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A Practical Approach To The Management Of Eyelid Tumours

By Jeffrey Jay Hurwitz, MD, FRCSC

In the July/August 2005 edition of *Ophthalmology Rounds* (Volume 2, Issue 4) Dr. David Howarth, a pathologist at Mount Sinai Hospital and the University of Toronto, outlined a pragmatic approach to understanding the pathology of benign and malignant eyelid tumours. Dr. Howarth eloquently described how pathologists think about eyelid tumours, the tricks they use to determine whether a lesion is benign or malignant, and how they arrive at a pathological diagnosis. This issue of *Ophthalmology Rounds* describes the clinical features of eyelid tumours and assists the clinician in characterizing tumours as either benign or malignant. Determining the characteristics of a lesion is extremely important for decisions regarding the management of these tumours.

Clinical evaluation

Incidence

Benign lesions (Figure 1) are approximately 3 times more frequent than malignant neoplasms of the eyelid (Figure 2).[1] However, it is impossible to tell with absolute certainty whether a lesion is benign or malignant from clinical examination only.

Rapidity of onset

Usually benign lesions are quite slow in onset and have a long duration; however, lesions such as keratoacanthomas[2] may come on quickly and involute. Indeed, in the literature it is controversial as to whether these are, in fact, really squamous carcinomas.

Tenderness to the touch

Inflammatory lesions[3] as seen in this patient with a chalazion (Figure 3), may have some tenderness upon palpation, which is suggestive of a benign lesion.

Edges of the lesion

Benign lesions tend to have a healthy eyelid surface immediately adjacent to the lesion itself, as indicated in this amelanotic nevus (Figure 4), or in this patient with multiple neurofibromatoses (Figure 5). Conversely, in patients with malignant lesions, such as this patient with basal cell carcinoma (Figure 6), the margins adjacent to the lesions will be involved.

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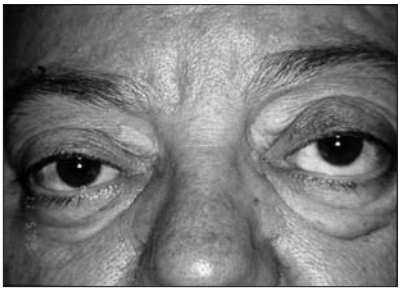

