Pediatric Cervical Lymphadenopathy

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KEYWORDS

• Cervical lymphadenopathy • Pediatric • Neck mass • Differential diagnosis
• Infectious

KEY POINTS

- The differential diagnosis for cervical lymphadenopathy in a pediatric patient is broad, but the most common cause is infectious.
- Thorough history and physical examination are essential to identify the correct diagnosis.
- Ultrasound is the initial imaging modality of choice for most pediatric patients who require further evaluation of cervical lymphadenopathy.
- Fine-needle aspiration biopsy (FNAB) may be used as the initial biopsy method in selected pediatric patients with cervical lymphadenopathy, possibly obviating the need for open biopsy in some cases.
- Clinical judgment should guide the clinician to open biopsy in the setting of negative FNAB and suspected malignancy.

INTRODUCTION

Cervical lymphadenopathy is common in the pediatric population, with estimates of 38% to 45% of otherwise healthy children having palpable lymphadenopathy.[1] Park[2] reported that 90% of children between the ages of 4 and 8 years have lymphadenopathy. In the head and neck, most providers consider nodes greater than 1 cm enlarged, except for anterior deep cervical (jugulodigastric) nodes, which may reach 1.5 cm before they are considered enlarged.[3,4] Most cases represent benign lymphadenopathy and are self-limited.[5,6] The differential diagnosis for cervical lymphadenopathy in children is broad, and a thorough history and physical examination are important in identifying the correct diagnosis. Infection is the most common cause of pediatric cervical lymphadenopathy and is the emphasis of the current discussion. The management of pediatric cervical lymphadenopathy is also discussed, including when imaging and biopsy should be considered.

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ANATOMIC AND PHYSIOLOGIC CONSIDERATIONS

The neck is often considered in several anatomic subsites (**Fig. 1**), including the submental, submandibular, anterior cervical, posterior cervical, supraclavicular, and parotid (preauricular) sites. Anterior cervical nodes are located anterior to the posterior border of the sternocleidomastoid muscle (ie, in the anterior triangle of the neck) and are often divided into upper, middle, and lower groups. They may further be divided into superficial and deep nodes relative to their location along the external or internal jugular veins, respectively.[7] Posterior cervical nodes are posterior to the posterior border of the sternocleidomastoid muscle (ie, in the posterior triangle of the neck). This basic subsite classification of cervical lymph nodes established by Hajek and colleagues[8] has been reported to be the most reproducible classification scheme on neck ultrasound, which is an important imaging study in the pediatric population. Mastoid (postauricular) and suboccipital locations may also be included as anatomic subsites of cervical lymph nodes.[7]

CLINICAL PRESENTATION AND PHYSICAL EXAMINATION

A thorough history and physical examination are paramount in accurately diagnosing cervical lymphadenopathy in pediatric patients. Important historical questions should be asked to help narrow the differential diagnosis. The onset and duration of the neck mass, changes in mass size or character, recent illnesses, fever, anorexia, weight loss, night sweats, fatigue, recent travel, animal exposure, treatment (such as antibiotics), and response to treatment should all be addressed. During physical examination, mass locations (including laterality), size, mobility, tenderness, and characteristics on palpation (soft, rubbery, fluctuant, firm, warm), and overlying skin changes should be noted.[6,7,9]

Key historical information and physical examination findings may indicate a benign versus malignant origin. Benign reactive lymphadenopathy with infectious origin may

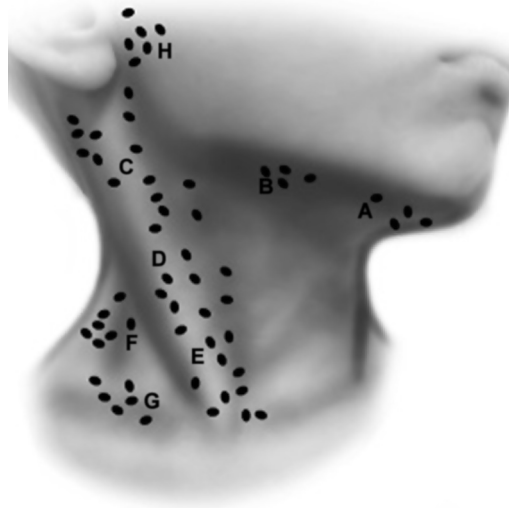

Fig. 1. Cervical lymph node subsites in the pediatric patient. (A) Submental; (B) submandibular; (C) upper, (D) middle, (E) lower anterior cervical; (F) posterior cervical; (G) supraclavicular; (H) parotid. (*Courtesy of* Dawn Rosenberg Davis, Yazoo City, MS.)