Surgical Oncology (2006) **15**, 135–139

Available at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/suronc

REVIEW

T-cell lymphoma of the upper eyelid: A case report and review of the literature

D.J. Verret[a,*], Robert J. DeFatta[b], Yadranko Ducic[c]

[a]*Department of Otolaryngology Head & Neck Surgery, Division of Facial Plasctic & Reconstructive Surgery, University of Missouri-Columbia, USA*
[b]*Department of Otolaryngology Head & Neck Surgery, University of Texas Southwestern Medical Center, Dallas, TA, USA*
[c]*Division of Otolaryngology and Facial Plasctic Surgery, John Peter Smith Hospital, Forth Worth, TA, USA*

Accepted 8 November 2006

KEYWORDS
T-cell lymphoma;
Eyelid reconstruction;
Frontalis muscle flap

Abstract
We present the case report of a 95-year-old white female with a cutaneous T-cell lymphoma (CTCL) of the upper eyelid. Due to her comorbid medical problems, multidisciplinary tumor board recommendation for treatment was surgical excision. She underwent excision with frontalis muscle flap and contralateral eyelid full thickness skin graft reconstruction. The patient has been symptom free for 3.5 years. A literature review of cutaneous CTCL isolated to the eyelid is included.

Contents

Introduction

Cutaneous T-cell lymphomas (CTCL) represent a broad spectrum of disease with several different manifestations. The most common types of CTCL, mycosis fungoides and Sezary syndrome, are also the most common lymphomas involving the skin [1]. In addition to mycosis fungoides and Sezary syndrome, several other variants of CTCL have been identified though thorough classification has been difficult, with several different classification systems in use today [1].

Manifestation of CTCL in the ocular adnexa is seldom reported and is usually a manifestation of the Sezary syndrome or mycosis fungoides [2–5]. To date, this is the first case of the CD3 positive subtype of anaplastic T-cell lymphoma present in the eyelid, and only the second case of anaplastic T-cell lymphoma present in the ocular region [6].

*Corresponding author. Tel./fax: +1 417 889 0327.
E-mail address: dj@djverret.com (D.J. Verret).

0960-7404/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.suronc.2006.11.001

We report a case of an elderly woman with previously treated T-cell lymphoma presenting with an upper eyelid lesion diagnosed as anaplastic T-cell lymphoma treated with surgical excision alone.

Case presentation

A 95-year-old white female presented to our clinic with a recurrent right upper eyelid lesion (Fig. 1a). The patient's history dates back to 1998 when she had multiple skin lesions excised which were diagnosed as T-cell lymphoma. The patient underwent an excisional biopsy of the current lesion by an outside practitioner 2 months before, which was diagnosed as anaplastic large cell. A metastatic workup with CT of the neck, chest, and abdomen was negative for disease. The patient was presented to our multidisciplinary tumor board for further treatment recommendations. At the time of presentation the tumor was causing significant lagophthalmos in her better-seeing eye, which was producing a decrease in the patient's quality of life. Due to the patient's advanced age, risk of blindness as a radiation complication, and local disease, surgical excision of the tumor was considered.

After the risks and benefits of the procedure were explained to the patient and her family, she was taken to the operating room for surgical excision of the lesion with reconstruction. A resection of the right eyebrow and upper lid was performed. The resulting defect was approximately 3×2.5 cm (Fig. 1b). Reconstruction was accomplished with a frontalis muscle sling (Fig. 1c) and full-thickeness skin graft from the contralateral eyelid. Final pathologic

