



Unilateral neck radiotherapy for tonsillar squamous cell carcinomas

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Background

- Unilateral neck radiotherapy is a standard treatment for well-lateralised squamous cell carcinomas of the tonsil (Figure 1).
- Well-lateralised tumours are defined as T0-T2 N0-N2b M0 and do not invade the base of tongue nor extend more than 1 cm into the soft palate.
- We became concerned about an increased frequency of contralateral neck recurrences (CNR) with unilateral neck radiotherapy in this group of patients and decided to audit our practice.

Methodology

- Data was extracted from a Head & Neck radiotherapy database and patient notes.
- The Kaplan-Meier method was used to obtain survival estimates.

1st Audit

Standards, indicators and targets

We have compared our contralateral neck recurrence (CNR) rates with those seen in large series (2%-3.5%)^{1,2,3}

Results

- The audit period was from February 2004 to June 2011.
- 54 patients (2 with lateralised T3 tumours) in total were treated with unilateral neck 3DCRT of which 50 patients had p16 positive carcinomas. Median follow-up was 58 months.
- T and N stage distributions are described in the table below

	T1	T2	T3
N0	3	7	0
N1	5	6	0
N2a	3	2	0
N2b	16	10	2

- 4/50 patients had a CNR with no evidence of local or ipsilateral failure. Of these, 1 had recurrent contralateral retropharyngeal nodes and the rest contralateral level II-IV nodes.
- Median time to a contralateral recurrence was 32 months (range 22-47 months).
- All 4 patients with recurrence initially presented with p16 positive, T1 N2b M0 disease.
- CNR rate was 7.4% for all patients and 14.2% for the 28 patients presenting with N2b disease.
- 5-year contralateral neck recurrence-free survival (CNRFS) and overall survival (OS) analysis was as follows:

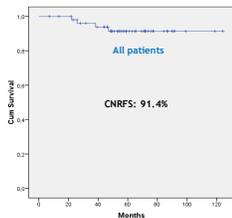


Fig 2a. CNRFS for all patients

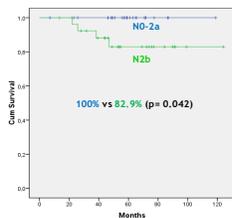


Fig 2b. CNRFS for N0-2a vs N2b

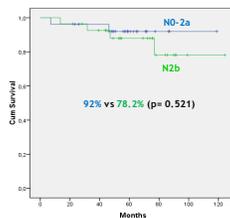


Fig 2c. OS for N0-2a vs N2b

Action plan

Due to an observed high risk of CNR, our **practice was changed** from unilateral neck radiotherapy to bilateral neck IMRT in N2b tonsillar carcinoma patients.

Conclusion

Our 1st audit demonstrated a 7.4% risk of CNR in tonsillar squamous cell carcinomas treated with unilateral radiotherapy compared with a 2-3.5% risk seen in literature. A subgroup analysis showed it is the patients with N2b disease which are at higher risk for a CNR (14.2%). By changing our practice to bilateral neck IMRT in N2b patients we have managed to improve our patient outcomes as demonstrated with our 2nd audit observing a 0% risk of CNR.

References

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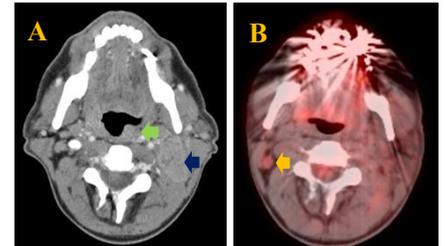


Fig 1. A] CT scan showing a T1 N2b M0 tonsillar carcinoma (green arrow - primary tumour, blue arrow - involved nodes). B] PET/CT scan at 3 months after treatment completion showing an FDG-avid contralateral neck node (yellow arrow) and no uptake elsewhere. Histology confirmed recurrent squamous cell carcinoma.

2nd Audit

Standards, indicators and targets

To evaluate CNR rate after changing to bilateral neck Intensity Modulated Radiotherapy (IMRT) for N2b tonsillar carcinomas.

Results

- Audit period was from March 2012 to December 2014.
- In total 23 patients with N2b disease were treated with bilateral neck IMRT of which 20 patients had p16 positive carcinomas.

	T1	T2
N2b	7	16

- Median follow-up was 21 months.
- CNR rate was 0% and 5-year CNRFS was 100%.

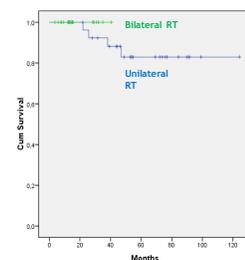


Figure 3. CNRFS in N2b - Unilateral Vs Bilateral Neck RT

Action plan

We recommend bilateral neck IMRT for all N2b carcinomas.

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