

FNA: a gold standard in the diagnosis of thyroid nodules in children after chemotherapy

S. LEKA-EMIRI¹, F. PETYCHAKI¹, V. PETROU¹, A. POURTSIDIS², E. VLACHOPAPADOPOULOU¹, S. MICHALACOS¹

¹ DEPT. OF ENDOCRINOLOGY-GROWTH AND DEVELOPMENT, ² DEPT. OF ONCOLOGY, CHILDREN'S HOSPITAL "P. & A. KYRIAKOU", ATHENS, GREECE

INTRODUCTION

Non-Hodgkin lymphoma (NHL), is the fourth most common malignancy during childhood. Chemotherapy constitutes the first line of treatment. Chemotherapy can cause a number of endocrine side effects such as:

- Retardation of growth
- Hypergonadotrophic hypogonadism
- Loss of bone mass
- Rarely, the development of secondary malignancy

• 1%-2% of childhood population may have thyroid nodules

Children bearing nodules have a higher incidence of thyroid malignancy as compared to adults (26% vs 10%).

RISK FACTORS:

- Irradiation
- Female sex
- Iodine deficiency
- Puberty
- Past medical history of thyroid disease

AIM

To present the case of an 11-year-old girl with thyroid malignancy after chemotherapy for NHL

PATIENTS AND METHODS

A 7-year-old girl was diagnosed with NHL and underwent chemotherapy until the age of 9 years with the **BFM 95** protocol (intensive phase of 6 months with vincristine, cyclophosphamide, aracytine, asparaginase and maintenance phase of 18 months with mercaptopurine and methotrexate). At her first evaluation, 9^{3/12} yrs, she was prepubertal, her height and weight were among the 3rd 10th centile. Thyroid gland evaluation was normal. Thyroid function tests and sonographic appearance were normal through her 6-month follow-up. At the age of 11 yrs, thyroid u/s revealed a solid mass sizing 1.23x1x0.68cm with blurred limits, heterogeneous consistency, calcifications (fig. 1) and moderate vascularity (fig. 2).

FNA revealed a papillary neoplasm (fig 3, 4)

