Squamous Cell Carcinoma of the Lacrimal Sac : A Case Report†

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Abstract

Lacrimal sac tumors are rare tumors of the periorbital region. The authors report a case of squamous cell carcinoma of the lacrimal sac in a 47-year-old Thai man. The patient presented with epiphora and a palpable mass in the medial canthal area. The diagnosis was confirmed by the pathological studies. Radical surgery and radiation therapy were given. Early detection and long-term follow-up are necessary.

Key word : Lacrimal Sac Tumor, Medial Canthal Mass, Nasolacrimal Duct Obstruction, Epiphora

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Lacrimal sac tumors are rare tumors of the periorbital region. Less than 400 cases are found in the literature. This includes a few series and a scattering of case reports[1-20]. The tumors are divided into epithelial and nonepithelial neoplasms. Primary epithelial neoplasms are the most common tumors found, followed by mesenchymal tumors and other exceedingly rare lesions. The most common benign epithelial tumors are squamous and transitional cell papillomas. The most common malignant epithelial neoplasm is squamous cell carcinoma. Tumors of the lacrimal sac are more often malignant than benign[2,5]. In order

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to differentiate the lacrimal sac tumor from the commoner acute inflammation of the lacrimal sac requires a good history and thorough physical examination[3]. If the lacrimal sac tumor is suspected, additional procedures to diagnose this type of tumor and otolaryngologic consultation are necessary since survival is significantly affected when diagnosis and treatment are delayed[4]. Based on MEDLINE literature search, only a limited number of reports of squamous cell carcinoma of the lacrimal sac are available[1-3,7,17,18].

CASE REPORT

A 47-year-old Thai male was referred to our center with the chief complaint of tearing in his right eye for a two-year period. He had noticed a rapid growing mass in the right medial canthus for three months. He denied irritation, pain, double vision, decreased vision or bloody discharge from the nose or right lacrimal system. The left eye was normal. He had no history of trauma, infection, sinus problems or systemic disease, except for thyrotoxicosis for 7 years. He was not taking any medication at the time. He had a history of smoking for 30 years.

Physical examination found no associated systemic abnormality. Eye examination showed visual acuity of 6/9 OD and 6/6 OS. Examination of the right orbital area showed a hard lobulated, well defined, no tenderness mass fixed to the bone in the area of right lacrimal fossa. This mass extended above the medial canthal tendon and displaced the right globe laterally. It measured approximately 25 x 15 mm in diameter (Fig. 1). Palpation and massage produced no discharge from the punctum. There was no proptosis. Anterior segment, posterior pole, extraocular movement examination and applanation tonometry were normal. Laboratory findings including CBC, urinary analysis and chest film were within normal limits. Irrigation and probing tests showed the obstruction and soft stop. Computed tomography of the orbits demonstrated an inhomogeneous soft tissue mass with irregular margin at right lacrimal sac, invading sclera and preseptal area of the right orbit and displaced the right orbit laterally (Fig. 2 and 3). There was downward extension into the proximal nasolacrimal duct and eroded nasolacrimal bone. These findings were consistent with a lacrimal sac tumor. Consultation with the otolaryngologist was done. The diagnostic biopsy was performed by the ophthalmologist. Tissue pathology of the tumor in permanent sections composed of nests and strands of cells varying in size, with hexagonal to polygonal shapes, large hyperchromic nuclei, no keratinization in cytoplasm, and mitotic figure (Fig. 4). The diagnosis was poorly differentiated squamous cell carcinoma.

With this pathologic result, the patient was re-operated on to remove the whole tumor by external and endoscopic approach under frozen section control 2 weeks later by team of ophthalmologists and

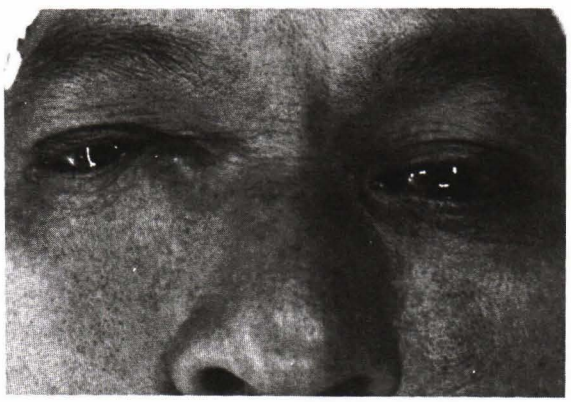

Fig. 1. Clinical findings show 25 x 15 mm well defined mass in the right periorbital area extending above the medial canthal tendon.

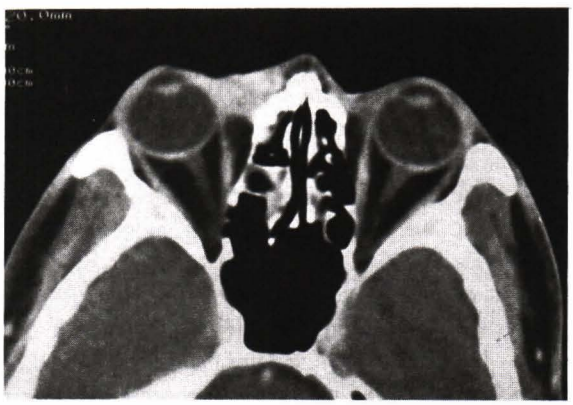

Fig. 2. The axial CT scan of the orbit demonstrated inhomogeneous soft tissue mass with irregular margin at right lacrimal sac invading the sclera and preseptal area of the right orbit.

