Masquerade Syndromes: the Tumor Behind the Scenes

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Masquerade is most often used in ophthalmology in reference to tumors that mimic intraocular inflammation. In this context, a masquerade is not always the result of a tumor; it can also be due to a degenerative process such as retinitis pigmentosa, siderosis, infection, or drugs. In the current context, we will refer to intraocular tumors that are mistaken for other entities. Tumors can be mistaken for inflammatory processes; the natural evolution of a long-standing ocular degeneration, or they can simulate a retinal process.

The incidence of malignant masquerade has been cited as comprising 2% of cases in a uveitis referral practice (as high as 8% in practices with mostly elderly patients). Although this figure is probably higher than what is seen in most practices, it should be considered in all cases where there is poor response to therapy, when the inflammatory process has atypical features, or when a picture compatible and more typical of a masquerade is present.

LYMPHOMAS AND LEUKEMIAS

In intraocular lymphoma (Figure 1), subretinal pigment epithelial infiltration of cells is typical. These well-circumscribed cream-colored cell collections varying in size from pinpoint to one-third to one-half disc diameter are not static and can move around over time. Zones of pigment alterations will form as the cellular infiltrates subside. The overall appearance may suggest a past viral infection, extensive drusen, or even retinitis pigmentosa. It is the combination of manifestations and the evolution that suggests the true diagnosis.

Leukemia is another good example. Ocular manifestations are present in up to 75% of patients. They are

Figure 1. Intraocular lymphoma. Here, the intraocular lymphoma was associated with atypical features. RPE proliferation sometimes resembling a zone of previous viral retinitis can be observed (A). A more typical subretinal infiltrate was present in the other eye. Both presentations often co-exist (B).
usually related to venous stasis developing as result of hyperviscosity caused by the large number of circulating white blood cells. Characteristic changes include retinal vascular sheathing, intraretinal hemorrhages, white-centered hemorrhages, cotton wool spots, and peripheral microaneurysms with capillary dropout. More extensive peripheral neovascularization, similar to those observed with sickle cell disease, is more commonly seen in association with chronic myelogenous lymphomas. Choroidal infiltration can lead to a compromised choriocapillaris and thereby lead to ischemia and the development of an exudative retinal detachment. Centrally located serous detachments are known to occur in recurrent cases and may be due to the steroids frequently used in such cases.

Central serous retinopathy is not uncommon in the context of malignancies. Commonly reported with leukemias, it is also seen with lymphomas, particularly while under treatment. It can develop as a result of steroid use in any chemotherapeutic regimen, or as a result of steroid-secreting tumors such as adrenal cortex carcinomas or adenomas. A centralized effusion is also possible in association with other retinal or choroidal processes from choroidal metastasis to more benign processes such as hemangiomas, choroidal osteomas, or sclerochoroidal calcifica-
oral steroids should raise suspicion. Such T-cell lym-
occlusive vasculitis characterizes certain types of T-
in one of these cases, and biopsy in the other. An

appropriate context suggest the possibility of a distant
process, usually over several decades, and should
inflammation can trigger or evolve into a neoplastic
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OTHER MASQUERADE SYNDROMES

Masquerade can also arise in benign ocular lesions or in association with such lesions. Small pigmented
nevi or nevus-like lesions are known to grow and possibly evolve into malignant melanomas over a number of years. Similarly, focal-pigmented hyperplastic lesions of the retinal pigment epithelium can become anaplastic in nature over several decades and become locally invasive. Toxoplastic retinal lesions and the presence of toxoplasmosis gene products were found in patients with ocular lymphoma. Chronic recurrent inflammation can trigger or evolve into a neoplastic process, usually over several decades, and should always be considered in cases of patients whose response to treatment is less than adequate. Finally, tumors can act at a distance, and both cancer-associated retinopathy and diffuse uveal melanocytic proliferation (bilateral or unilateral) should in the appropriate context suggest the possibility of a distant tumor. The earlier the diagnosis is made or suspected, the more likely the patient will be able to maintain his/her vision. In the case of bilateral disease, small iris proliferations are sometimes seen, as the melanocytic cell proliferation may be dependent on higher levels of tyrosinase kinase (c-kit) and stem cell factor. Context, lack of response, and an appropriate dose of suspicion should allow the treating ophthalmologist to suspect, diagnose, and appropriately treat these masquerading tumors.