Parotid Mass as Presenting Symptom of Lymphoma*

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ABSTRACT: **Background:** Lymphomas arising from the parotid gland are an uncommon entity, said to account for only 0.6–5% of tumors or tumor-like lesions of the parotid, and are therefore commonly overlooked. This misdiagnosis often leads to unnecessary diagnostic procedures, delaying the initiation of proper treatment.

Objectives: To examine the clinical, diagnostic, therapeutic and survival data of patients with this disease.

Methods: We retrospectively reviewed our experience with patients diagnosed and treated for parotid lymphoma in our medical center during the period 1998–2008.

Results: The 13 patients in the series were aged 42–83. Twelve had non-Hodgkin's lymphoma and 1 had Hodgkin's lymphoma. In eight, parotid mass was the first manifestation of the disease, while in five who were in clinical remission its reoccurrence was first manifested in the parotid gland. Mean survival was 6.3 years

Conclusions: Since parotid lymphoma is uncommon, it is often overlooked in the differential diagnosis. Methods of diagnosing and treating parotid lymphoma are different from those of other parotid pathologies. A high index of suspicion is warranted in order to provide a quick and efficient diagnosis and treatment without subjecting the patient to unnecessary tests and procedures.

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KEY WORDS: parotid, lymphoma, salivary gland, B symptoms, fine needle aspiration

Primary lymphoma of the parotid is not often encountered in everyday practice. Reports describing series of patients and the preferred means of diagnosis and treatment are scarce [Table 1]. We review our experience with a series of 13 patients diagnosed with primary lymphoma of the parotid.

PATIENTS AND METHODS

We conducted a retrospective chart review of 13 patients aged 43 to 83 years with parotid mass who were diagnosed with parotid lymphoma and treated in our tertiary medical center between the years 1998 and 2008. In eight of them the mass was related to primary parotid lymphoma, while in five it was the first manifestation of its recurrence.

At the time of data accumulation there was no requirement for approval by an Institutional Review Board.

RESULTS

All patients [Table 2] in our series had a painless mass in their parotid gland [Figure 1]. None had B symptoms (i.e., fever, night sweats or weight loss). Mean age at presentation was 63.5 (age range 43–83 years). The male/female ratio was 1.6. One patient presented with bilaterally enlarged parotid glands; the rest had unilateral enlargement. Five patients had a previous diagnosis of lymphoma but were in clinical remission (ranging from 18 months to 10 years). When the patients were thoroughly examined for other sites of involvement, five had systemic findings on positron emission tomography–computed tomography. Clinically undetected submandibular lymph node involvement was found in two patients, retroperitoneal involvement in four, axillary in two (in one of whom it was bilateral) and inguinal nodes in one. Diagnosis was made in

Table 1. Series of parotid lymphoma in the literature

Author, year [ref]	Patients with primary parotid lymphoma	Treatment	Survival
Freedman, 1971 [19]	8	NA	NA
Hyman & Wolff, 1976 [13]	30	Local excision + Rx	NA
Colby & Dorfman, 1979 [20]	42	NA	NA
Schmid et al., 1982 [21]	21	NA	83% 5 yrs
Gleeson et al., 1986 [22]	21	Local excision + Rx	49 mos
Schusterman et al., 1988 [9]	19	NA	NA
Takahashi et al., 1990 [23]	14	NA	NA
Mehle et al., 1993 [5]	18	Cx/Rx	83.4 mos
Barnes et al., 1998 [11]	33	Cx/Rx	75% 2 yrs
von Stritzky et al., 1998 [8]	7	Cx/Rx	85% 66 mos
Allen et al., 1999 [24]	12	NA	NA
Tiplady et al., 2004 [1]	136	NA	90 mos
Dunn et al., 2004 [25]	13	Cx/Rx	94.7% 5 yrs

Cx = chemotherapy, Rx = radiotherapy

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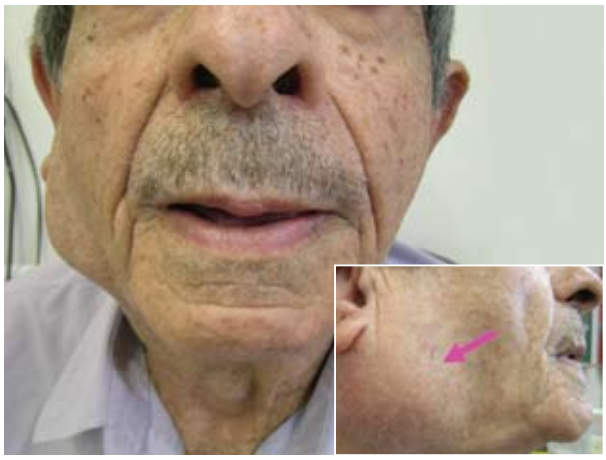
Table 2. Demographics, diagnostic procedures and CT findings

Patient #	Gender/ Age (yrs)	Extraparotid involvement on CT	Fine needle aspiration	Diagnostic procedure
1	M/54	Yes	No	Biopsy
2	F/43	No	No	Partial parotidectomy
3	M/46	No	Yes (non-diagnostic)	Biopsy
4	F/76	No	No	Biopsy
5	M/53	Yes	No	Biopsy
6	F/70	No	No	Partial parotidectomy
7	M/75	No	Yes (non-diagnostic)	Biopsy
8	M/83	Yes	Yes (non-diagnostic)	Biopsy
9	M/76	Yes	Yes (non-diagnostic)	Parotidectomy
10	M/54	Yes	Yes (non-diagnostic)	Biopsy
11	F/50	Yes	Yes (non-diagnostic)	Biopsy
12	M/73	No	Yes (non-diagnostic)	Biopsy
13	F/72	No	No	Parotidectomy

