

## Background

Papillary thyroid cancer (PTC) is the most common endocrine malignancy in children. PTC shows more aggressive progress in children than in adults in respect to local and distant metastases.

Here we presented a PTC case with primary pulmonary symptoms and pulmonary metastasis.

## Case 15.5 year old male

- Cyanosis and respiratory difficulty (for the last 2 years)
- Dyspnea, central cyanosis, clubbing
- SpO<sub>2</sub>70% was under O<sub>2</sub> therapy
- Referred to Pediatric Pulmanology for evaluation
- Bilaterally decreased respiratory sounds on chest examination
- CXR showed diffuse interstitial infiltration
- Thyroid nodul was palpated (3x3cm hard and immobile)

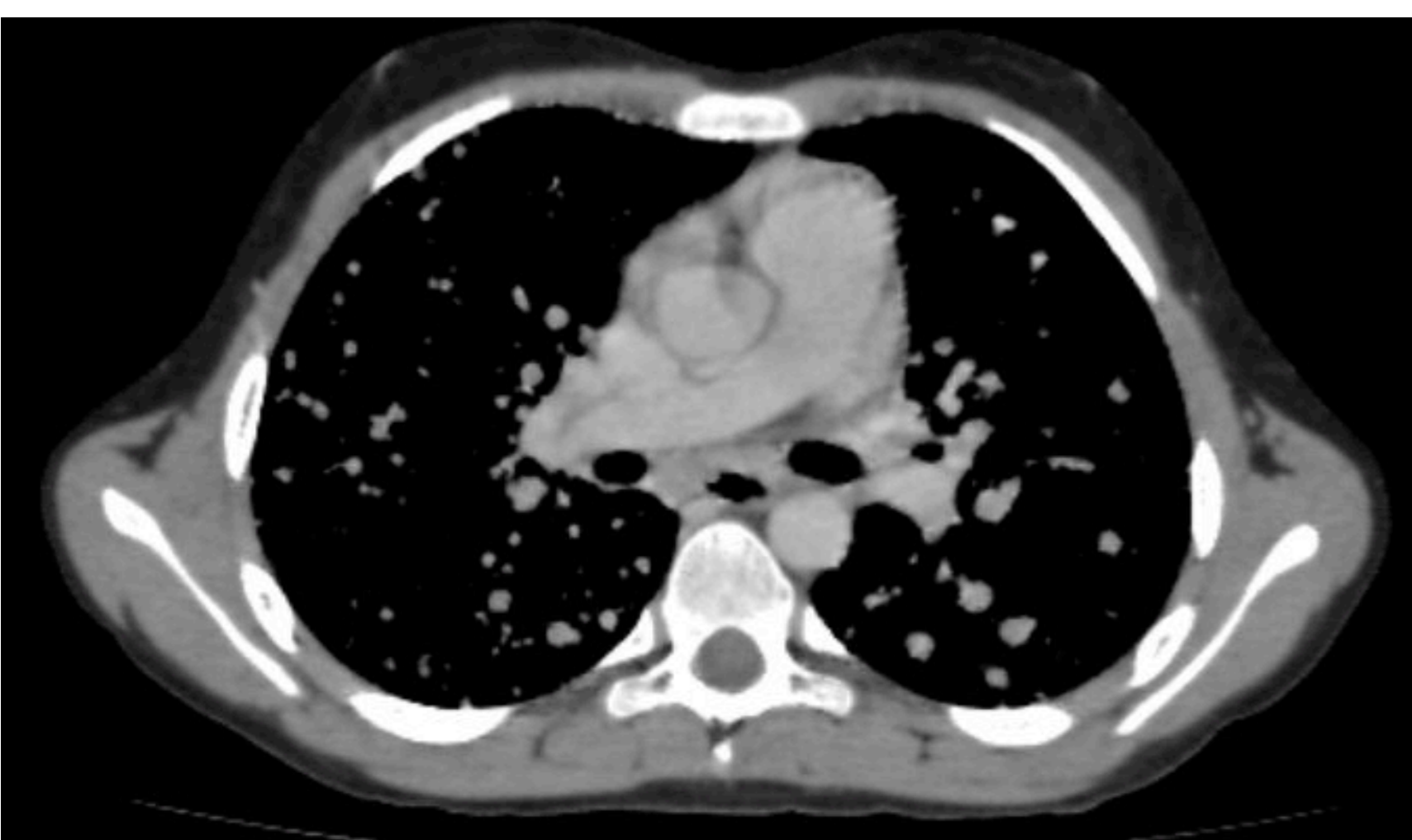


Figure 1. Thorax CT  
Diffuse infiltration of lungs with multinodular parenchymal infiltrations, mediastinal lymph nodes.

