

Thyroid function monitoring following radiotherapy to the neck in patients with head and neck cancer at Norfolk and Norwich University Hospital

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Background

Radical radiotherapy for head and neck cancers is very effective but causes toxicity. The focus is often on acute toxicity management, but late effects can be significant. Hypothyroidism is a late effect of neck radiotherapy affecting 10-40% of patients with peak incidence at 1-3 years.^{1,2} Untreated hypothyroidism can affect multiple organs including increasing the risk of cardiovascular, neurological or cognitive disorders.³ Thyroid function monitoring after radiotherapy for head and neck cancers is recommended by UK and international guidelines, including the Head and Neck Cancer: United Kingdom National Multidisciplinary Guidelines, Sixth Edition⁴ and ESMO.⁵ There was no standardised local protocol at Norfolk and Norwich University Hospitals (NNUH) for thyroid function monitoring in this setting.

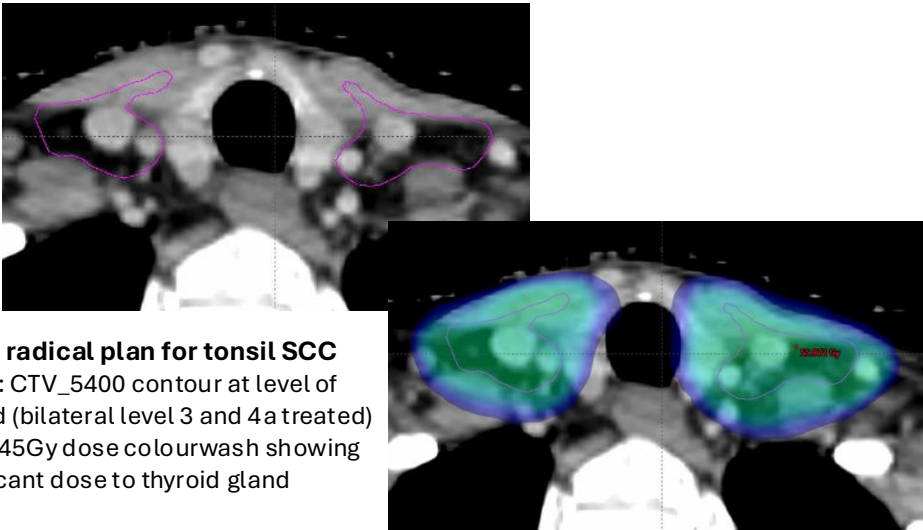
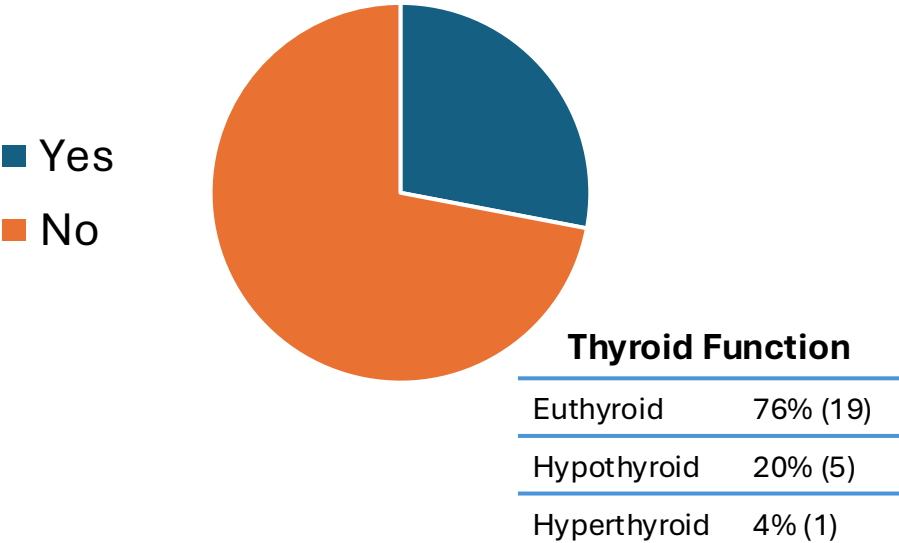


Fig. 1: radical plan for tonsil SCC
Above: CTV_5400 contour at level of thyroid (bilateral level 3 and 4a treated)
Right: 45Gy dose colourwash showing significant dose to thyroid gland

Method

Retrospective review of medical notes of patients referred for head and neck radiotherapy at NNUH between 1st January and 31st December 2023 was undertaken to review radiotherapy site and record of thyroid function testing within a year of completing radiotherapy. Exclusion criteria: radiotherapy to non-head and neck sites, palliative radiotherapy, pre-existing thyroid disorder, death within 12 months of radiotherapy, involvement in clinical trials with immunotherapy (COMPARE trial) or proton beam radiotherapy (TORPEDO trial), or no radiotherapy to the neck nodal levels beyond primary (apart from larynx alone).

Thyroid function checked within 12 months



Results

200 patients were identified, and after applying exclusion criteria 89 patients remained. Of these: 62 patients had bilateral neck radiotherapy, 19 patients had unilateral neck radiotherapy, 8 patients had larynx only radiotherapy. 28% (n=25) had thyroid function checked within 12 months of completing radiotherapy, of whom 20% (n=5) patients had either of hypothyroidism or subclinical hypothyroidism, and 1 had hyperthyroidism. The indication for checking thyroid function could not be confirmed.

Conclusion

We would recommend all patients who receive radiotherapy to the neck have thyroid function checked within a year, but with current practice only 28% had this done. We plan to implement a standard discharge letter to the GP after neck radiotherapy with recommendations for ongoing care including thyroid function monitoring and re-audit to assess efficacy of this intervention. 20% patients tested had deranged thyroid function (predominantly hypothyroidism) which is in keeping with reported rates.¹

References

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