

Evaluation of neck mass

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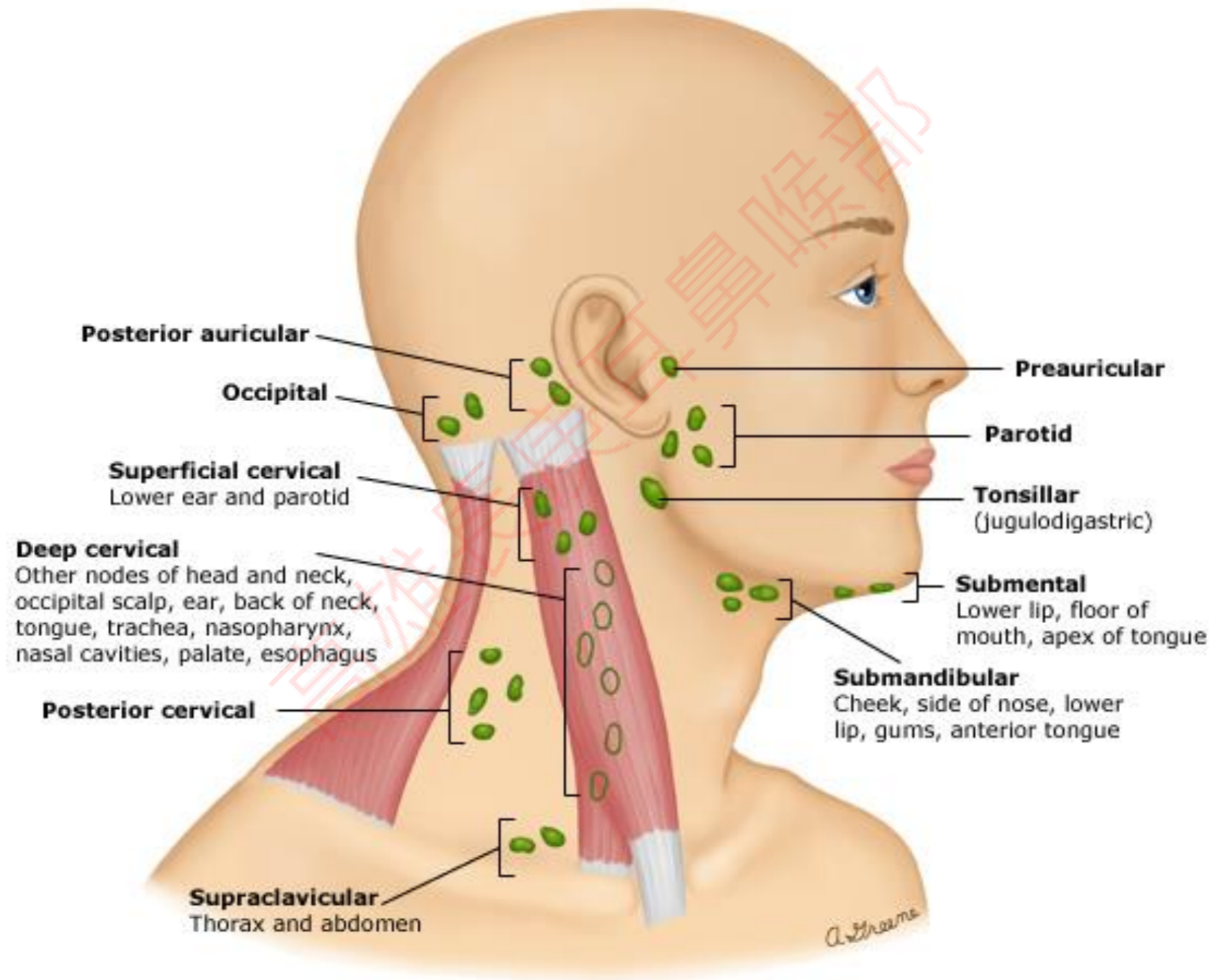
INTRODUCTION

- The differential diagnosis of a mass in the neck is broad, extensive, and includes both serious and benign etiologies
- It is helpful to consider the differential diagnosis in three broad categories:
 - Congenital
 - Inflammatory
 - Neoplastic
- The patient's history and physical examination will often allow designation of the neck mass into one of these three categories