## Lung biopsy : Metastatic papillary thyroid cancer.

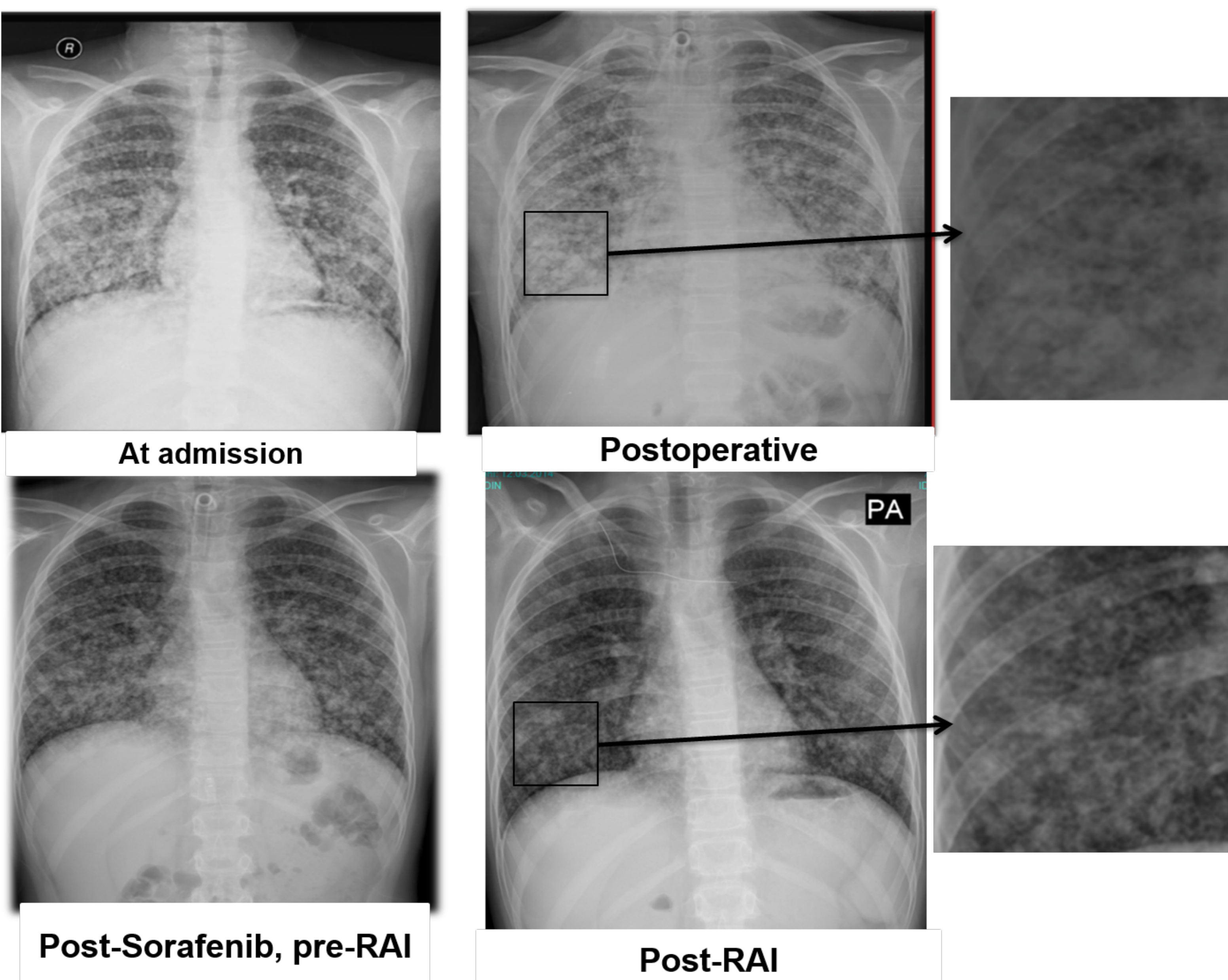


Figure 3. Chest graphs during the clinical course

## Treatment

- ❑ Subtotal tumor resection could be performed due to invasion of tumor to carotid artery and trachea and deterioration of oxygen saturation during surgery. Laryngeal nerve paralysis occurred and tracheostomy was applied after surgery.
- ❑ Radioactive iodine (RI) ablation could not be performed due to intensive care and oxygen requirement.
- ❑ **Sorafenib (a multikinase inhibitor) had been initiated**
  - Thyroglobulin levels decreased (Figure 2)
  - Oxygen requirement was significantly improved
- ❑ Ablative RI (175 mci) treatment after recombinant TSH administration could be performed after 4 weeks of sorafenib treatment with 10 days off treatment
- ❑ Diffuse uptake in neck and lung were detected on whole body scan after RI ablation.
- ❑ Sorafenib had been reinitiated 5 weeks after RI ablation due to elevation of serum thyroglobulin levels.
- ❑ The patients' oxygen requirement gradually decreased, and disappeared at the time of tracheostomy closure which was 40 days after RI ablation.
- ❑ The patient has still on Sorafenib treatment for 8 months without any complication