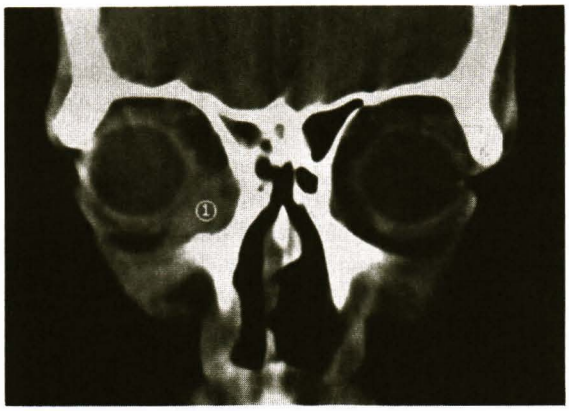

Fig. 3. **The coronal CT scan of the orbits demonstrated the right lacrimal sac mass with erosion of the nasolacrimal bone.**

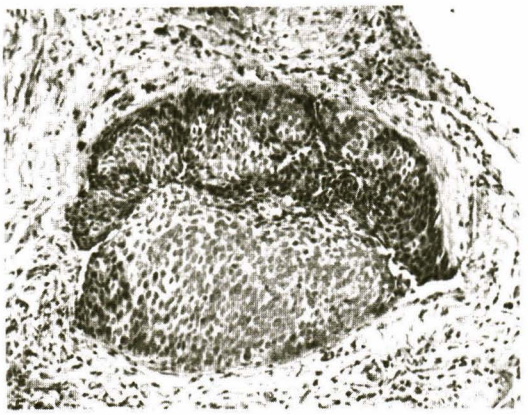

Fig. 4. **Lacrimal sac biopsy specimen showing the nests and strands of polygonal shape cells varying in size, with large hyperchromic nuclei, no keratinization in cytoplasm, and mitotic figure. (Hematoxylin-eosin stain, original magnification x100)**

otolaryngologists. At surgery, a soft, friable tumor filled the sac involved lateral nasal bone and extended 1 cm into the nasolacrimal duct. Post-operatively, the patient received external radiation (6,600 cGy, 33 fractions) at the area of the lacrimal sac and nasolacrimal duct as the adjuvant therapy.

DISCUSSION

Tumors of the lacrimal sac are seen most often in the fifth decade[2,5,10] with equal sex predilection[13]. Early symptoms are often mistaken for simple dacryocystitis[8,9,13]. The most common presenting signs and symptoms are epiphora (53%)[3-5,8,13,16], recurrent dacryocystitis (38%)[5], and/or lacrimal sac mass (36%)[5]. The clinical stages of lacrimal sac carcinoma discussed by Jones[6] occurred in this case. The early symptoms include tearing and, when infection is superimposed, dacryocystitis. A painless nonreducible mass in lacrimal sac region occurs, and then extends outside the sac.

In this case, clinical presentation of 3-month duration of indurated mass and epiphora in the right medial canthal area suggested the possibility of an initial evaluation of tumor. The additional procedures include plain film, dacryocystogram, computerized tomographic (CT) or magnetic resonance imaging (MRI) scans, and tissue biopsy. Otolaryngologic consultation should be performed prior to excision of the tumor mass.

Surgical excision and thorough examination of the surgical resection lines will give better prognosis when the tumor is confined within the lacrimal sac. However, the present patient already showed early invasion into the lateral nasal wall and nasolacrimal duct. Therefore, it is imperative to resect these tumors totally. Post-operative radiotherapy is a necessary adjunct for proper treatment.

Because lacrimal sac tumors are rare, large studies with statistically meaningful data on management and prognosis are unavailable. A review of the literature shows that epithelial carcinomas of the lacrimal sac are quoted to have a recurrence rate of 50 per cent[4,5,7-10,21,22], with 50 per cent of those being fatal[5,21,22]. Recurrences can be local or to distant organs *via* vascular or lymphatic routes[8,9,23]. Death results from metastases, most often to the neck and lung[9]. Intracranial involvement through the cribriform plate is also a potential lethal complication. Various authors have reported five-year survival rates ranging from 50 per cent to 85 per cent[9,13]. The prognosis of lacrimal sac carcinoma depends on early detection, the type of tumor and complete excision before the tumor extends beyond the sac. If epidermoid carcinoma of the lacrimal sac is suspected,

early diagnosis and treatment are necessary. An aggressive surgical approach is strongly recommended because review of the literature shows that the prognosis for these tumors is very grave. Because of the poorly differentiated type of tumor in the presented patient, close long-term follow-up is essential.

