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Case Report

Iris melanocytoma in child diagnosed by fine needle aspiration biopsy

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Abstract

We report a case of large iris melanocytoma in a child diagnosed by fine needle aspiration biopsy. In this interventional case report, cytologic features typical of melanocytoma were obtained by fine needle aspiration biopsy (FNAB). FNAB can be used in difficult diagnostic cases if a good sample is obtained, this technique has an accuracy of more than 99% in tumors larger than 3 mm; however, false-negative and false-positive results may be obtained. Its risk of local spread is very small, an advantage over incisional biopsy. The most common complication is intralesional hemorrhage and hyphema.

Keywords: Iris melanocytoma, Child, Fine needle aspiration biopsy, Iris tumor

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Introduction

Zimmerman and Garron suggested the term ''melanocytoma'' to describe deeply pigmented tumor of the optic nerve head[1] is an uncommon tumor of the uveal tract, which is generally regarded as benign, having the ability for invasion of local tissues.[2] Classically it is described at the optic nerve head, but it is encountered less frequently at the ciliary body, and there are rare reports of occurrence in the iris, sclera, conjunctiva, and choroid. In some cases, iris or ciliary body melanocytoma can show progressive growth or even extrascleral involvement; this aspect makes clinical differentiation from malignant melanoma difficult.[3] Moreover, iris melanocytoma has a peculiar tendency to undergo necrosis with shedding of pigment on the iris and trabecular meshwork,[4] this can produce secondary glaucoma and heterochromia. Despite its benign nature, iris melanocytoma growth occurs in 23% of cases at 5 years and 48% of cases at 10 years.[5] Malignant transformation is rare.

Case report

A 9 year-old girl was referred to the King Khaled Eye Specialist Hospital with the diagnosis of iris tumor in her left eye. For the past two months, she had experienced intermittent itching and redness in her left eye. On ophthalmic examination, the best uncorrected visual acuity was 20/20 in each eye. The intraocular pressures (IOP) were 13 mm Hg in the right eye and 20 mmHg in the left. The biomicroscopic examination of the right eye was within normal limits. The left eye had a dark brown lobulated lesion about 3 × 4 mm located in the lower nasal quadrant of the iris between 7 and 8 o'clock. It appeared to be solid, approached but did not involve the pupil. The peripheral part of the lesion is separated from the angle with the normal iris. Inferiorly there was another crescent like pigmented lesion at 6 o'clock. The surface of the iris has numerous small-pigmented lesions more concentrated around the lesion and disappears away from it. The mass seemed to be adhered to the peripheral posterior

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cornea (Fig. 1a). Extension of the lesion obstructed the gonioscopic view into the chamber angle between 7 and 8 o'clock. The remainder of the angle was open with a moderate amount of pigmentation covering the scleral spur and trabecular meshwork (Fig. 1b). There were moderate anterior chamber reaction 3 + cells, and 1 + flare with few pigment deposits on the posterior surface of the cornea. Ultrasound Biomicroscopy (UBM) showed a large homogeneous solid mass and a thickness of about 2.53 mm, the ciliary body was free from lesion, UBM was suggestive of iris melanoma (Fig. 1c). Uveitis work-up and systemic evaluation were unremarkable. Based on overall appearance and location malignancy could not be ruled out. Differential diagnosis included melanoma, nevus, melanocytoma and others. Fine-Needle Aspiration Biopsy (FNAB) as well as anterior chamber aqueous aspiration were performed and cytological smears of specimen showed highly pigmented plump polyhedral cells with abundant pigmented cytoplasm and round regular normal size nuclei and no evidence of pleomorphism, the cells showed low nuclear–cytoplasmic ratio (N/C ratio) (Fig. 2), the appearance was suggestive of iris melanocytoma.