Total thyroidectomy

Histopathology: multi-focused, diffused papillary neoplasm

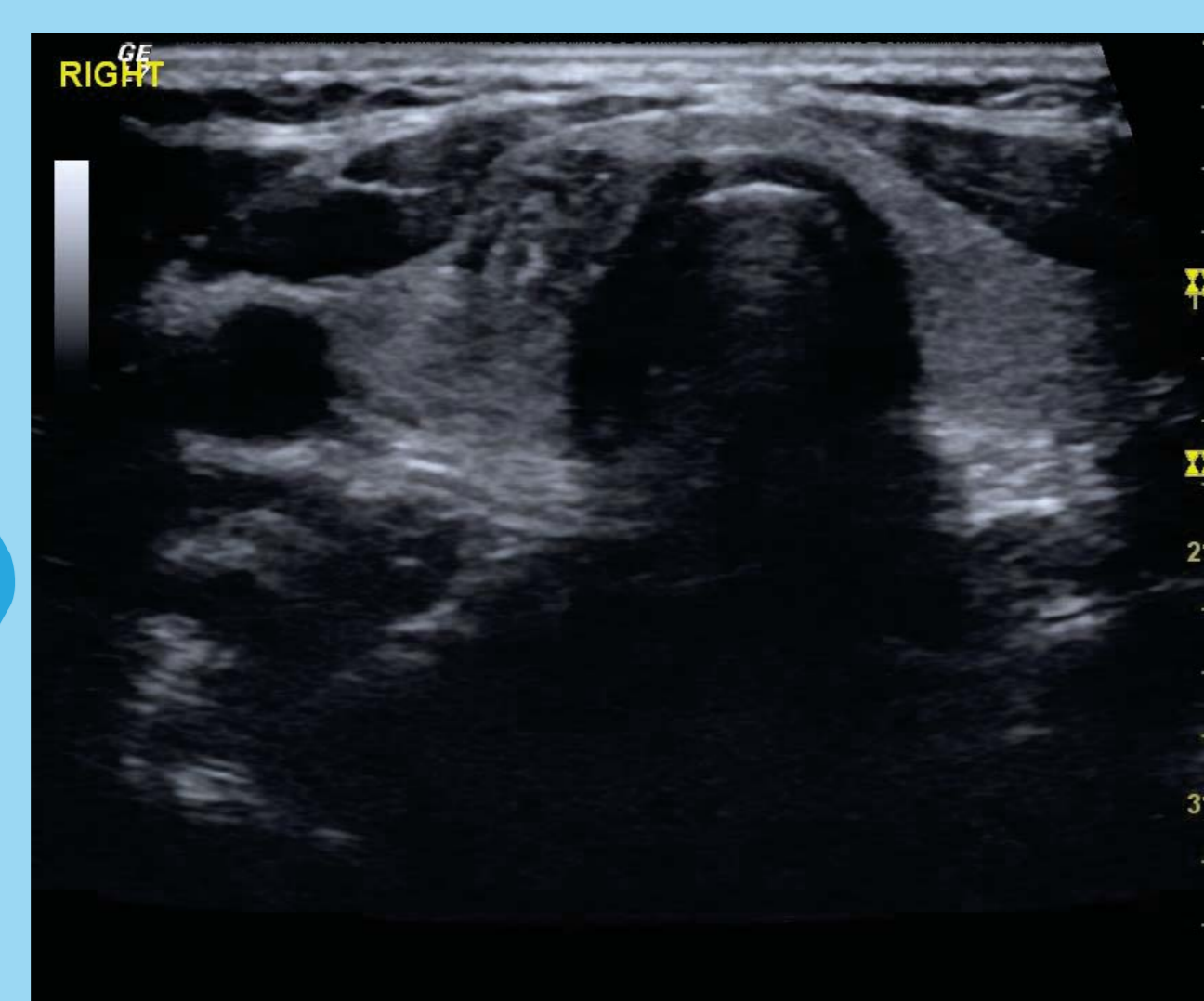


