Axillary Lymph Node in Extra-Ocular Retinoblastoma – Benign or Malignant?

Abstract

A 1-year-old male child presented with whitish discoloration of pupil of the left eye and swelling over the left axilla. A contrast-enhanced magnetic resonance imaging of the brain and orbits performed revealed left eye extra-ocular retinoblastoma. 18F-fluorodeoxyglucose positron emission tomography/computed tomography scan was done in this child as a part of baseline staging of retinoblastoma in an ongoing research project. The scan revealed left eye extra-ocular retinoblastoma along with calcified left axillary level I lymph node.

Keywords: *Bacille Calmette-Guérin lymphadenitis, calcified axillary lymphadenopathy, extra-ocular retinoblastoma*

Shubha Gadde Ravindra, Sambit Sagar, Shilpa Khanna Arora[1], Rachna Seth[1], Neiwete Lomi[2], Rakesh Kumar

Departments of Nuclear Medicine and PET-CT, [1]Paediatric Oncology and [2]Ophthalmology, All India Institute of Medical Sciences, New Delhi, India

A 1-year-old male child with left eye extraocular retinoblastoma and left axillary swelling was referred to obtain a 18F-fluorodeoxyglucose positron emission tomography/computed tomography (F-18 FDG PET/CT) scan for baseline staging as a part of ongoing research project. The scan was performed 45 min following intravenous injection of F-18 FDG.

The maximum intensity projection (a) image shows the calcified left axillary lymph node. The axial CT (b) and axial PET/CT fused (c) images show left eye extra ocular retinoblastoma with internal calcifications (white solid arrow and white dotted arrow, respectively). The axial CT (d) and axial PET/CT fused (e) images highlight the calcified left axillary lymph node (white solid arrow and white dotted arrow, respectively) [Figure 1]. The axillary lymph node was thought to be metastatic from the primary extraocular retinoblastoma.

However, a careful review of the history revealed that the axillary swelling in the child developed following Bacille Calmette-Guérin (BCG) vaccination.

The differential diagnosis of axillary lymph node calcification in young children includes malignancies, granulomatous diseases such as tuberculosis, histoplasmosis, and sarcoidosis and occasionally following intradermal BCG administration. The calcification as a result of the vaccine may expand over the first year of life and may subsequently regress or may remain stable in size without clinical consequence.[1-3]

BCG vaccination is considered as a safe procedure to provide protection against tuberculosis.[4] It contains live attenuated *Mycobacterium bovis* as its key component.[2] It is the only vaccine currently in use for the prevention of tuberculosis in humans.[5] BCG vaccine has a relatively low risk of adverse reactions and is generally considered a safe vaccine to administer. However, BCG lymphadenitis is the most common complication that may arise following vaccination. Ipsilateral axillary lymph nodes are the most common sites of involvement, although supraclavicular or cervical lymph nodes may occasionally be enlarged. Almost all cases of BCG lymphadenitis arise within 24 months of vaccination. BCG lymphadenitis might either be nonsuppurative that resolves spontaneously without any sequelae, or suppurative where the affected lymph nodes enlarge progressively with redness and edema of the overlying skin, which if left untreated, may result in sinus or scar formation. Nonsuppurative lymphadenitis is managed conservatively, whereas suppurative lymphadenitis may require needle aspiration or surgical excision.[6-8] Through this case, we would like to highlight the various causes of axillary lymphadenopathy in a young child and the need for careful history and examination to reach an accurate diagnosis.

How to cite this article: Ravindra SG, Sagar S, Arora SK, Seth R, Lomi N, Kumar R. Axillary lymph node in extra-ocular retinoblastoma – Benign or malignant? Indian J Nucl Med 2023;38:305-6.