Figure 1: Benign lesion - xanthelasma

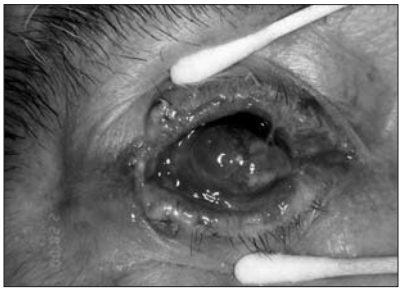

Figure 2: Malignant lesion: sebaceous carcinoma

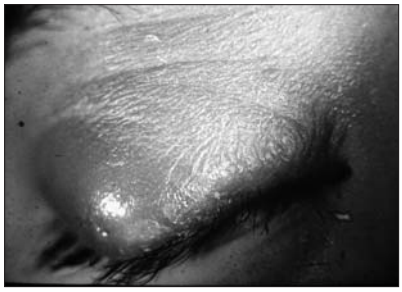

Figure 3: Acute chalazion

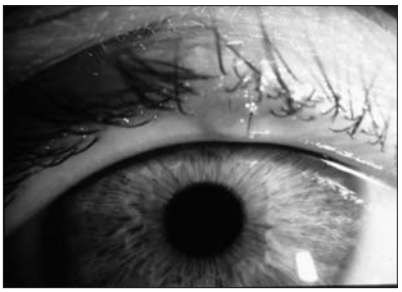

Figure 4: Amelanotic nevus – adjacent tissue clear

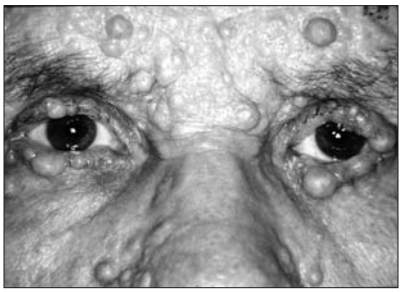

Figure 5: Neurofibromatoses – adjacent tissue clear

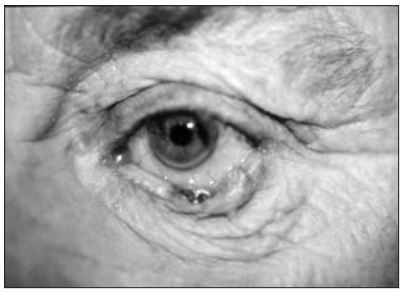

Figure 6: Basal cell carcinoma – adjacent tissue involved

Loss of lashes

Benign lesions will tend to have no loss of lashes within the lesion or beside the lesion (Figure 4), whereas lashes in a malignant lesion will usually be lost (Figure 7).

Palpation of lesion

A benign lesion, such as this conjunctival papilloma (Figure 8), will be "squishy," but malignant lesions, such as in this patient with a large basal cell carcinoma (Figure 9), will be very firm to palpation.

Vascularization within the lesion

A benign lesion tends to have regular vascularization, as in this papilloma (Figure 8). A malignant lesion as found in this patient with a conjunctival adenocarcinoma (Figure 10), has a large feeder vessel with abnormal vascularization.

Pigmentation of the lesion

Pigmentation is not necessarily characteristic of a malignant tumour; for example, this patient has a seborrheic keratosis (Figure 11) that is benign, yet this patient with a relatively non-pigmented lesion (Figure 12) has a malignant melanoma.

Characterization of pigment

The pigment of a benign lesion is usually quite well-circumscribed and homogeneous, as shown in Figure 11 and in a patient with a nevus around the punctum (Figure 13). Malignant melanomas may develop from a nevus of Ota (Figure 14), from a pre-existing nevus, or from lentigo maligna (Figure 15). In some cases, a melanoma may arise *de novo*.

Regional lymph nodes

In a benign lesion, the regional lymph nodes are never involved, but in a malignant lesion, the preauricular or cervical nodes may be involved. For example, this patient had a totally neglected basal cell carcinoma with eye and orbital involvement and the lesion spread to the regional preauricular node (Figure 16).