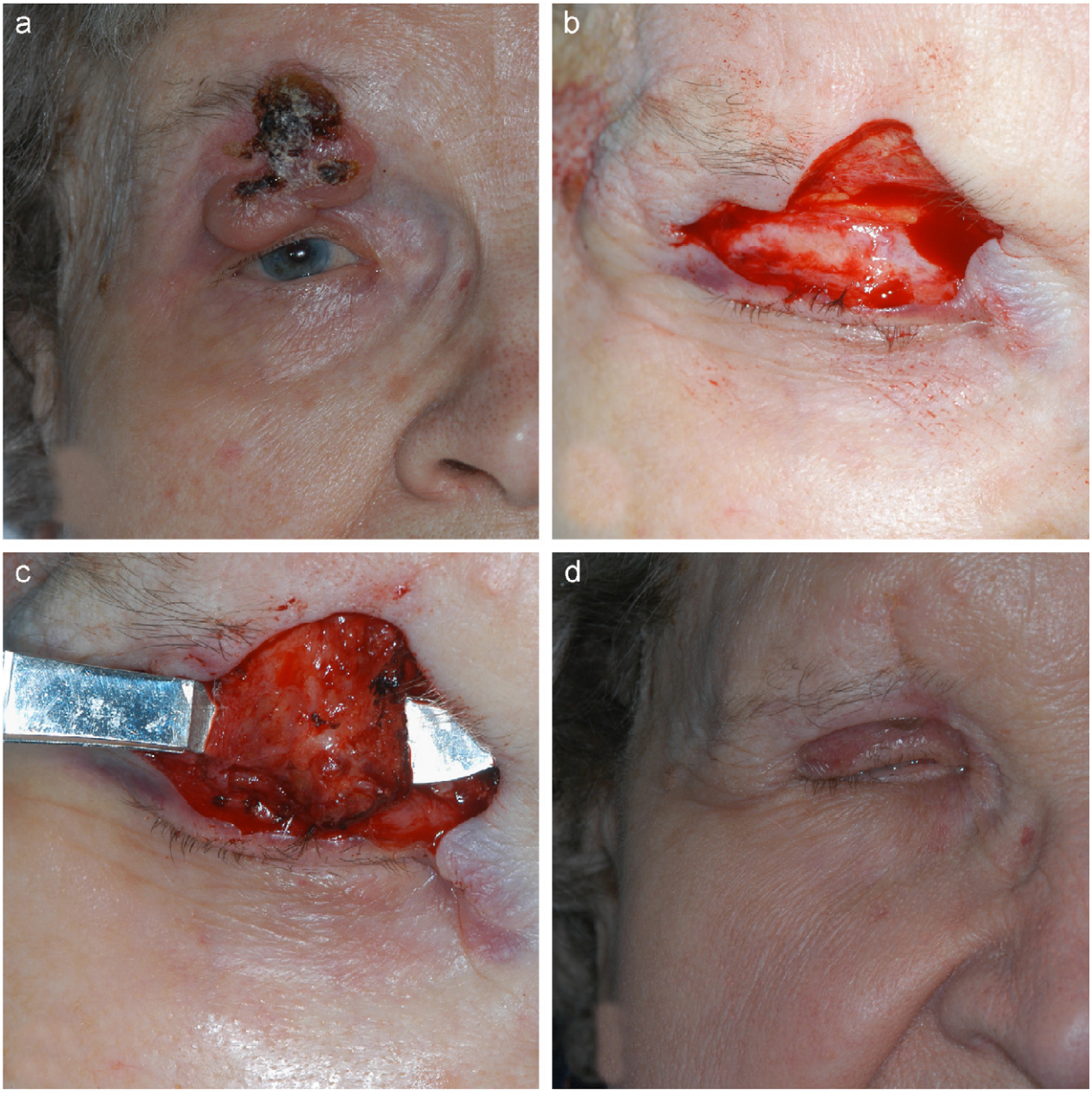

Fig. 1 (a) Preoperative photo showing upper eyelid lesion, (b) defect after excision of lesion, (c) reconstruction showing frontalis muscle flap in place and (d) one month postoperative view.