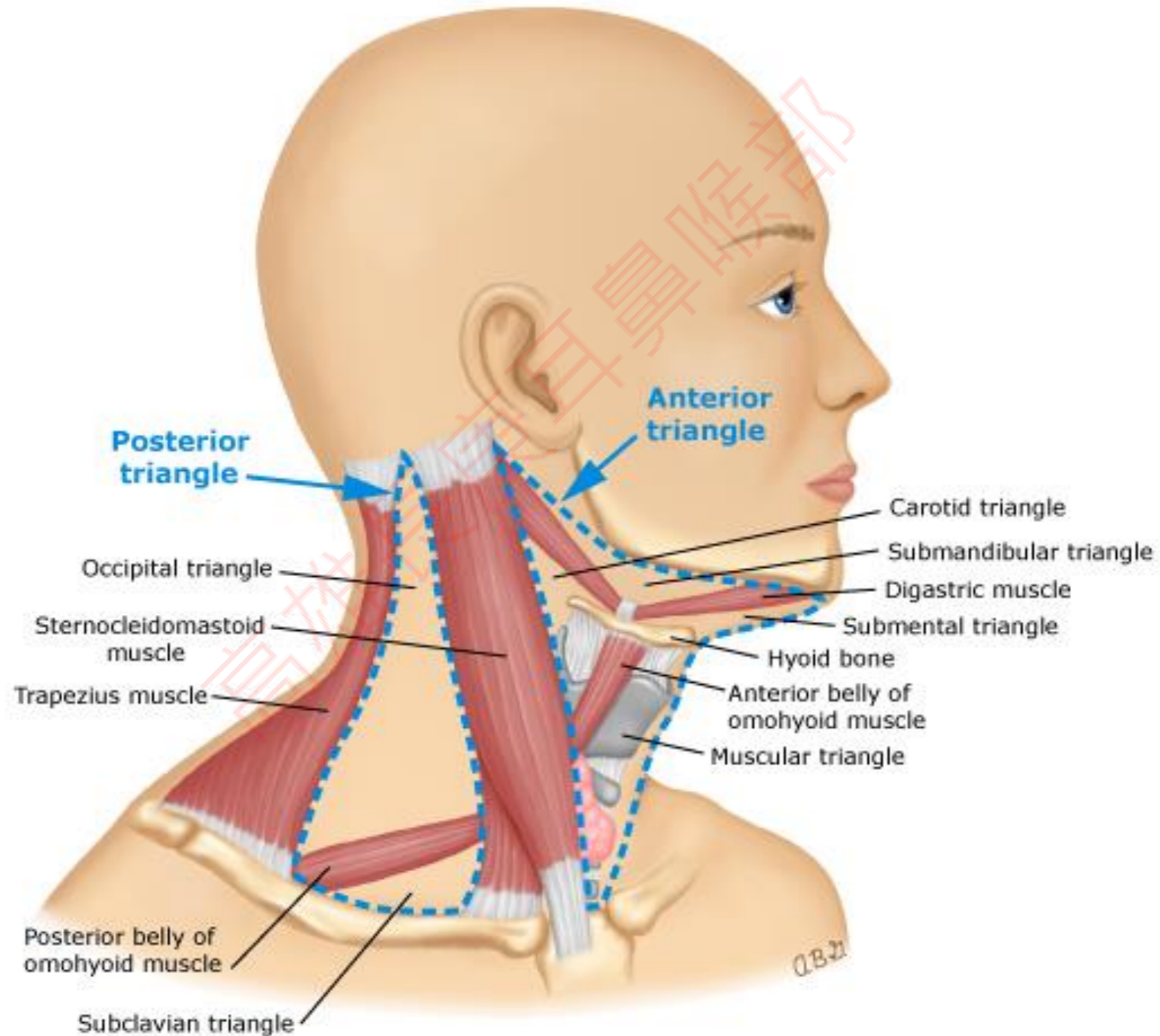
ANATOMY OF THE NECK

- The neck is traditionally divided into the central and the lateral necks, with the lateral neck further subdivided into anterior and posterior triangles
- patterns of lymph node drainage can identify areas of concern when metastatic disease is suspected or correlating with potential sources of infection

