

## **Pharyngocutaneous Fistula: Prevalence and Associated Risk Factors after Total Laryngectomy**

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**Background:** Pharyngocutaneous fistula (PCF) represents a significant complication following total laryngectomy (TL). Despite extensive research, consensus on risk factors is lacking and reported incidence rates vary greatly. This study aims to determine PCF prevalence and identify associated risk factors at Karolinska University Hospital.

**Material and Methods:** Medical records of 160 patients diagnosed with laryngeal cancer and subsequently undergoing TL or total pharyngolaryngectomy between 2000-2021 were retrospectively reviewed. Patient demographics, comorbidities, tumor characteristics, treatment details, PCF formation and related outcomes were analyzed using uni- and multivariate analyses.

**Results:** PCF developed in 28 patients (17.5%) with a mean time to diagnosis of 18 days post-surgery. Univariate analysis identified several significant risk factors: prior radiotherapy (OR 3.78), preoperative tracheostomy (OR 2.44), preoperative hemoglobin <110 g/L (OR 5.34), cardiovascular disease (OR 2.50), salvage surgery (OR 3.90), pharyngectomy (OR 8.47), neck dissection (OR 2.52), pectoral flap reconstruction (OR 10.83) and postoperative infection (OR 28.44). In multivariate analysis, pharyngectomy (OR 7.18) and postoperative infection (OR 24.94) remained independent predictors. PCF patients experienced 60% longer hospitalization, delayed oral intake (median 68 vs.13 days), and postponed voice rehabilitation.

**Conclusion:** PCF significantly impacts morbidity and recovery after laryngectomy. Our findings highlight the importance of identifying high-risk patients, particularly with multiple risk factors or requiring pharyngectomy, in order to consider possible risk-minimizing measures. The findings also stress the need for meticulous wound care provided by experienced personnel, who can identify signs of infection and initiate timely treatment.