examination of the eyelid tumor showed intermediate-sized polygonal cells with mildly variable oval nuclei containing finely to coarsely reticular chromatic and prominent nucleoli. The cells formed a few sheets and contained discernible amounts of amphophilic cytoplasm (Fig. 2a). Stains revealed the cells to be positive for CD3 (Fig. 2b), CD45 RO (Fig. 2c), and CD30 (Fig. 2d); negative for CD2, EMA, CD117, bcl-2, and CD79-A. The initial biopsy diagnosis was confirmed as anaplastic large-cell lymphoma. At 1-month follow up the patients visual field deficit had resolved and she was able to close her eye without difficulty (Fig. 1d). There was no evidence of xerophthalmia. At the patient's last clinic visit, 3.5 years following her surgery, she is still symptom free.

Discussion

The first reported case of CTCL was by Alibert in 1806 when he reported on a patient who had skin eruptions that progressed into mushroom-like tumors [7]. The next progression in the description of CTCL came in 1938 when Sézary described a triad of intensely pruritic erythroderma, lymphadenopathy, and abnormal hyperconvoluted monstrous cells in the peripheral blood which is now recognized as Sézary syndrome [8]. Since these early descriptions, CTCL has come to be recognized as a spectrum of disease with the adoption of the term CTCL in 1979 by the National Cancer Institute [9]. The spectrum of disease is reflected in the lack of a central classification for the disease. The Kiel Classification, Working Formulation, the Revised European-American Lymphomas Classification, the European Organization for Research and Treatment of Cancer, and the Worth Health Organization Classification have all been proposed though each has its limitations [1,10].

The first identification of the T cell being the neoplastic cell of origin of CTCL came in 1973 [10]. Most patients have a disease of post-thymic mature T cells [10]. One of the variants of CTCL is a CD30 positive phenotype. These tumors generally present as solitary nodules with only 25% having regional lymph node involvement [10]. Prognosis is good with complete or partial regression occurring. The tumor cells often have an anaplastic appearance with round, oval, or irregularly shaped nuclei, prominent nucleoli, and abundant cytoplasm. The immunophenotype shows CD4+ and a majority of CD30+ cells. Radiotherapy is the treatment of choice for localized tumors with addition of