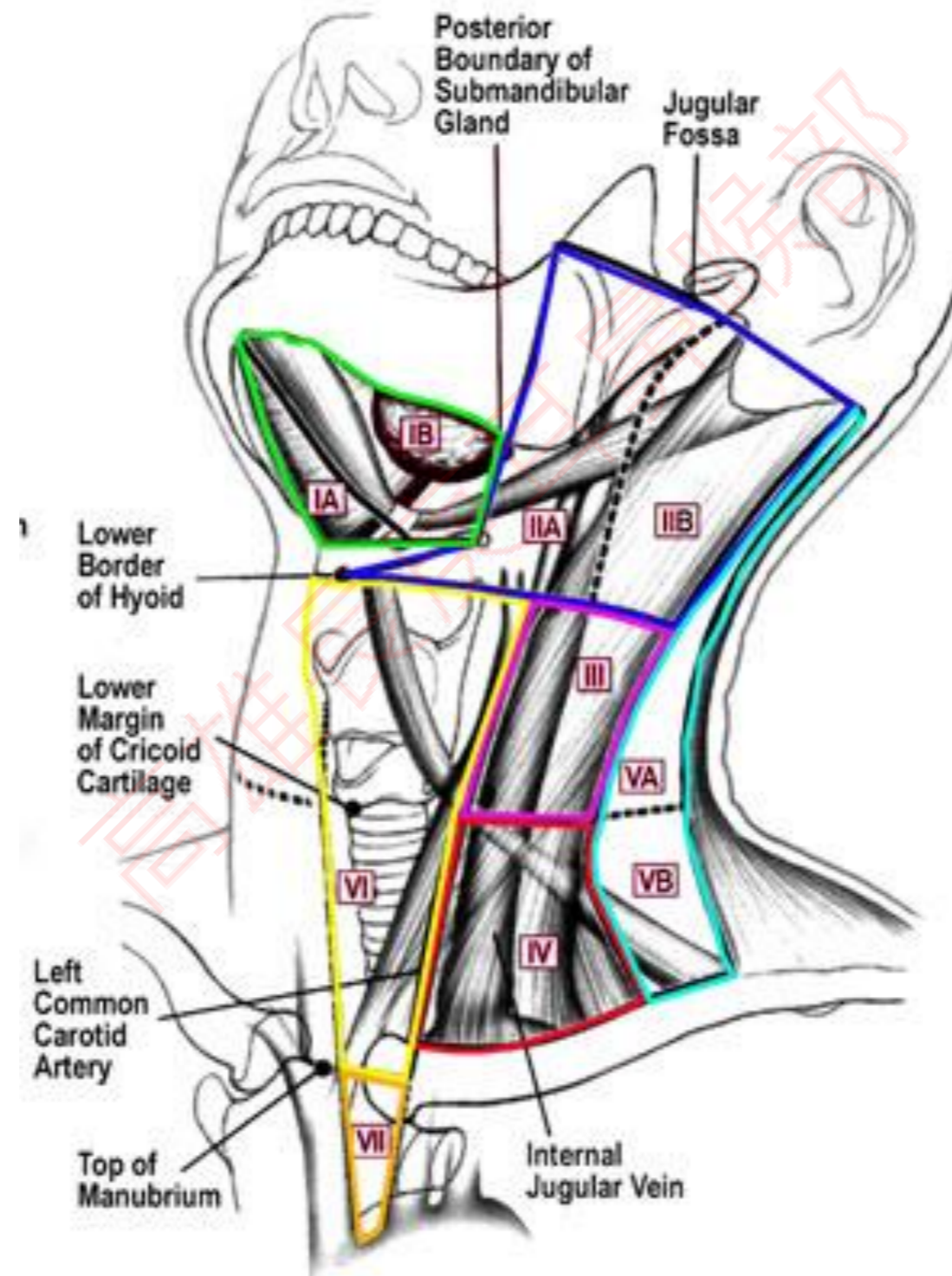
ANATOMY OF THE NECK



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CONGENITAL NECK MASS

- Branchial cleft cyst
- Thyroglossal duct cyst
- Vascular anomalies
- Laryngocele
- Ranula
- Teratoma
- Dermoid cyst
- Thymic cyst

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INFLAMMATORY NECK MASS

- Inflammatory masses are typically related to enlarged lymph nodes.
- Lymph node enlargement can result from infectious processes as well as inflammatory, non-infectious illnesses.

