

Modern insights into laryngeal cancer spread: possible implications for revision of the TNM Staging System

The AJCC/UICC TNM Staging System has been a cornerstone of oncologic practice worldwide since its initial publication in the late 1960s and early 1970s, and official unification into a single, concordant system in 1987 (AJCC 3rd Edition and UICC 4th Edition). Successive revisions have reflected the ongoing commitment of the oncology community to refine its content while preserving the system's fundamental strengths: simplicity, reproducibility, and applicability across diverse clinical, epidemiologic, and healthcare settings.

For laryngeal cancer, however, the current Eighth Edition remains largely unchanged from the Sixth Edition published in 2002, with the exception of important modifications to the clinical and pathological nodal classifications that were adopted across head and neck mucosal malignancies. Consequently, with regards to classification of primary tumours (cT and pT), we continue to rely on a framework that is now more than two decades old.

During this period, remarkable advances have occurred in endoscopic evaluation, cross-sectional imaging, histopathologic assessment and, most importantly, our understanding of how tumour spread within the larynx may influence outcomes. Treatment preferences for laryngeal cancer are distinctly different in various geographic regions of the world; surgical endoscopic resection is widely prevalent in some parts, whereas non-surgical options are heavily favoured in other areas. Despite recognition of the prognostic implications of patterns of tumour spread and heterogeneity in treatment paradigms, modification of the T category definitions of laryngeal cancer has been elusive.

In the era of precision oncology, there is increasing interest in moving beyond traditional staging systems as prognostic tools. The TNM is often criticised for lumping together tumours that have substantially diverse biological characteristics and clinical behaviours in the same group. More sophisticated prognostic models, such as nomograms and risk-stratification tools, are becoming increasingly available and often provide more individualised estimates of outcomes. However, these instruments can have limited practical utility, especially if the data needed for prognostication are reliant on a high level of expertise and sophisticated technology that may not be easily available in all settings.

For these reasons, the TNM Staging System is likely to remain the universal language of cancer care for the foreseeable future, particularly in low- and middle-income countries and in routine clinical practice outside academic referral institutions. Rather than replacing the TNM, our objective should be to continue the process that has guided its evolution since its inception, namely refining and updating the system by integrating contemporary and emerging robust evidence.

The 3 papers comprising this monograph seek to identify specific opportunities for improving prognostication in laryngeal glottic cancer and to explore potential refinements that may be considered for incorporation into a future revision of the TNM classification. Modern videoendoscopy, advanced imaging, and detailed histopathologic assessment now allow characterisation of tumour extent and patterns of spread with a level of precision that was unimaginable when the current framework was conceived. Importantly, these assessments are now feasible in virtually every contemporary referral centre involved in cancer care.



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This effort originated from discussions held during 2 international multidisciplinary meetings devoted specifically to this topic – the first in Milan in 2019 and the second in Warsaw in 2025. It represents the initial culmination of a broader international effort aimed at developing a more accurate and clinically relevant TNM classification for laryngeal cancer. More importantly, the concepts presented herein should stimulate

retrospective and prospective validation studies involving larger, multi-institutional, international surgical and non-surgical cohorts. Such collaboration will be essential to determine whether the observations discussed in these reviews can be confirmed by robust evidence and ultimately translated into future revisions of the present TNM Staging System.