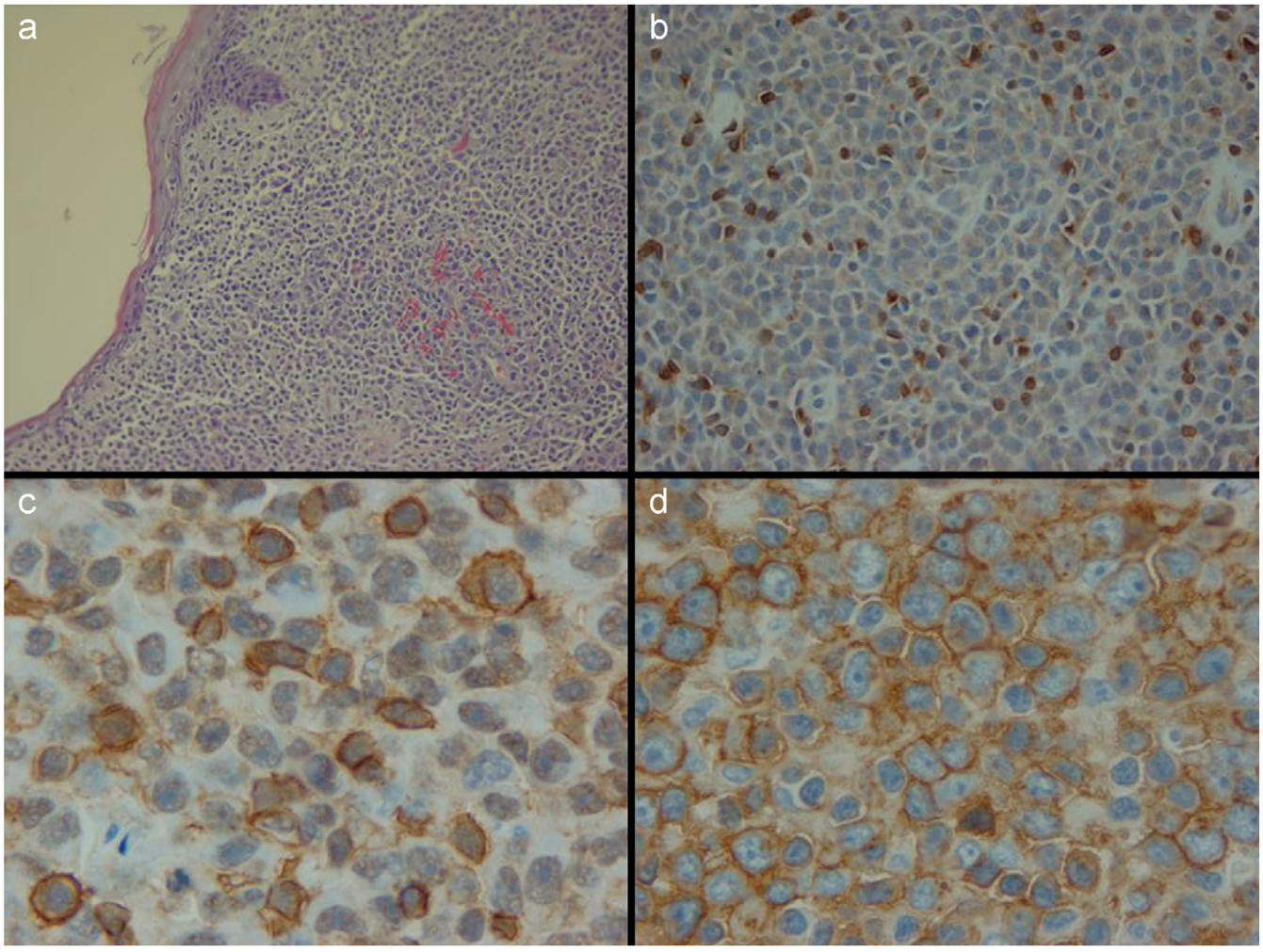

Fig. 2 (a) H & E Stain at 100 × power, (b) CD3 stain, (c) CD45 RO stain and (d) CD30 stain.

chemotherapy for patients with generalized skin lesions or systemic spread [10,11].

CTCL represents just over 2% of all lymphomas in the United States [12]. Children are rarely affected and the average age at presentation is 50 [12]. Men are affected twice as often as women and African Americans are affected twice as often as Caucasians [13].

Ocular manifestations of CTCL can include both intraocular and extraocular conditions. In a review of their experience at the Mayo clinic, Cook and colleagues [14] showed that the most common findings in their patients with CTCL was eyelid ectropion, though other manifestations including eyelid thickening or edema, tumor, blepharitis, and keratitis were also possible. In a study of 30 patients with mycosis fungoides, Stenson and Ramsay [15] found eyelid tumors in eight of their patients. Limited CTCL in the eyelid is rare [16]. Gilbertson [17] performed a literature review in his report of a patient with eyelid CTCL which revealed only eight previous reports of isolated CTCL, most diagnosed as mycosis fungoides. This type of lymphoma is frequently treated with radiation therapy [18].

If radiation therapy is to be used for eyelid lesions, great care must be taken with eye hygiene. A common side effect of upper eyelid radiation is xerophthalmia from destruction of the lacrimal gland. In addition, eyelid shielding must be used to help prevent radiation retinopathy [19].

There are varied treatments for CTCL though surgery is not considered a primary treatment for cure. Treatments range from conservative skin care with hydrations, emollients, topical corticosteroids, and ultraviolet B treatments for early stages to external electron beam radiation with possible topical and/or system chemotherapy. Extracorporeal photophoresis has also shown some benefit in patients with Sézary syndrome [20]. Relapses are common and can produce an indolent course, as illustrated by Kirsch's case report of a patient with multiple recurrences of systemic T-cell lymphoma after initial presentation with only an eyelid mass treated with systemic chemotherapy and local radiation [21].