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INFLAMMATORY NECK MASS

Cause	Examples
Infections	
Bacterial	
Localized	Streptococcal pharyngitis; skin infections; tularemia; plague; cat scratch disease; diphtheria; chancroid; rat bite fever
Generalized	Brucellosis; leptospirosis; lymphogranuloma venereum; typhoid fever
Viral	Human immunodeficiency virus; Epstein-Barr virus; herpes simplex virus; cytomegalovirus; mumps; measles; rubella; hepatitis B; dengue fever
Mycobacterial	<i>Mycobacterium tuberculosis</i> ; atypical mycobacteria
Fungal	Histoplasmosis; coccidioidomycosis; cryptococcosis
Protozoal	Toxoplasmosis; leishmaniasis
Spirochetal	Secondary syphilis; Lyme disease
Cancer	Squamous cell cancer head and neck; metastatic; lymphoma; leukemia
Lymphoproliferative	Angioimmunoblastic lymphadenopathy with dysproteinemia Autoimmune lymphoproliferative disease Rosai-Dorfman disease Hemophagocytic lymphohistiocytosis
Immunologic	Serum sickness; drug reactions (phenytoin); IgG4-related disease
Endocrine	Addison's disease
Miscellaneous	Sarcoidosis; lipid storage diseases; amyloidosis; histiocytosis; chronic granulomatous diseases; Castleman disease; Kikuchi disease; Kawasaki disease; inflammatory pseudotumor; systemic lupus erythematosus; rheumatoid arthritis; Still's disease; dermatomyositis; eosinophilic granulomatosis with polyangiitis (Churg-Strauss)

IgG4: Immunoglobulin G4.

* Note: This is a partial list and is not meant to be all-inclusive.

INFLAMMATORY NECK MASS

- Reactive viral lymphadenopathy — the most common cause of cervical lymphadenopathy, especially in children.
- Bacterial lymphadenopathy — Suppurative lymphadenopathy results from a bacterial infection, typically in the pharynx or skin
- Parasitic lymphadenopathy — *Toxoplasma gondii*, a protozoan parasite, is typically acquired through ingestion of inadequately cooked meat or the ingestion of cat feces.
- Noninfectious inflammatory disorders — Noninfectious inflammatory conditions are less common

NEOPLASTIC DISORDERS

- Metastatic head and neck carcinoma — Neck masses that result from metastatic disease are predominantly related to metastatic squamous cell carcinoma arising from the aerodigestive tract
- Thyroid masses — A primary thyroid tumor will usually present as a mass in the anterior neck. While the majority of these masses represent benign thyroid nodules and cysts, malignancy must be considered
- Salivary gland neoplasm — Approximately 80 percent of salivary neoplasms arise in the parotid gland. Eighty percent of parotid tumors are benign, most commonly pleomorphic adenoma

NEOPLASTIC DISORDERS

- Lymphoma — with head and neck involvement is very common in children with Hodgkin disease (HD),

HD should be suspected, especially in young patients with a history of fever, night sweats, chills, and diffuse lymphadenopathy.

- Lipoma and benign skin cysts — Lipomas are benign neoplasms comprised of fat and are typically asymptomatic. They are slowly enlarging masses that can occur in any location on the neck

Evaluation

- History:
 - Lack of an infectious etiology
 - Duration of ≥ 2 weeks or unknown
- Physical examination:
 - Size > 1.5 cm
 - Firm texture to palpation
 - Fixed or reduced mobility
 - Ulceration of overlying skin

Evaluation

- Additional findings that may increase the suspicion for a malignant etiology include
- History:
 - Age >40 years
 - Tobacco or alcohol abuse
 - History of head and neck cancer
 - History of skin cancer of the scalp, face, or neck
 - Immunocompromised status
- Symptoms:
 - Hoarseness or recent voice change
 - Otalgia or recent hearing loss ipsilateral to the neck mass
 - Nasal congestion or epistaxis ipsilateral to the neck mass
 - Oral cavity or oropharyngeal ulcer
 - Odynophagia or dysphagia

Evaluation

- Symptoms:
 - Pharyngitis or "sore throat"
 - Hemoptysis or blood in saliva
 - Dyspnea
 - Unexplained weight loss
- Physical findings:
 - Nontender neck mass
 - Asymmetric tonsils
 - Skin lesions on scalp, face, or neck

