no history of TB contact. Child was immunized up to age. Subsequently the boy was referred for orthopedic attention and admitted for operative intervention. Tissue and bone samples were taken for culture, biopsy, and HPE.

Plain radiograph illustrates mottled lucency of the distal end radius and cystic degenerative changes within. The child underwent wound debridement of right radius, bone curettage. Biopsy taken shows Mycobacterium bovis BCG infection.



Figure 1: Xray shows lucency and cystic degeneration at distal radius

KEPUTUSAN UJIAN TIBI				
Spesimen	Ujian	Keputusan Ujian	Pegawai Pengesah	Tarikh Pengesahan
Tissue Biopsy	Identification Test	No Rujukan Ujian : MTB/377/23 Keputusan Ujian : Mycobacterium tuberculosis complex Catatan : Nil	[Redacted] Pegawai Sains (mikrobiologi) C41	19-01-2023
Tissue Biopsy	Resubculture	No Rujukan Ujian : B/23/288 Keputusan Ujian : Delay due to insufficient colony. Re-subculture done and this process may take additional 6-8 weeks. Catatan : INSUFFICIENT COLONIES (DONE 25/1/2023)	Auto Verify Pegawai Sains (mikrobiologi) C41	25-01-2023
Tissue Biopsy	M.tuberculosis complex speciation	No Rujukan Ujian : 2.01/23 Keputusan Ujian : Mycobacterium bovis BCG Catatan : Nil	[Redacted] Pegawai Sains (mikrobiologi) C44	27-01-2023

Figure 2: Biopsy Report.

Skeletal complication post BCG vaccination is rare, and even more uncommon among pediatrics age. Gold standard to diagnose is tissue biopsy and culture from bone tissue. Current practice of treatments is a 2-month induction phase of Rifampicin, Isoniazid, Pyrazinamide, Ethambutol. Followed by maintenance phase of Rifampicin and Isoniazid for 1 year.

CONCLUSION:

BCG vaccination causing TB osteomyelitis is very uncommon. High index of suspicious must be considered, and early biopsy and appropriate microbiology testing can avoid diagnostic delay and reduce morbidity.

REFERENCES:

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