Address for correspondence:
Dr. Rakesh Kumar, Department of Nuclear Medicine and PET-CT, All India Institute of Medical Sciences, New Delhi - 110 029, India.
E-mail: rkphulia@yahoo.com

Received: 07-01-2023
Revised: 14-02-2023
Accepted: 19-02-2023
Published: 10-10-2023

Access this article online

Website: www.ijnm.in
DOI: 10.4103/ijnm.ijnm_4_23
Quick Response Code:

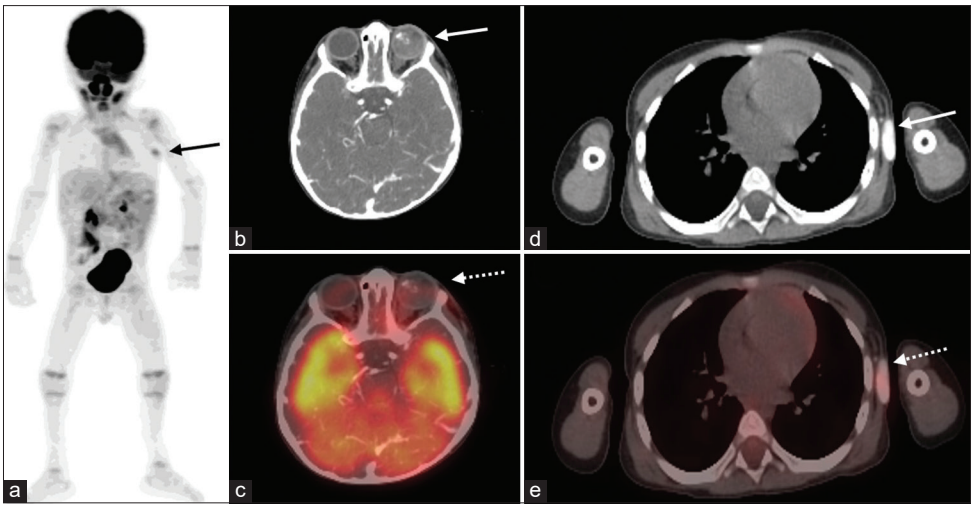

Figure 1: The MIP (a) image shows the calcified left axillary lymph node. The axial CT (b) and axial PET/CT fused (c) images show left eye extra-ocular retinoblastoma with internal calcifications (white solid arrow and white dotted arrow respectively). The axial CT (d) and axial PET/CT fused (e) images highlight the calcified left axillary lymph node (white solid arrow and white dotted arrow respectively)

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parent(s) has given his consent for his images and other clinical information to be reported in the journal. The patient's parents understand that his names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Dialani V, James DF, Slanetz PJ. A practical approach to imaging the axilla. Insights Imaging 2015;6:217-29.
2. Trehan I, Mouayaxeng S, Nigogosyan MA. Axillary calcification due to *Bacillus* Calmette-Guérin vaccination. J Pediatr 2020;223:218-9.
3. Burdeny DA, Reed MH, Ferguson CA. Calcification of axillary lymph nodes following BCG vaccination. Can Assoc Radiol J 1989;40:92-3.
4. Victoria MS, Shah BR. *Bacillus* Calmette-Guérin lymphadenitis: A case report and review of the literature. Pediatr Infect Dis 1985;4:295-6.
5. Luca S, Mihaescu T. History of BCG vaccine. Maedica (Bucur) 2013;8:53-8.
6. Goraya JS, Virdi VS. Bacille Calmette-Guérin lymphadenitis. Postgrad Med J 2002;78:327-9.
7. Elsidig N, Alshahrani D, Alshehri M, Alzahrani M, Alhajjar S, Aljummah S, *et al. Bacillus* Calmette-Guérin vaccine related lymphadenitis in children: Management guidelines endorsed by the Saudi Pediatric Infectious Diseases Society (SPIDS). Int J Pediatr Adolesc Med 2015;2:89-95.
8. Govindarajan KK, Chai FY. BCG adenitis-need for increased awareness. Malays J Med Sci 2011;18:66-9.