An extensive review of the literature showed that lymphoma isolated to the ocular adnexa is a rare diagnosis. However, it should always be included in the differential diagnosis of any patient presenting with progressive swelling of the eyelid or ocular region. In addition to the rarity of this disease process, one of the compounding problems in obtaining the proper diagnosis is the vast array of subtypes, which further dilutes the literature base on the proper treatment of this disease.

One of the more frequently occurring subtypes of ocular lymphoma is the natural killer/ T-cell lymphoma subtype. Within this type of lymphoma, the mass can either present as Epstein-Barr virus positive or negative, although this finding has not been found to have any effects on treatment determination or outcomes. Treatment of this type of tumor can occur through either surgical resection [22] vs. treating the patient with chemotherapy alone [23]. If treated by surgical resection, the patient may still be treated with post-operative chemotherapy [24], depending on the individual's response following the resection. Due to the fact that the sheer numbers of patients are too small, no recommendations can me made as to the most effective treatment modality.

Other rare subtypes of ocular lymphoma that have been presented in the literature include the d'Emblee variant [25] and lymphoma containing sarcoid-like granulomas [26]. Both of these types have been shown to be effectively treated with surgery alone.

In our patient, though radiation therapy would have been the accepted treatment of her disease, we opted for surgical treatment for multiple reasons. The patient's disease has already shown itself to follow an indolent course, spanning 6 years between occurrences. Given her advanced age, it was more likely that the patient would have other medical problems before having to be concerned with this disease. Second, the patient's better-seeing eye was the eye affected with the disease. External beam radiation would have certainly caused complications leading to a decrease in visual acuity or at least an increase in care needed for the eye. Third, the patient showed no evidence of systemic disease and given her overall medical condition would not have tolerated chemotherapy.

References

[1] Kuzel T, Guitart J, Rosen S. Cutaneous T-cell lymphomas. In: Hoffman, editor. Hematology: basic principles and practice. 3rd ed. New York: Churchill Livingston; 2000.
[2] Gibertson EO, Hunt SJ, Spellman MC. Cutaneous T-cell lymphoma of the eyelid in a patient with acquired immunodeficiency syndrome. Cutis 1996;57(6):437–40.
[3] Meekins B, Proia AD, Klintworth GK. Cutaneous T-cell lymphoma presenting as a rapidly enlarging ocular adnexal tumor. Ophthalmology 1985;92(9):1288–93.
[4] Henderson JW, Banks PM, Yeatts RP. T-cell lymphoma of the orbit. Mayo Clinical Proceedings 1989;64(8):940–4.
[5] Kirsch LS, Brownstein S, Codere F. Immunoblastic T-cell lymphoma presenting as an eyelid tumor. Ophthalmology 1990;97(10):1352–7.
[6] Mencia-Gutierrez E, Gutierrez-Diaz E, Salamanca J, Martinez-Gonzalez MA. Cutaneous presentation on the eyelid of primary, systemic, CD30+, anaplastic lymphoma kinase (ALK)-negative, anaplastic large-cell lymphoma (ALCL). International Journal of Dermatology 2006;45(6):766–9.
[7] Alibert JLM. Description des maladies de la peau: observées a l'Hopital Saint-Louis, et exposition des meilleures méthodes suivies pour leur traitement. Paris: Chez Barrois l'ainé et fils; 1806.
[8] Sézary A, Bouvrain Y. Erythrodermie avec présence de cellules monstrueuses dans le derme et le sang circulant. Bulletin Soc Franc de Dermat et Syph 1938;1:335–43.
[9] Lamberg SI, Bunn Jr. PA. Proceedings of the workshop on cutaneous T-cell lymphomas (mycosis fungoides and sézary syndrome). Cancer Treatment Reports 1979;63:561–4.
[10] Habermann T, Pittelkow M. Cutaneous T-cell lymphoma and cutaneous B-cell lymphoma. In: Abeloff, editor. Clinical oncology. 3rd ed. Philadelphia: Elsevier Churchill Livingstone; 2004. p. 3078.
[11] Onesti MG, Mazzocchi M, De Leo A, Scuderi N. T-cell lymphoma presenting as a rapidly enlarging tumor on the lower eyelid. Acta Chirurgia Plastica 2005;47(3):65–6.
[12] Cook Jr. BE, Bartley GB, Pittelkow MR. Ophthalmic abnormalities in patients with cutaneous T-cell lymphoma. Ophthalmology 1999;106(7):1339–44.

