Management of the Neck during Salvage Surgical Treatment for Recurrent Head and Neck Squamous Cell Carcinoma after Organ Preservation Protocols

An Essay

A Systematic Review Submitted for Partial Fulfillment of Master Degree in Otorhinolaryngology

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List of Abbreviations

AJCC	American Joint Committee on Cancer.
ECS	Extracapsular spread.
HNSCC	Head neck squamous cell carcinoma.
PORT	Postoperative radiotherapy.
SCC	Squamous cell carcinoma.
PET	Positron emssion tomography.
SCM	sternocleidomastoid muscle.
MECC	Middle-East Cancer Consortium.
HPV	human papilloma virus.
CRT	Chemoradiotherapy.
CCRT	Concurrent chemoradiotherapy.
CCR	Clinical complete response.
CPR	Clinical partial response.
LRR	Locoregional response.
ND	Neck dissection.
eCR	Equivocal complete response.
OS	Overall survival.
PCR	Partial clinical response.
RFS	Recurrence free survival.
ICR	Incomplete clinical response.

PL	Partial laryngectomy.
TL	Total laryngectomy.
DFS	Disease free survival.
RND	Radical neck dissection.
SND	Selective neck dissection.
MRND	Modified radical neck dissection.
CT	Computed tomography.
LN	Lymph node.
NA	Not applicable.
cN0	Clinically negative neck.
DSS	Disease specific survival.
SPL	Salvage partial laryngectomy.
STL	Salvage total laryngectomy.

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Introduction

Cancer of the head and neck includes all cancers arising from the upper aerodigestive tract, and typically refers to squamous cell carcinomas of the head and neck, which are the predominant group. Head and neck squamous cell carcinoma has shown a gradual increase in incidence over the last years ***(Parkin and Bray, 2006)*.**

Approximately 30 to 40% of patients present with early stage I/II disease. These patients in general are treated with curative intent by single modality treatment using either radiation or surgery alone. Because both modalities result in similar rates of local control and survival, the choice of treatment is usually based upon an assessment of functional outcomes and competing morbidities. When surgery is used as primary treatment, adjuvant radiotherapy is added if there are positive or close margins, bone erosion or pathologically positive lymph nodes, although combined radiochemotherapy has been shown to further improve outcome in some high risk patients ***(Cooper et al., 2004)*.**

Treatment goals for patients with resectable locally advanced disease are to maximize cure while maintaining functional status through organ preservation. Surgery combined with radiotherapy results in locoregional control and 5-year survival was usually below 30%, and therefore combined

modality approaches, which included chemotherapy, were tested in large randomized trials ***(Forastiere et al., 2003)***.

In cases with laryngeal carcinoma preservation of the larynx and local control were best achieved with concurrent chemoradiotherapy, which led to 43% absolute reduction in the rate of laryngectomy ***(Lee et al., 2006)***.

Up to 50% of patients who die from head and neck squamous cell carcinoma have locoregionally recurrent disease as the sole site of failure. Treatment options for those patients depend on primary treatment strategies. Patients treated with surgery alone should receive radiotherapy. Previously irradiated patients who have potentially resectable recurrence should undergo resection. If surgical salvage is not feasible alternatives include additional irradiation or palliative chemotherapy ***(Gibson et al., 2005)***.

Although chemotherapy is of major palliative benefit in patients with symptomatic metastatic or incurable recurrent disease, impact on survival remains unclear. The average survival for patients receiving chemotherapy is six to eight months, which is slightly larger compared to supportive care alone. Therefore palliative treatment strategies should focus not only on response rates but also on toxicities and life quality aspects ***(Gibson et al., 2005)***.

The optimal management of the neck in loco-regionally advanced head & neck squamous cell carcinomas recurrence following primary chemo-radiotherapy remains controversial ***(Garg and Beitler, 2004)*.**

Traditionally neck dissection was thought to improve neck control in patients with regionally advanced disease (N2–N3 disease) treated with radical radiotherapy alone ***(Mendenhall et al., 2002)*.**

However, with the incorporation of chemotherapy in the therapeutic strategy for advanced head and neck squamous cell carcinoma and resultant improvement in outcome, the routine use of post chemo-radiotherapy neck dissection is being questioned ***(Grabenbauer et al., 2003)*.**

Some authors recommend neck dissection for bulky nodal disease after chemo-radiation as part of organ preservation protocol in an elective manner, regardless of the response in the neck provided the primary is controlled. Others argue that it is an ineffective procedure and should be abandoned. Nevertheless, most investigators agree that elective neck dissection be performed for patients with less than a complete response in the neck after combined modality therapy to optimize regional control. This review attempts to provide the discerning reader a bird's eye view of the available evidence on this controversial issue ***(Corry et al., 2001)*.**

The inclusion of neck dissection as part of standard therapy for patients treated with either radiation therapy alone or radiation therapy plus chemotherapy has been controversial ***(Dagumet al., 1998)*.**

Aim of the Work

In this work we are aiming at researching the utility of neck dissection during salvage surgery in recurrent head and neck squamous cell carcinoma after failure of organ preservation protocols and to find consensus of different views regarding neck dissection in patients with recurrent head and neck squamous cell carcinoma after chemoradiotherapy.

Review of Literature

Cancers of the head and neck:

Cancers that are known collectively as head and neck cancers usually begin in the squamous cells that line the moist, mucosal surfaces inside the head and neck (for example, inside the mouth, the nose, and the throat). These squamous cell cancers are often referred to as squamous cell carcinomas of the head and neck. Head and neck cancers can also begin in the salivary glands, but salivary gland cancers are relatively uncommon. Salivary glands contain many different types of cells that can become cancerous, so there are many different types of salivary gland cancer ***(Ries et al., 2013)***.

Head and neck cancer regions:

Cancers of the head and neck are further categorized by the area of the head or neck in which they begin. These areas are described below and labeled in the image of head and neck cancer regions (figure 1). Oral cavity: Includes the lips, the front two-thirds of the tongue, the gums, the lining inside the cheeks and lips, the floor (bottom) of the mouth under the tongue, the hard palate (bony top of the mouth), and the small area of the gum behind the wisdom teeth. Pharynx: The pharynx (throat) is a hollow tube about 5 inches long that starts behind the nose and leads to the esophagus. It has three parts: