

Primary Malignant Melanoma of the Eye in a 17-Year-Old Girl with Acute Lymphoblastic Leukemia

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Abstract

Herein we describe a case of intraocular melanoma in a 17-year old leukemic patient. The history, histological findings of the enucleated eye, blood and bone marrow of the patient were investigated. The enucleated eye contained epitheloid cell type melanoma instead of leukemic cell infiltration. We conclude that intraocular malignant melanoma can occur in acute lymphoblastic leukemia.

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Keywords • Leukemia, lymphoblastic, acute • melanoma • choroid.

Introduction

The most common primary intraocular tumor in adult is malignant melanoma which is rarely found in younger age group.¹ Intraocular involvement by leukemia can be seen in a majority of autopsy series of leukemic patients.² We report a case of acute lymphoblastic leukemia in remission, who presented with choroidal malignant melanoma rather than eye involvement by leukemic cells

Case presentation

A 17-year-old girl presented with decreasing vision in the left eye of 2 years duration. She was a known case of acute lymphoblastic leukemia (ALL-L2) at 12 years of age with persistent weakness and anemia ever since. At which time she had come with weakness and anemia. Peripheral blood and bone marrow revealed acute lymphoblastic leukemia (ALL-L2). (Fig1)

She received chemotherapy with vincristin, 6MP, methotrexate and prednisolone in a 3 years period. She also received irradiation to CNS (2400 rad) due to high risk of CNS involvement in this age group at the time of ALL presentation. She then went into remission with bone marrow and peripheral blood reverting to normal.

Since 2 years ago she developed a gradual decrease of vision in the left eye. Visual acuity in the right eye was 20/20 and in the left eye was restricted to hand motion. Eye examination showed large vessels over the sclera at the temporal site, clear cornea and lens, no cells or flare in anterior chamber and clear vitreous. Fundoscopy revealed retinal detachment and large, brown-colored mass lying under detached retina on temporal periphery which extended up to the globe equator. MRI showed choroidal detachment with overlying retinal detachment excluding any kind of tumor. (Fig 2). Sonography of the left eye showed a 12.11.7 mm mass with overlying retinal detachment and moderate internal reflectivity lacking acoustic shadow.

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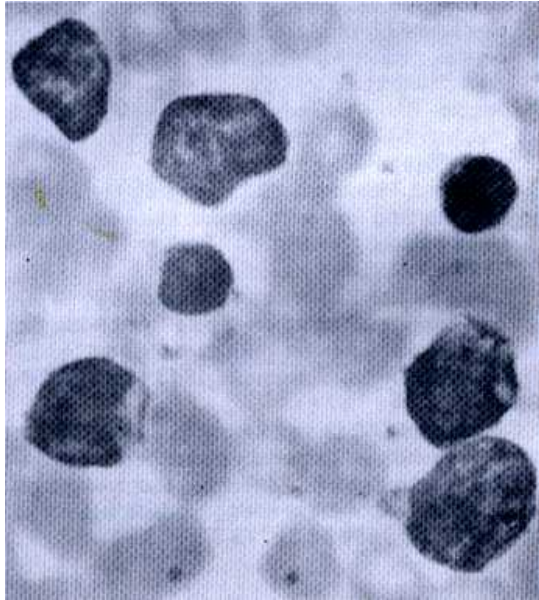


Figure 1: Peripheral blood and bone marrow smears showed neumerous lymphoblasts. Wright-Giemsa : 1200

Consultation with hematologist was done and they recommended 2000 rad of irradiation + anti leukemic medications with impression of leukemic involvement of the eye, despite normal peripheral blood and bone marrow. This treatment failed to result in improvement of vision or any reduction in the size of the mass.

Patient's vision deteriorated gradually until there was no light perception and severe eye pain had occurred. Finally eye enucleation was done. Histopathology of enucleated eye revealed epitheloid type of malignant melanoma of the choroid (Fig 3).

Discussion

Choroidal melanoma is the most common primary intraocular tumor in the adult. The tumor is extremely rare in children and primarily affects patients in their early 60s, although a bimodal distribution involving the third decade is also noted.¹

Leukemic eye involvements are common especially in acute leukemia.

Autopsy series have revealed intraocular involvement with leukemia in up to about 80% of cases.^{2,3} Different sites within the eye can be involved in leukemia including conjunctiva, anterior chamber angle, retina choroid and optic nerve head. Although the retina appears clinically to be the most frequently involved site, histological studies show

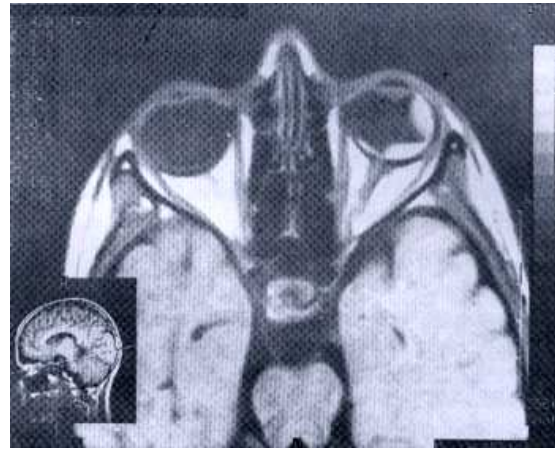


Figure 2: Axial T1 –weighted MRI of the head. The thickening of the choroid, temporal site of the left eye

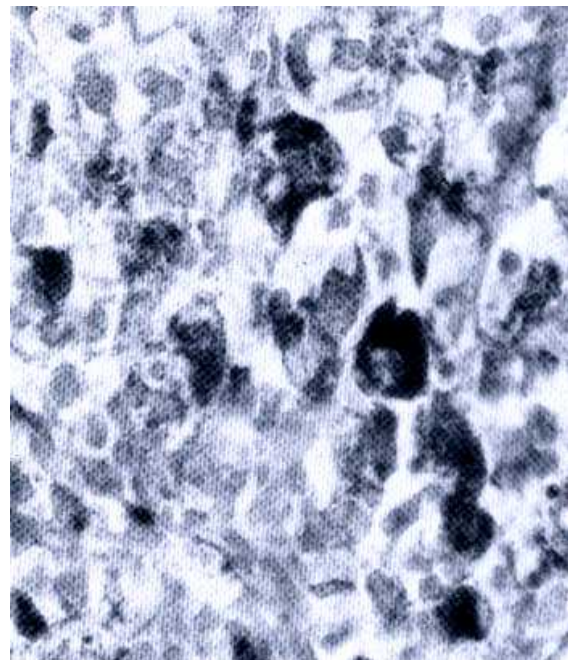


Figure 3: Histologic picture of tumor in enucleated eye revealed epitheloid cell type of choroidal malignant melanoma. Hematoxyline-Eosin:1200

that the choroid comprise the more affected site. However infectious process should also be considered in the differential diagnosis.⁴ Ocular involvement is rarely seen during period of remission. Other malignancies have also been reported in leukemia especially in hairy cell leukemia.⁵ In acute lymphoblastic leukemia some type of skin

Report of a case with biliary tract obstruction due to fasciola hepatica treated by ERCP

nevus and a case of skin malignant melanoma have been reported.⁶

According to other studies common acute lymphoblastic leukemia antigen (CALLA) are present not only on lymphoblastic leukemic cells but also on malignant melanoma cells.^{7,8}

To our knowledge this is the first report of uveal malignant melanoma in a patient with acute lymphoblastic leukemia.

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