[13] Weinstock MA, Horm JW. Mycosis fungoides in the United States. Increasing incidence and descriptive epidemiology. JAMA. 1988;260(1):42–6.
[14] Cook Jr. BE, Bartley GB, Pittelkow MR. Ophthalmic abnormalities in patients with cutaneous T-cell lymphoma. Ophthalmology 1999;106(7):1339–44.
[15] Stenson S, Ramsay DL. Ocular findings in mycosis fungoides. Archives of Ophthalmology 1981;99(2):272–7.
[16] Gibertson EO, Hunt SJ, Spellman MC. Cutaneous T-cell lymphoma of the eyelid in a patient with acquired immunodeficiency syndrome. Cutis 1996;57(6):437–40.
[17] Gibertson EO, Hunt SJ, Spellman MC. Cutaneous T-cell lymphoma of the eyelid in a patient with acquired immunodeficiency syndrome. Cutis 1996;57(6):437–40.
[18] Ing E, Hsieh E, Macdonald D. Cutaneous T-cell lymphoma with bilateral full-thickness eyelid ulceration. Canadian Journal of Ophthalmology 2005;40(4):467–8.
[19] Cook Jr. BE, Bartley GB, Pittelkow MR. Ophthalmic abnormalities in patients with cutaneous T-cell lymphoma. Ophthalmology 1999;106(7):1339–44.
[20] Cook Jr. BE, Bartley GB, Pittelkow MR. Ophthalmic abnormalities in patients with cutaneous T-cell lymphoma. Ophthalmology 1999;106(7):1339–44.
[21] Kirsch LS, Brownstein S, Codere F. Immunoblastic T-cell lymphoma presenting as an eyelid tumor. Ophthalmology 1990;97(10):1352–7.
[22] Hashimoto Y, Hashimoto N, Furuta S, Sugawara T, Kosugi N, Hata M, et al. A case of Epstein-Barr virus-associated natural killer/T-cell lymphoma presenting as dermatomyositis: extranodal relapse after 7 years in remission. Modern Rheumatology 2005;15(6):435–9.
[23] Woog JJ, Kim YD, Yeatts RP, Kim S, Esmaeli B, Kikkawa D, et al. Natural killer/T-cell lymphoma with ocular and adnexal involvement. Ophthalmology 2006;113(1):140–7.
[24] Sjo LD, Juhl BR, Buchwald C, Prause JU, Ralfkiaer E, Sjo NC, et al. Epstein–Barr positive T-cell lymphoma in the ocular region. European Journal of Ophthalmology 2006;16(1):181–5.
[25] Guanche AD, Bohjanen K, Tope WD. Surgical treatment of obstructive palpebral tumors in d'emblee variant of cutaneous T-cell lymphoma. Dermatological Surgery 2004;30(12 Part 2):1568–71.
[26] Behbehani RS, Bilyk JR, Haber MM, Savino PJ. Orbital lymphoma with concomitant sarcoid-like granulomas. Ophthalmological Plastic and Reconstructive Surgery 2005;21(6):458–61.