

## **Role of thyroglobulin antibodies in the long term follow up of differentiated thyroid cancers- A case series**

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### Introduction

Serial estimation of serum Thyroglobulin(Tg) levels is a commonly employed tool to monitor recurrence of differentiated thyroid cancers (DTC), post thyroidectomy and ablation. Measurement of Tg is affected by the presence of thyroglobulin antibodies(TgAb) depending on the assay platform. Since TgAb levels are sensitive to the mass of Tg producing tissue, the trend in TgAb levels itself can be used to detect remission or relapse of DTC.

We present three case reports in which TgAb levels were used to identify recurrence in DTC

Patient 1 with papillary thyroid cancer, post total thyroidectomy and radioablation was on levothyroxine treatment. Till year 10, her Tg levels were suppressed while TgAb levels rose progressively (Year 1: 84 IU/ml, Year 3: 1403 IU/ml Year 10: 2931.3 IU/ml, Year 14: 3133 IU/ml). Radioiodine scan showed uptake in the neck nodes, which were resected and the patient radioablated again. TgAb levels fell to 667 IU/ml but started rising over the next two years to 890 IU/ml and 1028 IU/ml respectively. While iodine scan showed no uptake, <sup>18</sup>F-DG PET scan revealed uptake in mediastinal lymph nodes.

Patient 2 had similar history with wide fluctuations in Tg measurements varying(0.01 to 8000 ng/ml) due to assay interference with TgAb. Progressive rise in TgAb levels resulted in detection of cervical lymph node recurrence.

Patient 3 was interesting in that the titre of TgAb was not very high albeit showing a rising trend (Year 4: 6.76 IU/ml to Year 6: 13.52 IU/ml). A PET- CT fusion imaging confirmed mediastinal lymph node recurrence.

### Conclusions

In patients with DTC being monitored for recurrence, presence of TgAb makes thyroglobulin assays difficult to interpret and follow up. In these patients, serial estimation of TgAb itself can be used to monitor DTC patients for remission or recurrence.