

# MANAGEMENT AND TRANSCENDENCE OF INCIDENTAL THYROID 18FDG-PET FOCAL UPTAKE (PEToma)

Anna Casteràs Roman<sup>1</sup>, Carles Zafon Llopis<sup>1</sup>, Amparo García Burillo<sup>2</sup>, Diego Villasboas Roscioles<sup>2</sup>, Maite Salcedo Pujanell<sup>2</sup>, Jaime Monturiol Duran<sup>2</sup>, Joan Castell Conesa<sup>2</sup>, Jordi Mesa Manteca<sup>1</sup>.

<sup>1</sup> Endocrinology Department, University Hospital Vall d'Hebron, Barcelona, Spain

<sup>2</sup> Department of Nuclear Medicine, University Hospital Vall d'Hebron, Barcelona, Spain

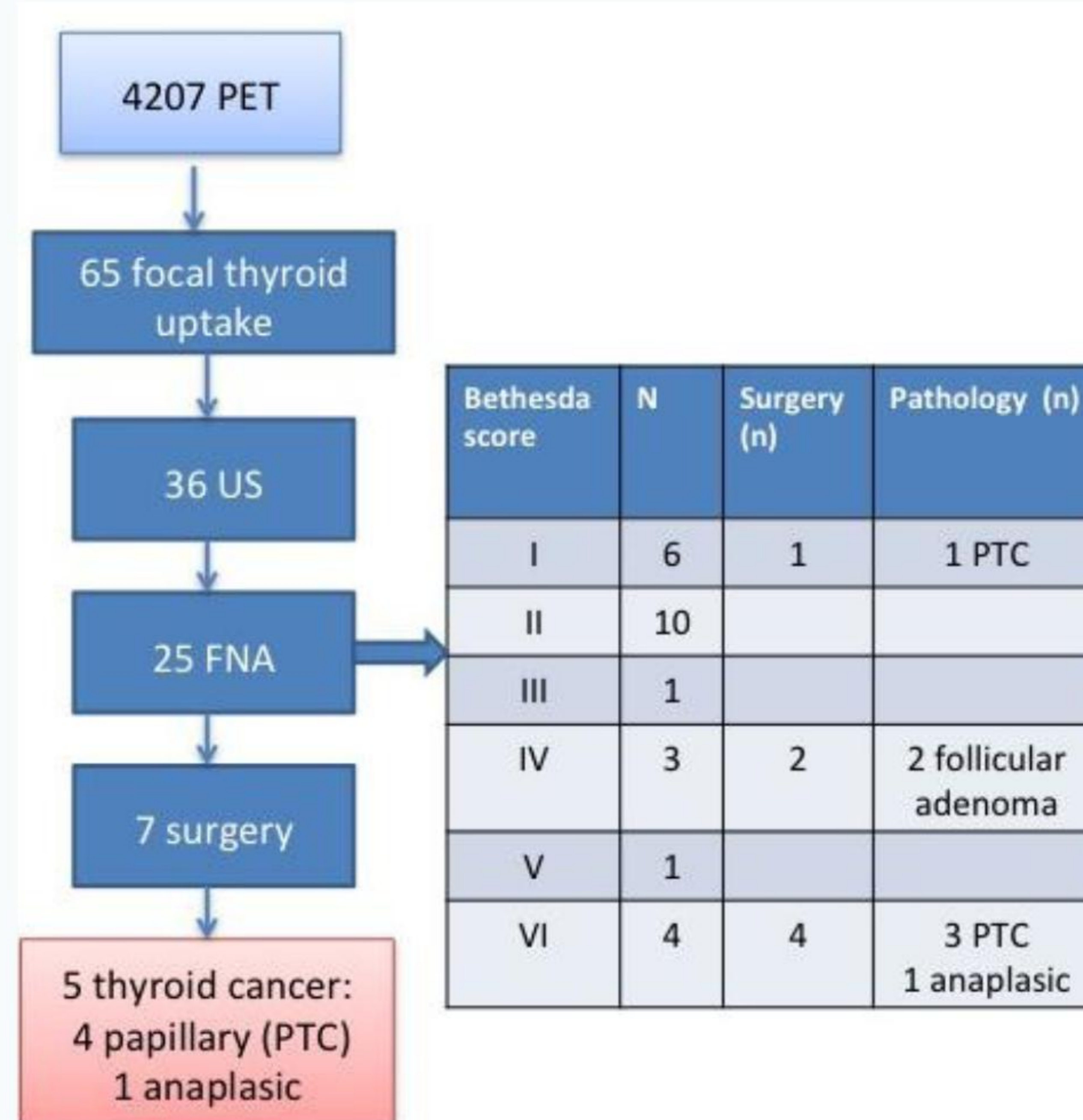
**INTRODUCTION:** Incidental focal uptake in the thyroid gland is detected in 1%–2% of 18FDG-PET examinations. FNA is recommended due to an increased risk of malignancy (25-50%). However, these figures are extracted from the studied cases, which are only about a half of all thyroid PETomas. Moreover there is controversy about the maximum standardized uptake value ( $SUV_{max}$ ) ability to discriminate between benign or malignant nodules.

**METHODS:** We retrospectively reviewed 4207 FDG-PET scans performed for non-thyroidal reasons from January 2013 to October 2014 at our institution. Patients with focal thyroid uptake were assessed for age, sex, underlying conditions,  $SUV_{max}$ , TSH, ultrasound, FNA cytology and pathological findings.

## RESULTS:

- 65 cases (1,54% of PETs) showed focal thyroid uptake, 41 (63%) females, median age (SD) 70 (12) years.
- Median (SD)  $SUV_{max}$  was 7.4 (6), [1.4- 32].
- In global 49 patients (75.4 %) were found to have cancer, most common lung cancer and lymphoma, and currently 19 patients (29.2%) have died.
- Ultrasound was performed in 36 patients (55,4%): single nodule 16, multinodular 19, normal 1; mean nodular size was 16.6 (9.6) mm; in 9 cases the nodule was suspicious.
- Twenty-five cases (38.5%) underwent FNA.
- Bethesda score was benign (II) in 40%, followed by insufficient sample (24%) and malignant (VI) in 16% of cytologies.
- Seven patients were operated on, 5 were thyroid cancer. ( Fig 1)

Fig 1. Thyroid PEToma flowchart



- Higher  $SUV_{max}$  values prompted FNA exam (p 0.01), however any relation was found between  $SUV_{max}$  and cytology (p 0.44) nor nodular size (p 0.07).
- There was a direct correlation between TSH levels and  $SUV_{max}$  (p <0.001), but disappeared when analyzing euthyroidal patients (TSH 0.5-4.5, n= 53) p 0.9

## CONCLUSIONS

- ✓ We report similar frequencies and clinical workup of thyroid PEToma compared to previous series.
- ✓ Few cases underwent thyroidectomy, however thyroid cancer was a frequent histological finding.
- ✓  $SUV_{max}$  could not determine risk of malignancy.