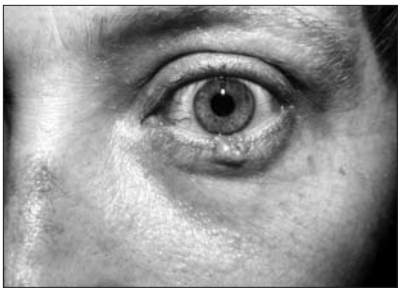

Figure 7: Basal cell carcinoma – loss of eyelashes

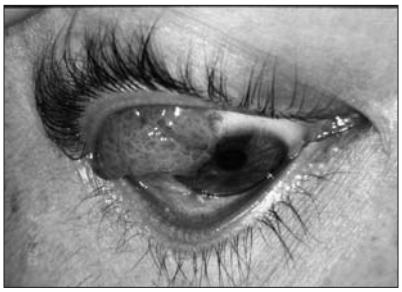

Figure 8: Conjunctival papilloma – "squishy" to palpation

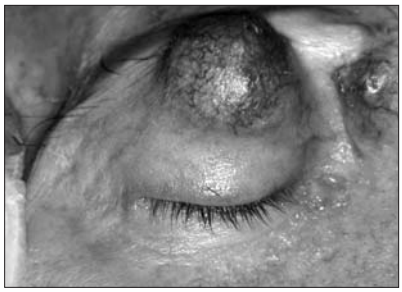

Figure 9: Basal cell carcinoma – hard to palpation

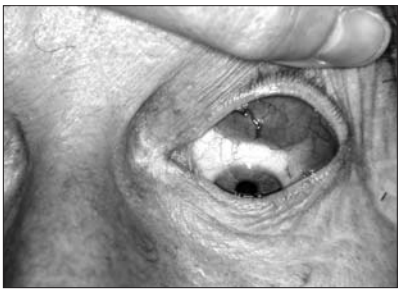

Figure 10: Conjunctival adenocarcinoma – "irregular" vascularization

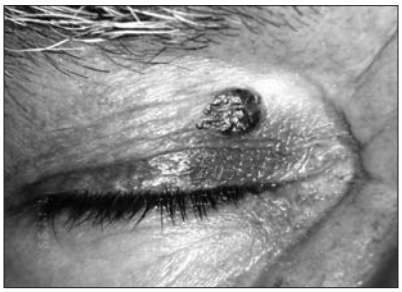

Figure 11: Seborrheic keratosis – benign in spite of pigment

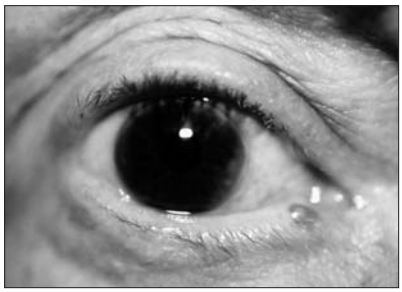

Figure 12: Malignant melanoma – relatively amelanotic

Location of the tumour

Benign and malignant lesions may be present in the eyelid, or may grow into the eyelid from surrounding structures. These lesions from adjacent areas may mimic eyelid tumours, such as a patient with lacrimal sac swelling (Figure 17), a lacrimal sac tumour (Figure 18), canaliculitis (Figure 19), or dacryoadenitis with or without a calculus (Figures 20a, 20b), among others.

"Atypical" eyelid lesion – what to do?

Whereas some lesions have classic indications for a chalazion (Figure 3), other lumps or bumps in the area may be atypical, for example a fibrous chalazion (Figure 21) or multiple chalazia (Figure 22). Conjunctival lesions may appear atypical in colour, such as in a patient with amyloidosis (Figure 23) or a salmon-pink colouration of a conjunctival lesion that is a lymphoma (Figure 24). If a lesion is not totally typical, the **radical** thing to do is to suggest to the patient that the lesion is benign and does not require follow-up. The **conservative** option is to biopsy the lesion. In this case, the preference is for the conservative option (surgical approach). The armamentarium of every ophthalmologist should include the ability to biopsy a lesion and send it for pathology. Frozen section is almost never indicated for an eyelid biopsy and the lesion can be fixed in formalin. Biopsies may be incisional or excisional, but for purely diagnostic purposes, an incisional biopsy usually suffices.

Should every eyelid lesion be biopsied?

If a cyst occurs on the eyelid, one possible choice is to simply prick it with a sterile needle and evacuate the fluid. However, the patient should be seen at least once for follow-up because, occasionally, malignant tumours such as basal cell carcinomas can be cystic. Certainly, not every chalazion requires a biopsy; nevertheless, it is recommended that any chalazion with an atypical appearance (ie, no egress of mucoid material upon incision of the chalazion) warrants a small biopsy of the wall.[3,4] If a sebaceous carcinoma is suspected, a frozen section may be useful, as is oil red O staining of the tissue.

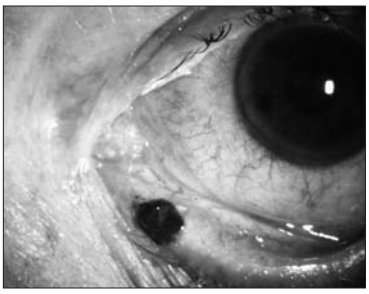

Figure 13: Peripunctal nevus – homogeneous pigmentation

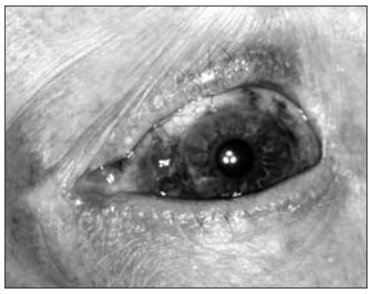

Figure 14: Nevus of Ota

Figure 15: Lentigo maligna

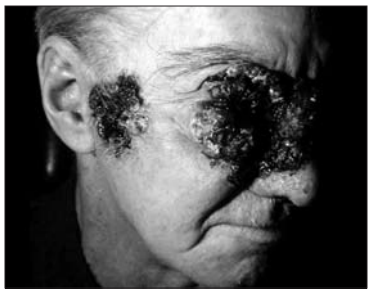

Figure 16: Extensive neglected basal cell carcinoma with spread to preauricular node

