

International guidelines for the delineation of the postoperative clinical target volumes (CTV) for parotid and submandibular gland cancers.

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Post-operative radiotherapy (PORT) for major salivary gland cancers increasingly relies on highly conformal techniques, making rigorous and reproducible clinical target volume (CTV) delineation essential. There are currently limited data to guide radiation oncologists with CTV delineation for PORT of parotid and submandibular gland cancers in the era of IMRT or IMPT.

We formed an international panel to develop practical, consensus-based guidelines for peritumoral CTVs around the primary site (CTV-P) and for low-risk nodal CTVs (CTV-N-LR) in parotid and submandibular gland cancers. These guidelines are based on the natural history and extension pathways of these cancers, including local tumor spread, perineural invasion (PNI) risks and regional spread. We reviewed radiographic anatomy, natural history, and routes of tumor extension, including PNI. Agreement levels were categorized as high ($\geq 85\%$), moderate (70-84 %), or low ($< 70\%$).

Areas of variation and uncertainty in postoperative CTV delineation for parotid and submandibular gland cancers were identified. Through structured discussion and iterative voting, the panel converged on consensus statements that translate available evidence and expert practice into practical, harmonized recommendations.

These consensus guidelines offer a pragmatic framework for PORT CTV selection in parotid and submandibular gland cancers. They should be implemented with careful imaging-pathology correlation and multidisciplinary judgment, and adapted to patient-specific risk factors; areas of uncertainty warrant further study.