



**Case Report:**

**An Unusual Melanocytic Nevus of Conjunctiva : Balloon Cell Nevus.**

Vijay Shankar S, Associate Professor, Department of Pathology,  
Nischal KC, Assistant Professor, Department of Dermatology,  
Geethalakshmi U, Assistant Professor, Department of Pathology,  
Padmini HR, Professor & Head, Department of Ophthalmology,  
Adichunchangiri Institute of Medical Sciences. B G Nagara. Nagamangala taluk, Mandya district, Karnataka.

**Address for Correspondence:**

**Dr. Vijay Shankar S,**  
No 45, Ananda shylam, 3<sup>rd</sup> cross,  
1<sup>st</sup> main KN extension, Yeswanthpur,  
Bangalore - 560022,  
Karnataka, India.  
**E-mail:** vijayshankarpatho@gmail.com

**Citation:** Vijay Shankar S, Nischal KC, Geethalakshmi U, Padmini HR. An Unusual Melanocytic Nevus of Conjunctiva : Balloon Cell Nevus. *Online J Health Allied Scs.* 2011;10(2):23

**URL:** <http://www.ojhas.org/issue38/2011-2-23.htm>

**Open Access Archives:** <http://cogprints.org/view/subjects/OJHAS.html> and <http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: May 8, 2011; Accepted: Jul 15, 2011; Published: Jul 30, 2011

**Abstract:** Melanocytic nevi are one of the most common benign tumors of the conjunctiva. The balloon cell nevus is a rare and unusual variant of nevus of melanocytic origin, in which more than 50% of the tumor is composed of large polygonal cells with small nucleus and a clear to vacuolated cytoplasm. We describe a case of balloon cell nevus in a 6-year-old child who presented with pigmented lesion of the right eye since birth. The melanocytic nature of these cells was confirmed by immunohistochemical study. Excision of the tumor results in cure. This report describes a rare balloon cell nevus of conjunctiva which to the best of our knowledge is not documented in Indian literature.

**Key Words:** Nevi; Balloon cell; Conjunctiva

**Introduction:**

Melanocytic nevi of conjunctiva are the common benign tumors on the ocular surface. Nevi are usually congenital and generally are unilateral. Conjunctival nevi can be intraepithelial, subepithelial or compound nevi which are analogous to junctional, intradermal and compound nevi of skin.<sup>1</sup> Spitz nevi, epitheloid nevi, combined nevi, dysplastic nevi, balloon cell nevi, recurrent nevi, nevus of Ota and blue nevi accounts for a wide variety of unusual nevi in conjunctiva.<sup>2</sup> Melanocytic nevi with balloon cell change are an uncommon feature in nevi involving skin and such a change in conjunctival nevi is even rarer.

**Case Report:**

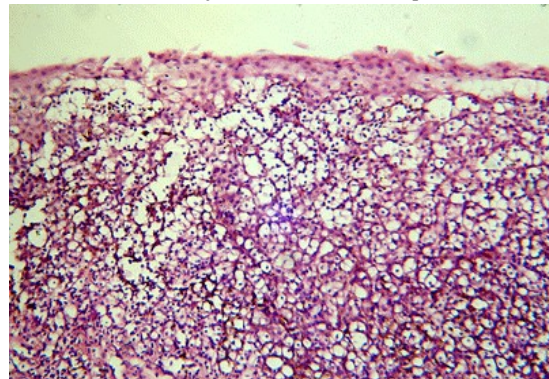
A 6-year-old boy presented with an asymptomatic brownish flat lesion on the right eye since birth. On examination, a single, well defined, slightly elevated, brownish, movable plaque of 4 mm x 3 mm was noted in the bulbar conjunctiva close to the temporal limbus of the right eye (Figure 1). Fornices, tarsus and cornea of both eyes were normal. The lesion was excised under general anaesthesia and sent for histopathological examination. There was no recurrence of the lesion during 6 months of follow up.

On histology, the lesion showed normal epithelium with diffuse distribution of predominantly vacuolated cells beneath it. (Figure 2). These cells were polyhedral in shape with small, hyperchromatic nuclei and a clear to microvesicular cytoplasm (Figure 3). No mitotic figures were seen. Nests of nevus cells were also seen subepithelially, at the edge of the lesion. Scattered

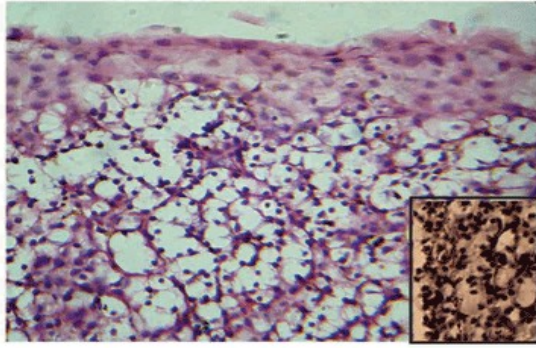
melanophages were seen throughout the tumor along with chronic inflammatory cell infiltrates. Immunohistochemistry revealed positivity for S 100 protein (Figure 3, inset) confirming the diagnosis of balloon cell nevus.