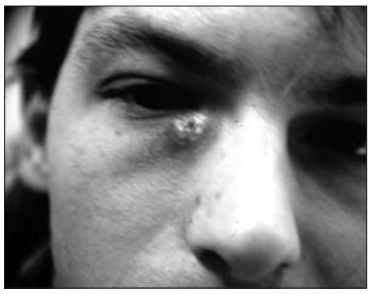

Figure 17: Chronic dacryocystitis mimicking a lid lesion

Figure 18: Lacrimal sac tumour

Management of eyelid tumours

Benign tumours

Benign tumours of the eyelid are usually removed with an excisional biopsy. If, preoperatively, the nature of the lesion is clinically uncertain, then an incisional biopsy may be performed with a frozen section, and followed by an excisional biopsy if benign, or excision with frozen section margins if it is malignant.

Malignant lesion

Malignant lesions may be treated either by surgery, radiotherapy, or a combination of the two. There is an old expression that "good surgery is better than bad radiotherapy and good radiotherapy is better than bad surgery." For certain lesions, radiotherapy is more often advocated, whereas for other malignant lesions surgery is a better option. For conjunctival lymphomas, radiotherapy is indicated over surgery once the pathological diagnosis is made. Other lesions, such as sebaceous carcinomas, are not very radiosensitive and are better treated with surgery. With sebaceous carcinomas, especially, it is sometimes very difficult to find the extent of the lesion and to determine exactly what should be irradiated. The surgery for sebaceous carcinomas should involve map biopsies of the conjunctiva to ensure that the entire lesion is excised.

Basal cell carcinomas may be treated either by radiation or surgery. With radiotherapy, usually about 2000 rads are given, fractionated over a 10-day period; however, for more malignant lesions, approximately 5000–6000 rads should be fractionated over 1 month.

Other modalities of treatment include immunotherapy in resistant lesions, such as malignant melanoma, and cryotherapy in less invasive lesions such as basal cell carcinoma.

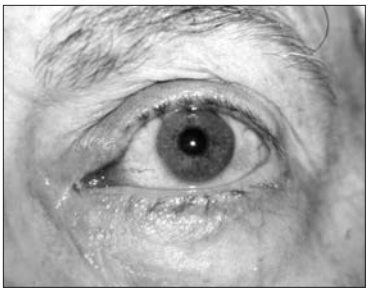

Figure 19: Upper canaliculitis

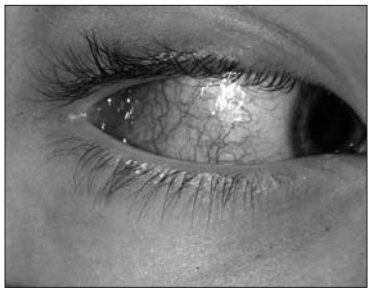

Figure 20a: Dacryoadenitis

Figure 20b: Dacryoadenitis with calculus

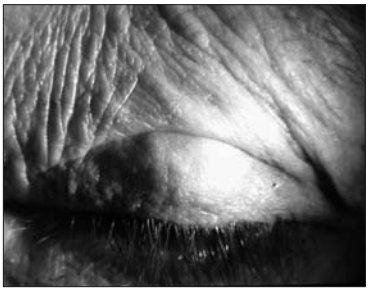

Figure 21: Fibrous chalazion – needs biopsy

Figure 22: Multiple chalazia

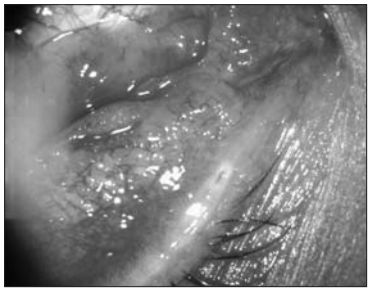

Figure 23: Lid lesion – amyloidosis

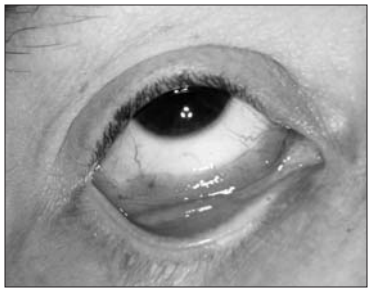

Figure 24: Conjunctival lymphoma

It is essential if performing surgery that clear margins are obtained on frozen section before reconstruction is undertaken. Our prefererence is for multiple frozen sections at the time of surgery. Many surgeons prefer Mohs[5] micrographic surgery to control the margins of eyelid tumours. This is an excellent modality if the technique is readily available adjacent to the operating room. We prefer to do most of our surgery for eyelid tumours under local anesthesia where the patient is awake and can open and close the eyes at the surgeon's request in an attempt to optimize the aesthetic effect of the reconstruction.

