Parotid Gland Cancer Surgical Practice Guidelines

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By Ashok R. Shaha, MD, FACS [1], Robert M. Byers, MD, FACS [2], and Jose J. Terz, MD, FACS [3]

The Society of Surgical Oncology surgical practice guidelines focus on the signs and symptoms of primary cancer, timely evaluation of the symptomatic patient, appropriate preoperative evaluation for extent of disease, and role of the surgeon in diagnosis and treatment. Separate sections on adjuvant therapy, follow-up programs, or management of recurrent cancer have been intentionally omitted. Where appropriate, perioperative adjuvant combined-modality therapy is discussed under surgical management. Each guideline is presented in minimal outline form as a delineation of therapeutic options.

Since the development of treatment protocols was not the specific aim of the Society, the extensive development cycle necessary to produce evidence-based practice guidelines did not apply. We used the broad experience residing in the membership of the Society, under the direction of Alfred M. Cohen, MD, Chief, Colorectal Service, Memorial-Sloan Kettering Cancer Center, to produce guidelines that were not likely to result in significant controversy.

Following each guideline is a brief narrative highlighting and expanding on selected sections of the guideline document, with a few relevant references. The current staging system for the site and approximate 5-year survival data are also included.

The Society does not suggest that these guidelines replace good medical judgment. That always comes first. We do believe that the family physician, as well as the health maintenance organization director, will appreciate the provision of these guidelines as a reference for better patient care.

Society of Surgical Oncology Practice Guidelines: Parotid Gland Cancer

Symptoms and Signs

**Early-stage disease**
- Asymptomatic
- Lump in the parotid region

**Advanced-stage disease**
- Enlarged cervical lymph nodes
- Rapidly enlarging mass in the parotid region
- Mass in the parotid region that has been present for a long time, with recent rapid growth
- Facial weakness
- Pressure symptoms in the ear
- Involvement of the skin by a parotid mass
- Pain

Evaluation of the Symptomatic Patient

**Work-up**
- Clinical examination and thorough head and neck examination
- Fine-needle aspiration of the parotid mass in selected patients
CT scan for large tumors

**Appropriate timeliness of surgical referral**

- A lump in the parotid region should be considered a parotid tumor unless proven otherwise.
- If the patient's general condition is satisfactory, all parotid masses should be surgically removed both for diagnostic and therapeutic purposes.

**Preoperative Evaluation for Extent of Disease**

**Physical examination**

**Chest x-ray**

**CT scan**

- Indicated in selected patients to evaluate the extent of disease and the presence of nodal metastasis

**Role of the Surgeon in Initial Management**

**Surgical considerations**

- The surgeon's responsibilities include: making a standard parotid incision and being prepared to do a superficial parotidectomy with identification and preservation of the facial nerve.
- For most standard masses in the parotid region, surgical therapy includes superficial parotidectomy with identification and preservation of the facial nerve. In HIV-positive patients, local excision of a lymphoepithelial cyst may be considered.
- If the tumor shows a high-grade malignancy, the deep jugular lymph nodes should be evaluated and performance of a supraomohyoid neck dissection should be considered if there are no suspicious nodes.
- If the nodes are clinically apparent, a comprehensive neck dissection should be considered.
- If the facial nerve is functioning preoperatively, every attempt should be made to preserve it or, if the tumor is involving the nerve, to graft it.
- If the facial nerve is paralyzed preoperatively, a radical parotidectomy should be considered. Immediate nerve repair with the greater auricular nerve or sural nerve should be considered.

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The major salivary glands include the parotid, submandibular, and sublingual glands. In addition, there are approximately 600 to 700 minor salivary glands distributed throughout the upper aerodigestive tract.

Although salivary gland tumors are not very common, they represent an interesting clinical entity for which early diagnosis and appropriate treatment afford the best chance of cure. The incidence of salivary tumors is estimated at 40 cases per million people. Approximately 75% to 80% of these tumors involve the parotid gland.

The vast majority (80%) of parotid masses are benign, while only 20% are malignant. In contrast, 50% of submandibular salivary tumors and 80% of minor salivary gland tumors are malignant. Of parotid tumors, 90% originate in the superficial lobe of the parotid and only 10% arise from the deep lobe itself.

