2 Clinical and Endoscopic Examination of the Head and Neck

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CONTENTS

2.1 Introduction 17
2.2 Neck 17
2.3 Nose and Paranasal Sinuses 20
2.4 Nasopharynx 21
2.5 Oral Cavity 22
2.6 Oropharynx 23
2.7 Larynx 24
2.8 Hypopharynx and Cervical Esophagus 26
2.9 Salivary Glands 27
2.10 Thyroid Gland 28
2.11 Role of Imaging Studies 28
References 29

2.1 Introduction

Head and neck neoplasms present with variable signs and symptoms, depending on their site of origin and extension pattern. Thorough clinical examination, aided by modern endoscopic devices, is a cornerstone of the pre- and posttherapeutic evaluation of the patient suffering head and neck cancer. This chapter reviews the possibilities, but also the limitations of the clinical examination for each of the major sub-sites in the head and neck region.

2.2 Neck

Clinical examination still remains an important method of assessing regional lymph nodes. The presence of a clinically palpable, unilateral, firm, enlarged lymph node in the adult should be considered metastatic until proven otherwise. External examination of the neck represents an important starting point in the examination of the patient. It is important to remember that some cervical masses may escape the very best surgical palpation. It is essential that an orderly and systematic examination of the lymphatic fields on both sides of the neck is performed (Stell and Maran 1972).

Regional lymphatic drainage from the mucosa of the upper aerodigestive tract, salivary glands, and the thyroid gland occurs to specific regional lymph node groups (Shah 1990). They should be appropriately addressed in treatment planning for a given primary site. The major lymph node groups of the head and neck are shown in Fig. 2.1. Cervical lymph nodes in the lateral aspect of the neck primary drain the mucosa of the upper aerodigestive tract. These include the submental and submandibular group of lymph nodes located in the submental and submandibular triangles of the neck. Deep jugular lymph nodes include the jugulodigastric, jugulo-omohyoid, and supraclavicular group of lymph nodes adjacent to the internal jugular vein. Lymph nodes in the posterior triangle of the neck include the accessory chain of lymph nodes located along the spinal accessory nerve and the transverse cervical chain of lymph nodes in the floor of the posterior triangle of the neck. The retropharyngeal lymph nodes are at risk of metastatic dissemination from tumors of the pharynx. The central compartment of the neck includes the delphian lymph node overlying the thyroid cartilage in the midline draining the larynx, and the perithyroid lymph nodes adjacent to the thyroid gland. Lymph nodes in the tracheoesophageal groove provide primary drainage to the thyroid gland as well as the hypopharynx, subglottic larynx, and cervical esophagus. Lymph nodes in the anterior superior mediastinum provide drainage to the thyroid gland and the cervical esophagus.

The localisation of a palpable metastatic lymph node often indicates the potential source of a primary tumor. In Fig. 2.1 the regional lymph node groups draining a specific primary site as first echelon lymph nodes are depicted.
In order to establish a consistent and easily reproducible method for description of regional cervical lymph nodes, providing a common language between the clinician, the pathologist, and radiologist, the Head and Neck Service at Memorial Sloan-Kettering Cancer Center has described a leveling system of cervical lymph nodes (Fig. 2.2). This system divides the lymph nodes in the lateral aspect of the neck into five nodal groups or levels. In addition, lymph nodes in the central compartment of the neck are assigned levels VI and VII.

- **Level I**: Submental group and submandibular group. Lymph nodes in the triangular area bounded by the posterior belly of the digastric muscle, the inferior border of the body of the mandible, and the hyoid bone.

- **Level II**: Upper jugular group. Lymph nodes around the upper portion of the internal jugular vein and the upper part of the spinal accessory nerve, extending from the base of the skull up to the bifurcation of the carotid artery or the hyoid bone. Surgical landmarks: base of skull superiorly, posterior belly of digastric muscle anteriorly, posterior border of the sternocleidomastoid muscle posteriorly, and hyoid bone inferiorly.

- **Level III**: Mid-jugular group. Lymph nodes around the middle third of the internal jugular vein. Surgical landmarks: hyoid bone superiorly, lateral limit of the sternohyoid muscle anteriorly, the posterior border of sternomastoid muscle posteriorly, and the caudal border of the cricoid cartilage inferiorly.

- **Level IV**: Lower jugular group. Lymph nodes around the lower third of the internal jugular. Surgical landmarks: cricoid superiorly, lateral limit of the sternohyoid muscle anteriorly, posterior border of the sternocleidomastoid muscle posteriorly, and clavicle inferiorly.

- **Level V**: Posterior triangle group. Lymph nodes around the lower portion of the spinal accessory nerve and along the transverse cervical vessels. It is bounded by the triangle formed by the clavicle, posterior border of the sternomastoid muscle, and the anterior border of the trapezius muscle.

- **Level VI**: Central compartment group. Lymph nodes in the prelaryngeal, pretracheal, (Delphian), paratracheal and tracheoesophageal groove. The boundaries are: hyoid bone to suprasternal notch and between the medial borders of the carotid sheaths.

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**Fig. 2.1.** The regional lymph nodes of the head and neck region; the major regional lymphatic chains are annotated on the left. These regional lymph node groups drain a specific primary site as first echelon lymph nodes (indicated on right).