There are multiple options for reconstructing the eyelids after surgery to remove a tumour. These techniques will be described in a future publication.

Conclusion: "take-home message"

It is impossible for any physician to tell clinically with absolute certainty whether a lesion is benign or malignant; if there is any doubt, **biopsy**.

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Abstract of Interest

Strabismus surgery for adults: A report by the American Academy of Ophthalmology.

MILLS MD, COATS DK, DONAHUE SP, WHEELER DT.

OBJECTIVE: To describe the effectiveness and safety of surgical treatment of adult patients with strabismus, and to review the reported functional benefits and complications of strabismus surgery for adults.

METHODS: A literature search was conducted in September 2001. it was repeated and updated in April 2003, with retrieval of relevant citations. Panel members reviewed the articles and rated them according to their relevance to the topic and methodology.

RESULTS: The literature search identified 49 reports that describe the surgical treatment of strabismus in adult patients and meet predetermined review criteria. Of these reports, 2 were randomized controlled trials, and 1 addressed the primary objective of this review. In this randomized study of adults with strabismus, direct comparison of surgical correction with botulinum A chemodenervation indicated that surgical treatment was superior to botulinum toxin A in realigning the eyes (76.9% vs. 29.4%, $P=0.027$). Several large case series of adults with strabismus (level III evidence) with successful surgical realignment rates of 68% to 85% have been reported. Functional benefits of surgical treatment are reported in many patients. These include elimination of diplopia, development of binocular fusion, expansion of binocular visual fields, and improvement of head position. Surgical complications, including new, postoperative diplopia (1%-14%) or scleral perforation (0.8%-1.8%), occur in a minority of patients. Unplanned reoperations (subsequent strabismus procedures that were not anticipated as part of a staged treatment) were needed in up to 21% of patients in large case series of comitant strabismus, and in up to 50% of patients with thyroid ophthalmopathy.

CONCLUSIONS: Despite the paucity of level I evidence from randomized controlled studies, the existing literature suggests that surgical treatment of adults with strabismus is safe and effective in improving ocular alignment. In many cases it improves visual function, based largely on level III evidence. Risks include unplanned reoperation, postoperative diplopia, and scleral perforation. Additional level I studies of surgical treatment of adult patients would help to document the effectiveness and substantiate the safety of this treatment.

Ophthalmology. 2004;111(6):1255-62.

University of Toronto Department of Ophthalmology and Vision Sciences

Upcoming events

February 28, 2008	VPP Inas Makar, MD, London, Ontario Pediatric Cataract Surgery
March 6, 2008	VPP Alex Levin, MD & Gord Squires, MD University of Toronto, Toronto Ethics
March 27, 2008	VPP – TBA Uveitis
April 10, 2008	VPP Arie Marcovich, MD Hebrew University, Israel Ptergium surgery – surgical approach, management of recurrence and complications
April 18, 2008	Pearls in Surgical Pediatric Ophthalmology Hospital for Sick Children, Toronto E-mail: help-OPT0803@cmetoronto.ca Conf. website: http://www.cme.utoronto.ca
April 27 – May 1	2008 Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting Fort Lauderdale, Florida
May 8, 2008	Departmental Research Day (day 1) 5:30 p.m. PMH auditorium 6th floor Contact: Stella Pang 416-813-7654 × 2642
May 9, 2008	Departmental Research Day (day 2) 7:30 a.m. JJR MacLeod Auditorium, MSB University of Toronto
May 15, 2008	VPP Kamel Itani, MD, University of Texas, Dallas, Texas Orbital ultrasound: Past, present, and future
May 29, 2008	VPP William Macrae, MD, and Residents, University of Toronto Quality assurance rounds

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