Figure 1. Periauricular mass in a 76 year old man with parotid lymphoma



all patients on the basis of histologic and immunohistologic findings consistent with lymphoma. Tissue was obtained by open biopsy in nine of the patients and by parotidectomy in four. Seven had previously had fine needle aspiration, which was non-diagnostic. None of our patients suffered any permanent injury to the facial nerve; one had transient unilateral facial nerve weakness with complete spontaneous resolution 2 months after surgery. The histologic examination results are presented in Table 3. All patients but one were treated in our hemato-oncology department and records of this patient were not available. Five patients were graded as stage I disease, one stage II, two were stage III and two were stage III-IV. For three of the patients there were no data regarding clinical staging (in two because of the urgency to start treatment and the third was

Table 3. Hematologic data and survival

Patient #	Type of B cell lymphoma	Stage on presentation	Initial treatment	Radiation	Follow-up (yrs)	Survival
1	Mixed cell	III	Chlorambucil	Yes	9	Alive
2	Marginal cell	I	CHOP	Yes	10	Alive
3	Large cell	I	CHOP	Yes	9	Alive
4	Large cell	NA	COP	No	3	3 yrs
5	Follicular	III	NA	No	10	Alive
6	Follicular	III/IV	Chlorambucil	No	7	Alive
7	T cell rich	NA	CHOP	No	9	9 yrs
8	Large cell	II	R-CHOP	No	4	Alive
9	B cell lymphoma	NA	NA	NA	3	Alive
10	Low grade	III/IV	R-CHOP	Yes	2	Alive
11	Mixed cell	Ia	ABVD	Yes	3	Alive
12	Large cell	I	CHOP	Yes	1	Alive
13	Follicular	I	No	No	1	Alive

CHOP = cyclophosphamide, doxorubicin, vincristine, prednisone
R-CHOP = CHOP + rituximab
ABVD = adriamycin, bleomycin, vinblastine, dacarbazine
NA = not available

treated elsewhere). Treatment was mainly chemotherapy, with five patients having the CHOP protocol, two chlorambucil, one COP and one ABVD. Six also had radiation therapy. Only two patients died; their deaths were disease related. Mean survival was 6.3 years [Table 2].

DISCUSSION

Salivary gland tumors are responsible for only 3–4% of primary head and neck tumors. The parotid gland is by far the most common site for salivary gland malignancies, accounting for 70–80% of all salivary gland malignancies [1,2], with an estimated incidence of 1.2 per 100,000 persons [3]. The most common malignancy of the parotid is mucoepidermoid carcinoma followed by adenoidcystic carcinoma [2]. Malignancies account for only 20% of parotid-related tumors, yet the clinical manifestations in 80% of tumors diagnosed as malignant resemble those encountered in benign tumors [4].

Lymphoma is a very common malignancy and the second most common neoplasm of the head and neck after squamous cell carcinoma. Most of the non-Hodgkin's lymphomas arise primarily in the lymph nodes (71.9%), while only 29.1% are primarily extranodal. Primary parotid lymphoma accounts for only 0.87% of all NHL cases (3.1% of extranodal NHLs) [5-7]. This type of malignancy constitutes 0.2–0.8% of malignant tumors in the parotid gland [8], although there is concern in the literature that the prevalence of this rare malignancy

NHL = non-Hodgkin's lymphomas

has risen in recent decades [9,10]. The population known to have a much higher incidence of primary lymphoma of the parotid is the one with autoimmune diseases, the strongest correlation being with Sjögren syndrome [11,12].

There is controversy in the literature regarding whether the parotid is truly primarily involved or whether it arises in intraglandular lymph nodes [3]. Hyman and Wolff [13] proposed criteria for the diagnosis of primary parotid lymphoma: a) involvement of the salivary gland as the first clinical manifestation of disease; b) histologic proof that lymphosarcoma involves the salivary gland parenchyma, rather then being confined to soft tissue or a lymph node in the area; c) architectural and cytologic confirmation of the malignant nature of the infiltrate. For the purpose of this article we used these criteria and considered the lymphoma as a truly primary lymphoma regardless of whether it manifested first at the parotid gland or was the first manifestation of a reoccurrence in a patient previously diagnosed with lymphoma in remission.

Parotid lymphoma most commonly presents as a painless mass indistinguishable from other non-malignant or other more common epithelial tumors. This explains why this diagnosis is commonly overlooked and patients are often subjected to unnecessary procedures and a delay in diagnosis. In most cases the facial nerve is not jeopardized [3,11]. Diagnosing parotid lymphoma can be a difficult task, as evidenced by the unnecessary tests conducted before correct diagnosis is made [14]. Both from our experience and from the review of the literature, FNA is not diagnostic and therefore should be avoided whenever a high index of suspicion for lymphoma arises in the differential diagnosis (e.g., B symptoms, enlarged lymph nodes, or a previous history of lymphoma) [3,15,17]. In these cases, the most accessible lymph node should be biopsied. In the case of an isolated parotid mass, differentiating it is almost impossible and FNA is usually performed. CT scan may add information regarding the malignant nature of the disease, with signs such as irregular borders and extraparotid extension. Currently, there are still no pathognomonic findings indicative of lymphoma on CT [18]. The procedure of choice for the diagnosis of lymphoma in the parotid gland should be core biopsy.

CONCLUSIONS

Although primary parotid lymphoma is a rare entity, this diagnosis should always be kept in mind when a patient presents with a non-tender mass in this gland. The importance of considering this diagnosis cannot be overemphasized since it may save the patient from undergoing unnecessary diagnostic procedures, thereby prompting the appropriate medical treatment. The prognosis for a well-evaluated and appropriately treated patient with lymphoma presenting in the parotid gland is excellent.

FNA = fine needle aspiration

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