DIAGNOSTIC STUDIES

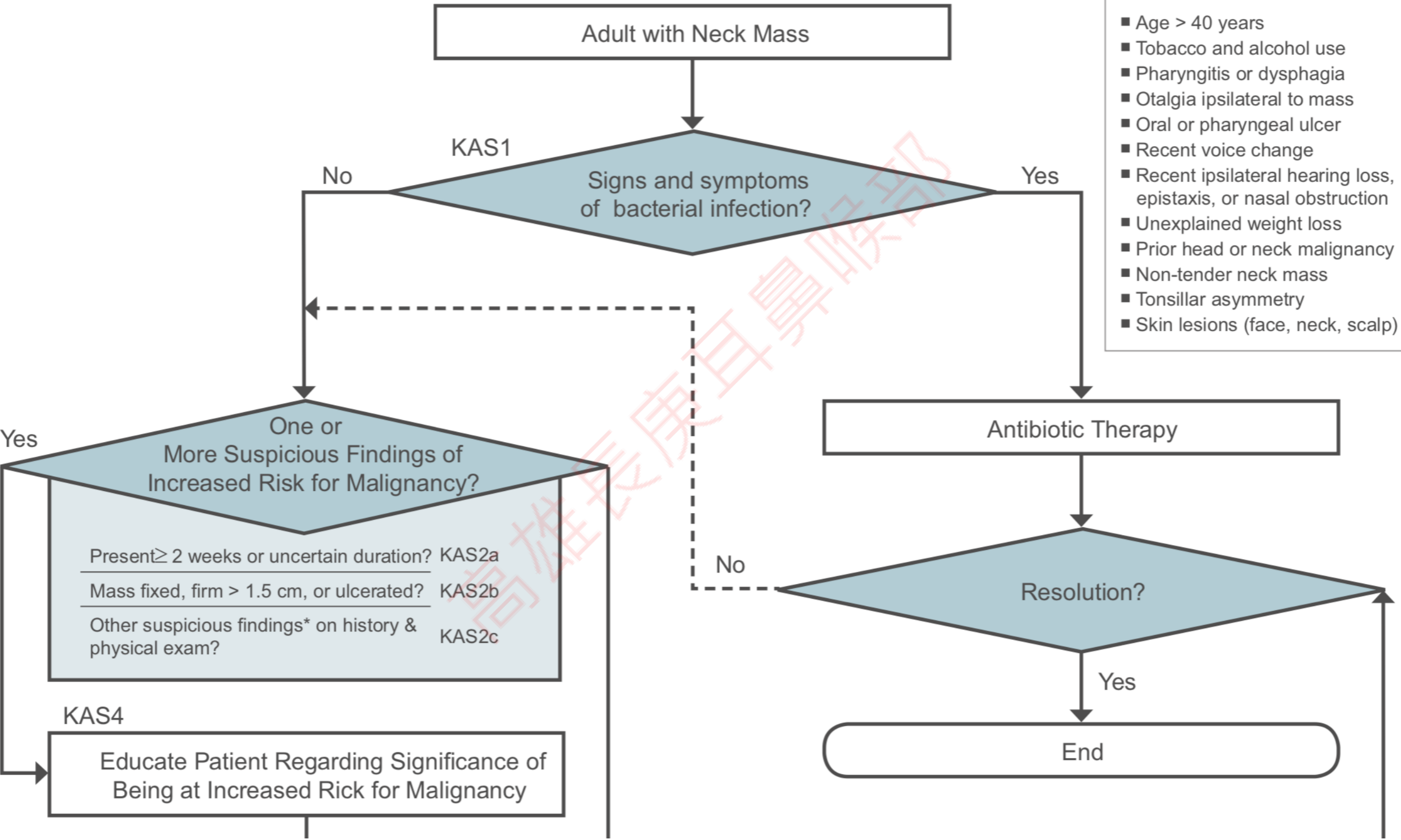
- Fine-needle aspiration
 - Blood (vascular lesion)
 - Serous dark brown fluid (papillary thyroid cancer)
 - Thick viscous yellow fluid (mucocele)
 - Turbid yellow fluid (branchial cleft cyst)
 - Purulent (abscess)
- Core biopsy — If the information provided by an FNA does not establish the diagnosis, core needle biopsy can be considered.

