

LARYNGEAL CHONDROPERICHONDritis: ETIOPATHOGENESIS, DIAGNOSIS, AND TREATMENT

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Abstract. Laryngeal chondroperichondritis is a rare but potentially serious inflammatory condition of the larynx, involving the cartilage (chondro-) and the perichondrium (-perichondritis). This disorder often results from trauma, infection, or iatrogenic causes and may lead to airway obstruction if not properly managed.

Keywords: Laryngeal chondroperichondritis typically occurs when the perichondrium and underlying cartilage of the larynx become infected or inflamed. The key etiological factors include:

1. 1. Infectious Causes
 - Bacterial infections (e.g., Staphylococcus aureus, Pseudomonas aeruginosa, Mycobacterium tuberculosis)
 - Fungal infections in immunocompromised individuals
2. 2. Trauma
 - External trauma (e.g., blunt neck injury)
 - Endotracheal intubation
 - Tracheostomy
 - Surgical procedures involving the larynx
3. 3. Radiation Therapy
 - Radiotherapy for head and neck cancers can induce avascular necrosis of cartilage and lead to infection.
4. 4. Autoimmune Diseases
 - Rarely, it may be part of a systemic autoimmune condition like relapsing polychondritis.

Pathophysiology

The inflammation causes separation of the perichondrium from the cartilage, leading to impaired nutrition and subsequent cartilage necrosis. This can cause deformity, impaired phonation, and airway compromise.

Clinical Presentation

Symptoms may vary depending on the severity and extent of involvement:

- Hoarseness or voice changes
- Odynophagia (painful swallowing)
- Dysphagia (difficulty swallowing)
- Stridor or respiratory distress
- Fever and general malaise
- Neck tenderness or swelling

Diagnosis

5. 1. Clinical Examination
 - Indirect or direct laryngoscopy may reveal erythema, swelling, ulceration, or necrotic areas on the laryngeal structures.

6. 2. Imaging
 - CT scan: Reveals cartilage erosion, edema, abscess formation, or airway narrowing.
 - MRI: Useful for soft tissue contrast and evaluating the extent of inflammation.
7. 3. Microbiological Studies
 - Swabs or aspirates may be cultured to identify the causative organism.
 - TB testing or fungal cultures if indicated.
8. 4. Histopathology
 - Biopsy may be necessary in suspected neoplastic cases or for chronic unresolved inflammation.

Treatment

9. Medical Management
 - Antibiotics: Empiric broad-spectrum coverage initially, later tailored based on culture results.
 - Antifungals: If fungal pathogens are isolated.
 - Corticosteroids: May help reduce inflammation, especially in autoimmune or radiation-induced cases.
 - Anti-TB therapy: In cases of tuberculous chondroperichondritis.
10. Surgical Management
 - Abscess drainage: If a collection is present.
 - Debridement: Removal of necrotic cartilage and perichondrium.
 - Tracheostomy: May be required in cases of airway obstruction.
11. Supportive Care
 - Voice rest
 - Humidified oxygen
 - Nutritional support if swallowing is compromised

Prognosis

The outcome depends on early recognition and the underlying cause. Delayed treatment can lead to irreversible laryngeal deformity and permanent airway or voice problems. With appropriate intervention, especially in non-tuberculous, non-neoplastic cases, recovery is usually favorable.

Conclusion

Laryngeal chondroperichondritis, though uncommon, is a serious condition with the potential for life-threatening airway compromise. A high index of suspicion, prompt diagnosis using imaging and endoscopy, and aggressive medical or surgical management are crucial to ensure optimal outcomes.

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