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REFERENCES

1. Pe'er JJ, Stefanyszyn M, Hidayat AA. Nonepithelial tumors of the lacrimal sac. Am J Ophthalmol 1994; 118: 650-8.
2. Stephenson JA, Mayland DM, Ingall G, Frank TW. Squamous cell carcinoma of the lacrimal sac. Otolaryngol Head Neck Surg 1988; 99: 524-7.
3. Bonder D, Fischer MJ, Levine MR. Squamous cell carcinoma of the lacrimal sac. Ophthalmology 1983; 90: 1133-5.
4. Ni C, D'Amico DJ, Fan CQ, Kuo PK. Tumors of the lacrimal sac: A clinicopathological analysis of 82 cases. Int Ophthalmol Clin 1982; 22: 121-40.
5. Stefanyszyn MA, Hidayat AA, Pe'er JJ, Flanagan JC. Lacrimal sac tumors. Ophthal Plast Reconstr Surg 1994; 10: 169-84.
6. Jones IS. Tumors of the lacrimal sac. Am J Ophthalmol 1956; 42: 561-6.
7. De Stefani A, Lerda W, Usai A, Cavalot A, Riella P, Bussi M. Squamous cell carcinoma of the lacrimal drainage system: Case report and literature review. Tumori 1998; 84: 506-10.
8. Flanagan JC, Stokes DP. Lacrimal sac tumors. Ophthalmology 1978; 85: 1282-7.
9. Schenck NL, Ogura JH, Pratt LL. Cancer of the lacrimal sac. Presentation of five cases and review of the literature. Ann Otol Rhinol Laryngol 1973; 82: 153-61.
10. Ryan SJ, Font RL. Primary epithelial neoplasms of the lacrimal sac. Am J Ophthalmol 1973; 76: 73-88.
11. Harry J, Ashton N. The pathology of tumours of the lacrimal sac. Trans Ophthalmol Soc UK 1969; 88: 19-35.
12. Radnot M, Gall J. Tumors of the lacrimal sac. Ophthalmologica 1966; 151: 2-22.
13. Hornblass A, Jakobiec FA, Bosniak S, Flanagan J. The diagnosis and management of epithelial tumors of the lacrimal sac. Ophthalmology 1980; 87: 476-90.
14. Spratt CN. Primary carcinoma of the lacrimal sac. Arch Ophthalmol 1987; 18: 267.
15. Bambirra EA, Miranda D, Rayes A. Mucoepidermoid tumor of the lacrimal sac. Arch Ophthalmol 1981; 99: 2149-50.
16. Khalil MK, Lorenzetti DW. Epidermoid carcinoma of the lacrimal sac: A clinicopathological case report. Can J Ophthalmol 1980; 15: 40-3.
17. Fishman JR, Gladstone GJ, Jackson IT. Squamous cell carcinoma of the lacrimal sac. Plast Reconstr Surg 1993; 92: 1375-9.
18. Griffith BH. Squamous cell carcinoma of the lacrimal sac. Plast Reconstr Surg 1967; 40: 332-6.
19. Yip CC, Au EK, Choo CT. Lacrimal sac tumour presenting with blood-stained ocular discharge. Singapore Med J 2002; 43: 156-8.
20. Sabet SJ, Tarbet KJ, Lemke BN, Smith ME, Albert DM. Granular cell tumor of the lacrimal sac and nasolacrimal duct: No invasive behavior with incomplete resection. Ophthalmology 2000; 107: 1992-4.
21. Spaeth EB. A surgical technique for lacrimal sac malignancy. Trans Ophthal Soc UK 1969; 89: 351-4.
22. Spaeth EB. Carcinomas in the region of the lacrimal sac. Arch Ophth 1957; 57: 689-93.
23. Paxton BR, Davidorf FH, Makley TA Jr. Carcinoma of lacrimal canaliculi and lacrimal sac. Arch Ophthalmol 1970; 84: 749-53.

เนื้องอกของถุงน้ำตาชนิด Squamous cell carcinoma : รายงานผู้ป่วย 1 ราย

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โรคเนื้องอกของถุงน้ำตา (Lacrimal sac tumor) เป็นโรคที่พบได้น้อยมาก ผู้เขียนได้รายงานผู้ป่วยเนื้องอกของถุงน้ำตาชนิด Squamous cell carcinoma ในผู้ป่วยชายไทยอายุ 47 ปีที่มาด้วยอาการน้ำตาไหลและมีก้อนที่หัวตา การวินิจฉัยโรคนี้ได้จากการตรวจทางพยาธิวิทยา ผู้ป่วยได้รับการรักษาโดยการผ่าตัดและฉายรังสี แม้ว่าโรคนี้จะพบได้น้อยมาก แต่การรู้จักและเฝ้าระวังโรคจะทำให้สามารถให้การวินิจฉัยและรักษาได้เร็วขึ้น

คำสำคัญ : เนื้องอกของถุงน้ำตา, ก้อนที่หัวตา, การอุดตันของท่อน้ำตา, น้ำตาไหล

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