**Figure 1: Right eye showing single, brownish elevation in the bulbar conjunctiva in the lateral aspect.**



**Figure 2: Excisional biopsy revealed diffuse distribution of predominantly balloon cells beneath the normal conjunctiva. Interspersed amongst these are normal nevus cells, melanophages and scattered chronic inflammatory cells (H and E stain, x100)**



**Figure 3: Higher magnification reveals balloon cells which are polyhedral cells with small, hyperchromatic round nuclei and clear to microvesicular cytoplasm (H and E stain, x400). Inset shows these cells positive for S 100 protein (x400)**

#### **Discussion:**

The conjunctiva is a thin continuous mucus membrane lining the inner surface of the eyelids and most of the anterior aspect of eye, is composed of 2 to 5 layers of stratified columnar epithelium. Melanocytes are present in the basal layers and like in skin, can transfer melanosomes to the adjacent epithelial cells. Thus conjunctiva can be a site of many melanocytic lesions. The most common ones are nevi which are benign. These are often single, freely movable and most common in juxtalimbal area followed by epibulbar, plica, caruncle, eyelid margin forniceal conjunctiva.<sup>3</sup> Multifocality is less common. Balloon cell nevus of conjunctiva is an uncommon melanocytic nevus with no distinct clinical morphology. They can occur in any age group of 11 to 39 years as documented in the various reported cases. They are often brown to tan yellow in color. Clinically, balloon cell nevus has to be differentiated from blue nevus, Spitz nevus, combined nevus, dysplastic nevus, benign melanosis and acquired primary melanosis.

As there is no distinct clinical feature for this nevus, the diagnosis is only by histopathological examination. The nevus cells of this variant are typified by the presence of balloon cells constituting more than 50% of the tumor.<sup>4</sup> These cells are large, polygonal cells with small hyperchromatic nuclei and abundant clear to microvesicular cytoplasm. The ballooning of these cells is due to the collection of malformed vesicular premelanosomes. Kim et al also suggested that apoptosis could be involved in the development of balloon cell nevus.<sup>5</sup> Nests of nevus cells can also be seen beneath the conjunctival epithelium or at the lateral margins of the tumor. Balloon cells histologically can be confused with xanthoma cells, hibernoma cells, and other clear cell tumors like clear cell hidradenoma, clear cell sarcoma or a metastatic renal cell carcinoma. Therefore it is necessary to confirm the melanocytic nature of balloon cells either by immunohistochemistry or electron microscopy. Balloon cells stain positive for S 100 protein and other melanocyte markers like melan A/ MART – 1, but negative with HMB-45. Our case showed cytoplasmic positivity for S-100 protein. Ultrastructurally, balloon cells show intracytoplasmic vacuoles of various sizes and melanosomes that are microgranular and vacuolated. Balloon cell change in melanomas can be identified by the pleomorphic nature of melanoma cells.

#### **Conclusion:**

The balloon cell nevus is an unusual variant of nevus of melanocytic origin and its occurrence in conjunctiva is rare. It has no characteristic clinical morphology and the diagnosis is based solely on histopathological examination which should be confirmed by immunohistochemical reaction with melanocyte markers. However it is also of importance to clinicians as

malignant melanoma is one of the differential diagnosis which is of greater concern which although rare, can occur in children.

#### **References:**

1. Rodriguez-Sains RS. Pigmented conjunctival neoplasms. *Orbit* 2002;21:231-238.
2. Jakobiec FA, Zuckerman BD, Berlin AJ, Odell P, MacRae DW, Tuthill RJ. Unusual melanocytic nevi of the conjunctiva. *Am J Ophthalmol* 1985;100:100-113.
3. Farber M, Schutzer P, Mihm MC Jr. Pigmented lesions of the conjunctiva. *J Am Acad Dermatol* 1998;38:971-978.
4. Melanocytic nevi. In, McKee P, Calonje E, Granter S (editors). *Pathology of the skin with clinical correlations*, 3rd edition. Philadelphia, Mosby, 2005. pp 1265-66.
5. Kim YJ, Kim YC, Kang HY. Is apoptosis involved in the development of balloon cell nevus? Suggestion from a case report. *J Am Acad Dermatol* 2007;56:1069-1070.