ENT NEWS

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DIAGNOSIS AND MANAGEMENT OF DEEP NECK INFECTIONS

Physicians in the pre-antibiotic era were well versed in the recognition and treatment of deep neck infections. Today, although not as frequent as years past, all primary physicians should have an understanding of the initial diagnosis. These are very serious infections with frequent life threatening complications that may follow inadequate treatment.

The muscles, vessels and visceral structures of the neck are encased in connective tissue. Fascial spaces are potential areas between the connective tissues. When abscess formation occurs, spread will be in these fascial spaces and places of least resistance. The neck is divided into multiple potential spaces. The prevertebral and retropharyngeal spaces are posterior separated by the alar fascia. The lateral pharyngeal space is cone shaped from the hyoid to skull base. The submandibular space is comprised of the sublingual and submaxillary components separated by the mylohyoid muscle. The visceral space lies adjacent to the esophagus and trachea.

Pain and limitation of jaw and neck motion are present in all deep neck infections. Diffuse swelling and sometimes pitting edema are present except in those of the prevertebral space. Fluctuance of neck is almost never noted due to deep location of the abscess. Fever is usually sustained well above normal in untreated cases. Antibiotics can reduce it but rarely bring it to normal. An intense leukocytosis with a left shift will be present. Dehydration, hyperosmolarity from the severe dysphagia is often present.

Infections of the prevertebral or retropharyngeal space are often characterized by noisy breathing, “hot potato” voice, dysphagia and odynophagia. Boggy, inflamed mucosa is noted on oropharyngeal exam. Abscess formation in the retropharyngeal space tends to lie slightly to the side because of the midline raphe. Prevertebral abscesses are midline. Both types of abscesses are well demonstrated on lateral soft tissue neck x-ray or CT scan. A widening of the prevertebral retropharyngeal soft tissue may be noted.

Infection in the lateral pharyngeal space causes medial displacement of the lateral pharyngeal wall and fullness in the retromandibular region. Trismus secondary to involvement of the mastication muscles may be present. Dysphagia is also present.

Submandibular space infections involving sublingual area begin with dysphagia, hot potato voice and decreased tongue mobility. Floor of mouth mucosa is inflamed and edematous. Swelling above the mylohyoid muscle sling causes tongue retrusion sometimes with airway compromise. Submental infection tend to localize more externally unless the infection breaks through mylohyoid or goes around it’s edge. A high degree of tissue tension in a relatively confined space can rapidly increase dysphagia and respiratory compromise to produce a full-fledged Ludwig’s angina.

The bacteria causing these infections are most often staphylococcus aureus, hemolytic streptococcus, and anaerobic streptococci and Bacteroides species. In over 50% of reported cases, no specific source of infection is found. The extension of infections from primary focus into deep fascial space is usually secondary to suppuration of lymph nodes and deep lymphatic spread.

Treatment involves hospitalization for evaluation with CT scans, intense broad spectrum IV antibiotics and management of fluid deficits. Only 10-15% of patients with deep neck infections will resolve with medical management alone and failure to improve after 24 hours should be indication for drainage. A referral to a surgeon knowledgeable in the anatomy of the neck is required for possible incision and drainage. Treatment must be done quickly to facilitate resolution and avoid life-threatening complications!!