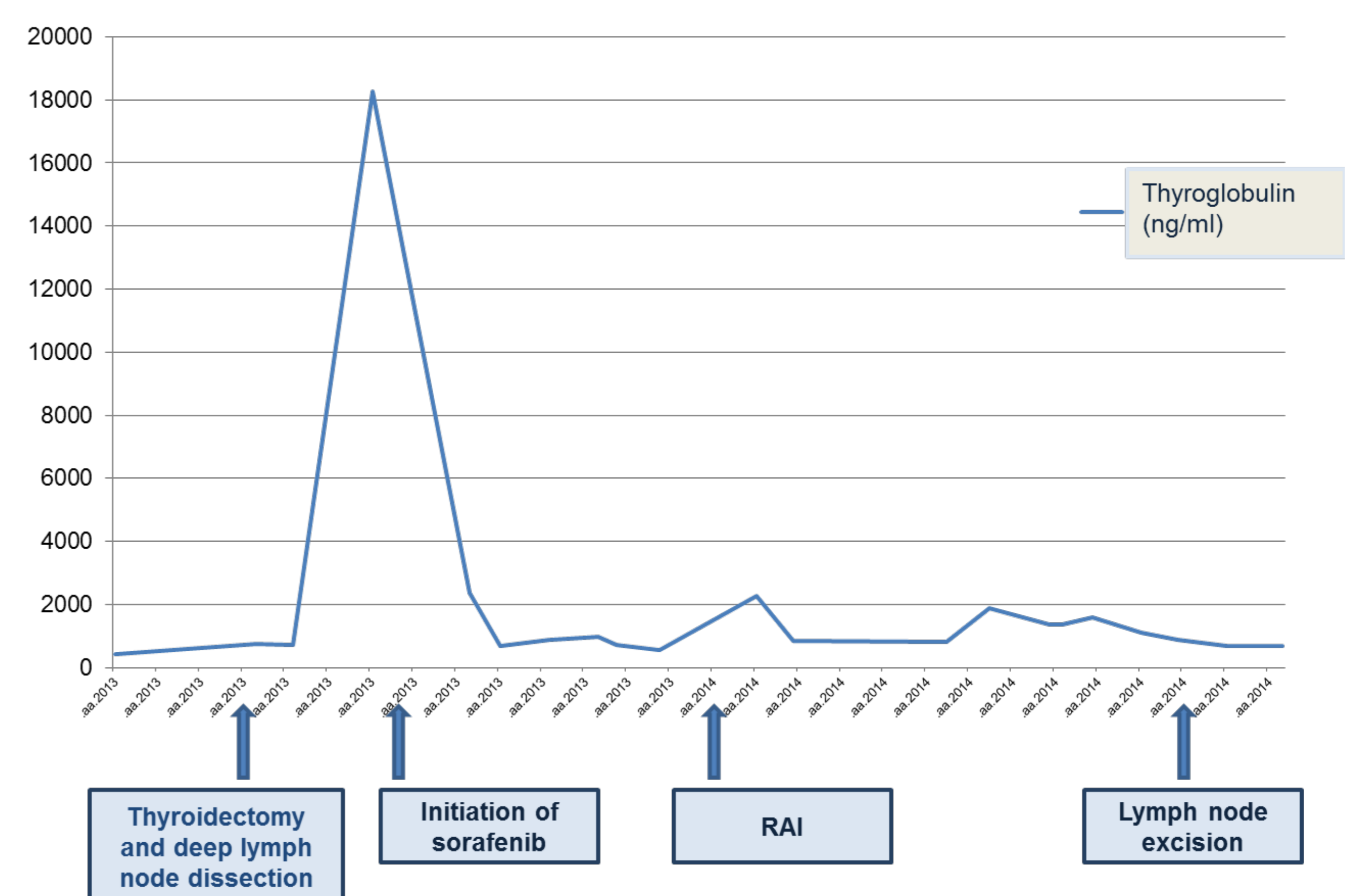


Figure 2. Thyroglobulin levels

## Conclusions

- ✓ Although PTC is a low grade malignancy, delayed diagnosis may cause complicated clinical course and make the treatment challenging.
- ✓ Tyrosine kinase inhibitors are recently discovered molecules and used in various oncological malignancies with success. Here we present successful use of Sorafenib in a case with advaced PCT with diffuse lung metastasis.