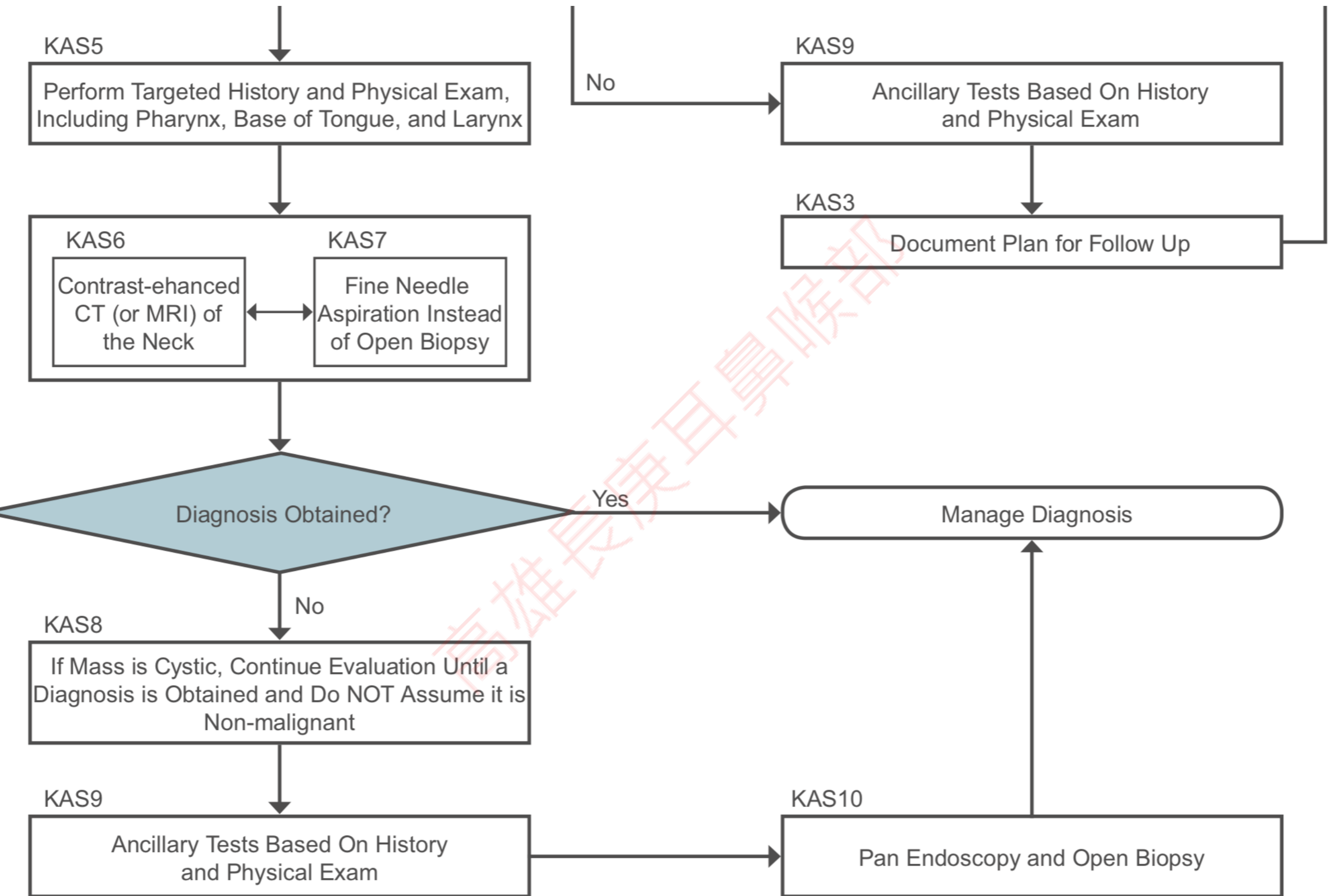
DIAGNOSTIC STUDIES

- Image-guided biopsy
 - Ultrasound-guided or CT-guided FNA or core biopsies are considered in the setting of nonpalpable masses seen only with imaging.
- Excisional or incisional biopsy
 - Open surgical biopsies, in general, are discouraged since they can adversely affect the success of subsequent definitive treatment in malignant pathologies and in certain situations

KAS = Key Action Statement

- *Other Suspicious Findings:
- Age > 40 years
 - Tobacco and alcohol use
 - Pharyngitis or dysphagia
 - Otalgia ipsilateral to mass
 - Oral or pharyngeal ulcer
 - Recent voice change
 - Recent ipsilateral hearing loss, epistaxis, or nasal obstruction
 - Unexplained weight loss
 - Prior head or neck malignancy
 - Non-tender neck mass
 - Tonsillar asymmetry
 - Skin lesions (face, neck, scalp)





SUMMARY AND RECOMMENDATIONS

- The evaluation of a new neck mass begins with a thorough history and physical examination.
- Imaging studies usually start with a contrast computed tomography (CT) scan of the neck, though an ultrasound evaluation is also acceptable
- Fine-needle aspiration (FNA) can provide initial tissue sampling but is not always definitive. Core biopsy may increase diagnostic yield