Surgical technique for FNAB

The FNAB technique of the iris involves proper instrumentation, planning of tumor approach, handling of harvested cells, and preparation and interpretation of cytologic specimens. In our case clear corneal incision was made superionasally as paracentesis using 75 blade. Aqueous was aspirated with a 27 gauge cannula and viscoelastic substance was injected into the anterior chamber to form it and prevent any possible cells seed or bleeding that might occur. FNAB was done using a 25-gauge needle attached to a 3-ml syringe. Inferior clear corneal approach was selected for aspiration. Aspiration point was at the thickest portion of the tumor where the tumor was adhered to the cornea. A gentle sliding motion of the needle within the mass was performed to shave and loosen cells for aspiration. Aspiration of the 3-ml syringe was performed over 5 s to confirm that the needle was completely within the mass and not simply aspirating aqueous. Aspiration was maintained for a few seconds with the needle in the tumor and also as the needle was withdrawn from the eye. The needle was then removed slowly from the eye and bleeding occurred during the aspiration into the anterior chamber. The anterior chamber was refilled using balanced salt solution (BSS) after removing viscoelastic substance and stromal hydration was performed to the paracentesis site. There was very little aspiration material. The aspirated cells, located predominantly in the needle tip and wall of syringe, were flushed into the syringe using BSS. Immediately after collection, the sample was transported to the Cytology laboratory and was processed within 24 h of collection.

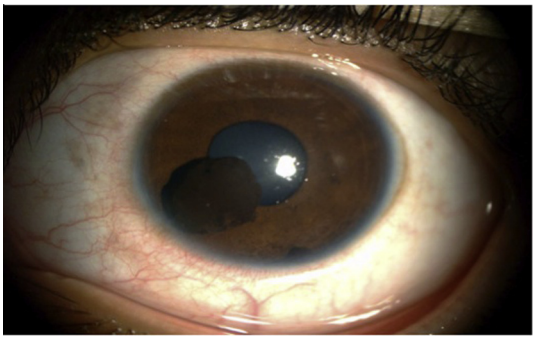

Figure 1a. Picture of the left eye had a dark brown lobulated lesion about 3 4 mm located in the lower nasal quadrant of the iris between 7 and 8 o'clock. Inferiorly there was another crescent like lesion at 6 o'clock.

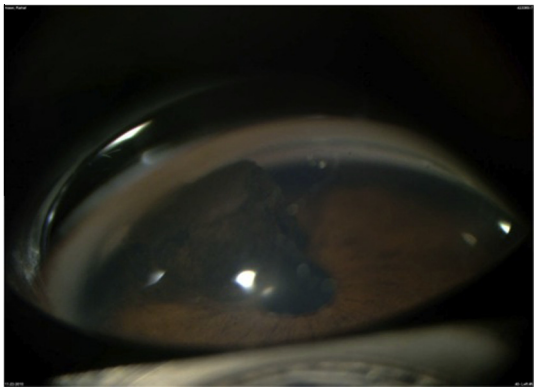

Figure 1b. Extension of the iris lesion obstructing the gonioscopic view of the chamber angle between 7 and 8 o'clock. The remainder of the angle was open with a moderate amount of pigmentation covering the scleral spur and trabecular meshwork.

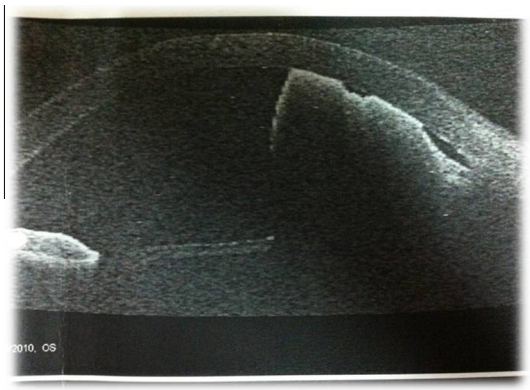

Figure 1c. UBM showed a large homogeneous solid mass with a thickness of about 2.53 mm. The ciliary body was free from lesion.

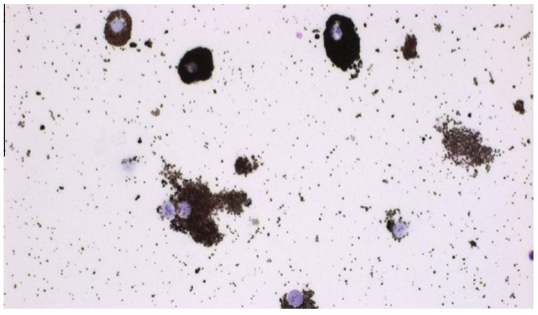

Figure 2. Direct smear of FNAB showing melanocytoma cells × 400 H&E.

Clinical course

Recovery was satisfactory. On the first postoperative day, uncorrected visual acuity of the left eye was 20/100 with hyphema and blood clot in the anterior chamber with +3