**Evaluation**

The diagnosis of a parotid gland tumor is based primarily on clinical examination. A lump in the parotid region should be considered a parotid tumor unless proven otherwise. Ancillary diagnostic tests include CT scanning and fine-needle aspiration biopsy. Computed tomography is very helpful in evaluating the extent of the tumor when clinical evaluation of
involvement of the deep lobe is difficult. In general, fine-needle aspiration is unnecessary for superficial parotid tumors. However, if there is a clinical dilemma regarding the extent of disease or whether a lesion is of salivary or nonsalivary pathology, fine-needle aspiration is of considerable help. Fine-needle aspiration is also useful in differentiating a mass in the tail of the parotid from an enlarged lymph node. It is vitally important to distinguish between a high neck mass and parotid tumor. The diagnostic accuracy of fine-needle aspiration exceeds 80%. However, the fine-needle aspiration biopsy findings should be critically evaluated in view of the clinical judgment. Other investigations, such as sialography and CT sialography, are not commonly used.

The operating surgeon should be prepared to make the appropriate incision for parotid exposure and be sufficiently skilled to find the facial nerve and preserve it. Evaluation of facial nerve function is very critical preoperatively and postoperatively. A functioning facial nerve rarely needs to be sacrificed.

**Histologic Classification**

The most common benign tumor is pleomorphic adenoma, which can be easily managed by superficial parotidectomy. Other benign tumors, such as lymphoepithelial cysts and oncocytomas, are occasionally seen and are also managed by superficial parotidectomy.

The most common malignant tumor of the parotid is mucoepidermoid carcinoma, which can be either high or low grade. Adenoid cystic carcinoma is a specific histologic entity with a high incidence of local recurrence and systemic metastasis.

Several histologic classifications of parotid tumors have been proposed. The simple method devised by Spiro at Memorial Sloan-Kettering Cancer Center is shown in Table 1, and a more elaborate classification method is shown in Table 2.

**Staging**

The TNM staging of salivary gland tumors is shown in Table 3, along with approximate 5-year survival rates by stage. T-staging of parotid tumors relates directly to the size of the tumor. Each T-stage is subdivided further depending on whether or not there is local extension. The incidence of lymph node metastasis in all parotid tumors is 15% to 25%. Overall survival is considerably poorer in the presence of lymph node metastasis. Rates of 10- and 20-year survival are 90% and 85%, respectively, in patients with stage I disease and 60% and 55%, respectively, in those with stage II disease. In patients with stage III or IV tumors, the 10-year survival rate is approximately 25% and the 20-year rate is approximately 15%.

Survival is also related to tumor grade. Survival is excellent for patients with low-grade tumors, ranging from 80% to 90% for 10 years. For those with high-grade tumors, survival is approximately 25% for 10-year follow-up.

Spiro and colleagues at Memorial Sloan-Kettering have described a different staging system that includes the presence of facial nerve dysfunction as an important factor. Facial nerve palsy in patients with parotid tumors indicates an overall poor prognosis.

**Treatment**

The mainstay of treatment of parotid tumors is adequate and appropriate surgery, which generally includes superficial parotidectomy. If a parotid tumor is locally excised or incised, the likelihood of local recurrence is high.

Lymphoepithelial cysts are common in HIV-positive patients, and local excision is adequate in such patients. If the tumor originates in the deep lobe of the parotid, appropriate therapy consists of a superficial parotidectomy and removal of the tumor with preservation of the facial nerve. Preservation of facial nerve function may be very difficult in patients with deep lobe parotid tumors. If the facial nerve or its branches are already involved with tumor and the patient has facial nerve weakness, the nerve should be sacrificed and reconstruction may be considered. If the proximal stump of the facial nerve is available and the distal branches can be identified, a nerve graft may be used. The greater auricular nerve is readily available for grafting. Prior to the surgical intervention, the likelihood of facial nerve weakness must be carefully explained to the patient.

Elective neck dissection is generally not considered. Only 15% to 25% of patients present with lymph node metastasis either at the time of initial diagnosis or during follow-up. In patients with high-grade, high-stage parotid tumors, supraomohyoid neck dissection may be considered as a
staging procedure. Postoperative radiation therapy has been used more commonly recently, except for small parotid tumors. The indications for postoperative radiation therapy include: high-grade, high stage tumor; lymph node metastasis; skin involvement. Locoregional recurrence has been significantly reduced by aggressive postoperative radiation therapy. Specialized centers have used neutron therapy for advanced or recurrent parotid tumors, with satisfactory results.

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