Fig. 1

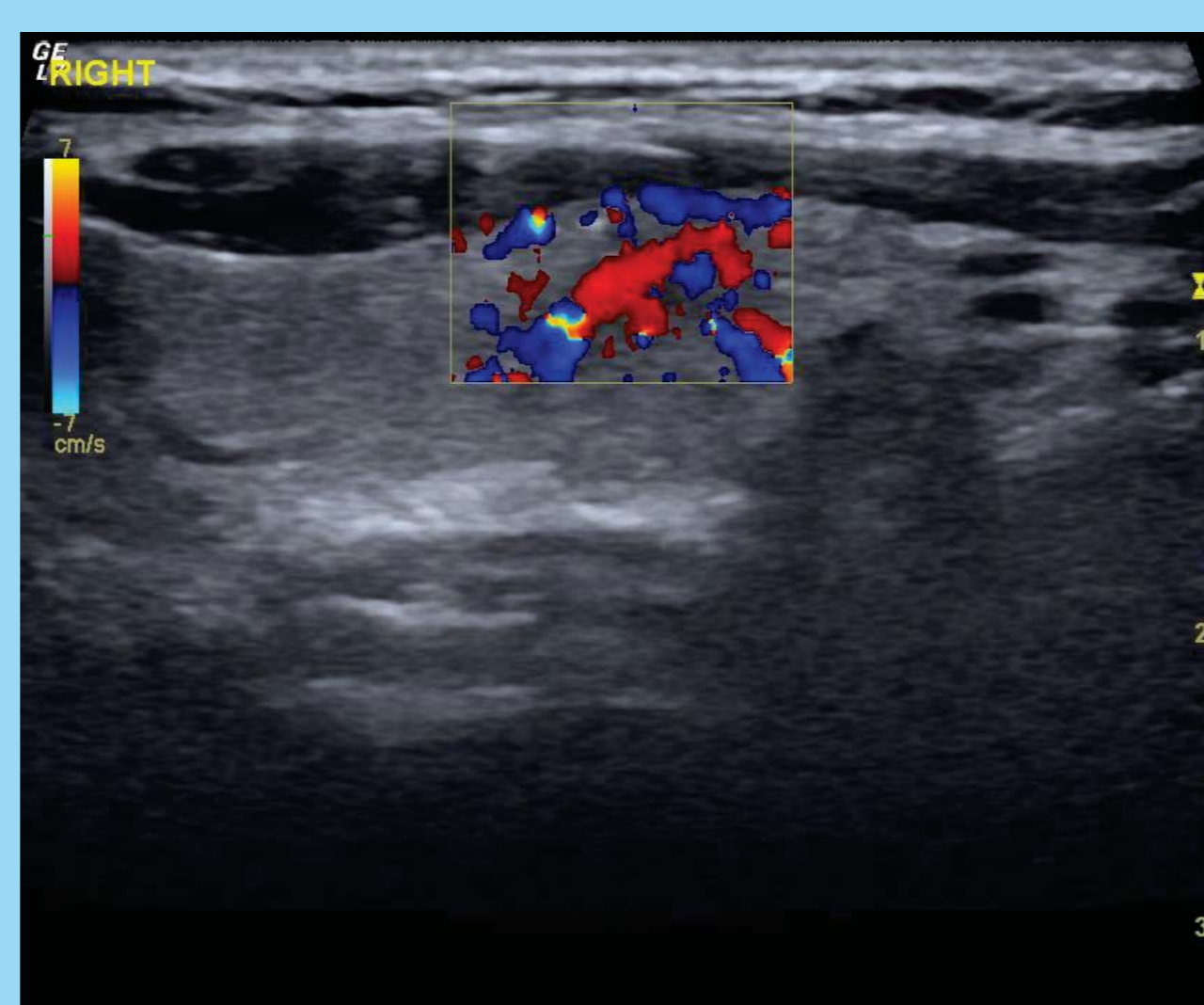


Fig. 2

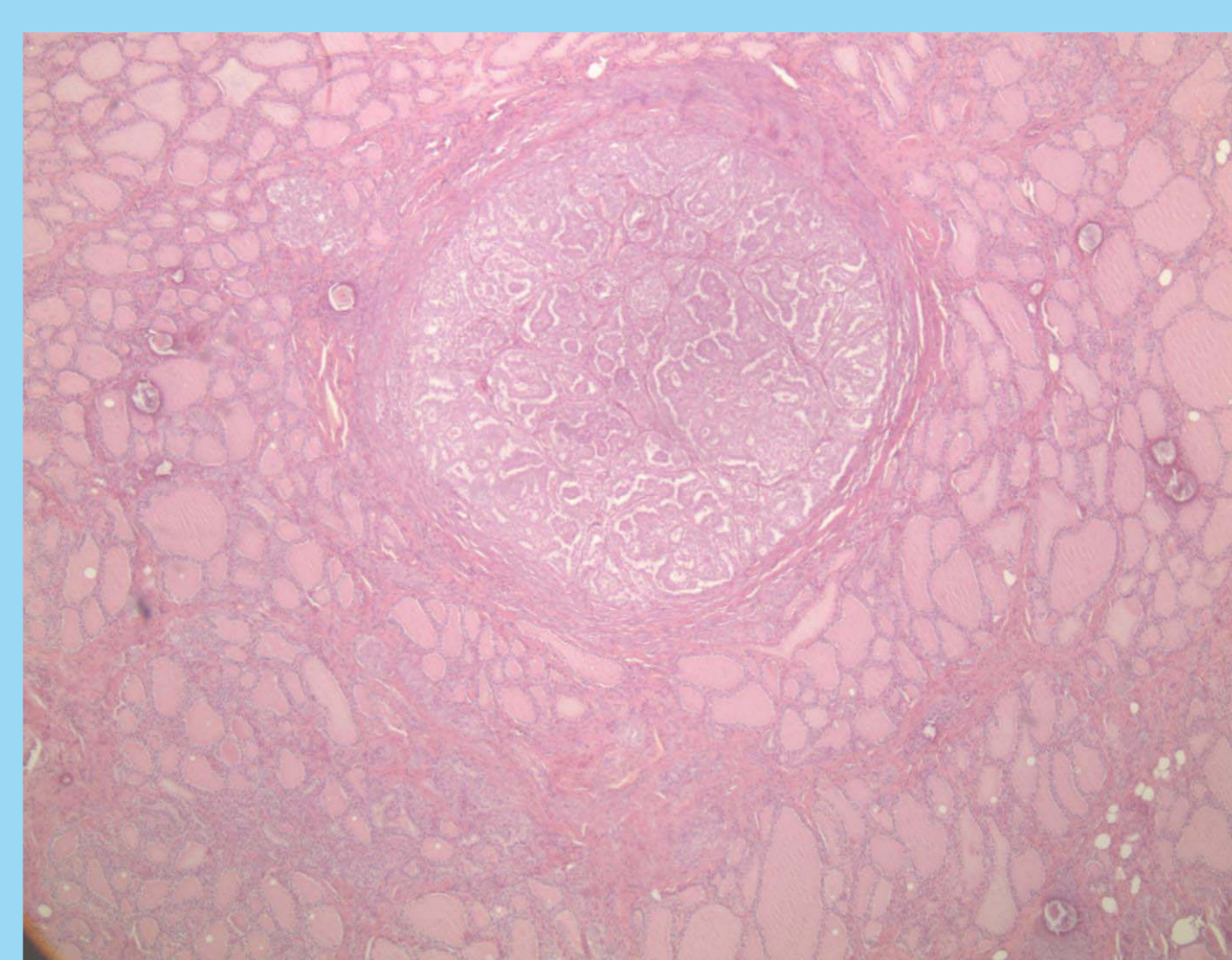


Fig. 3

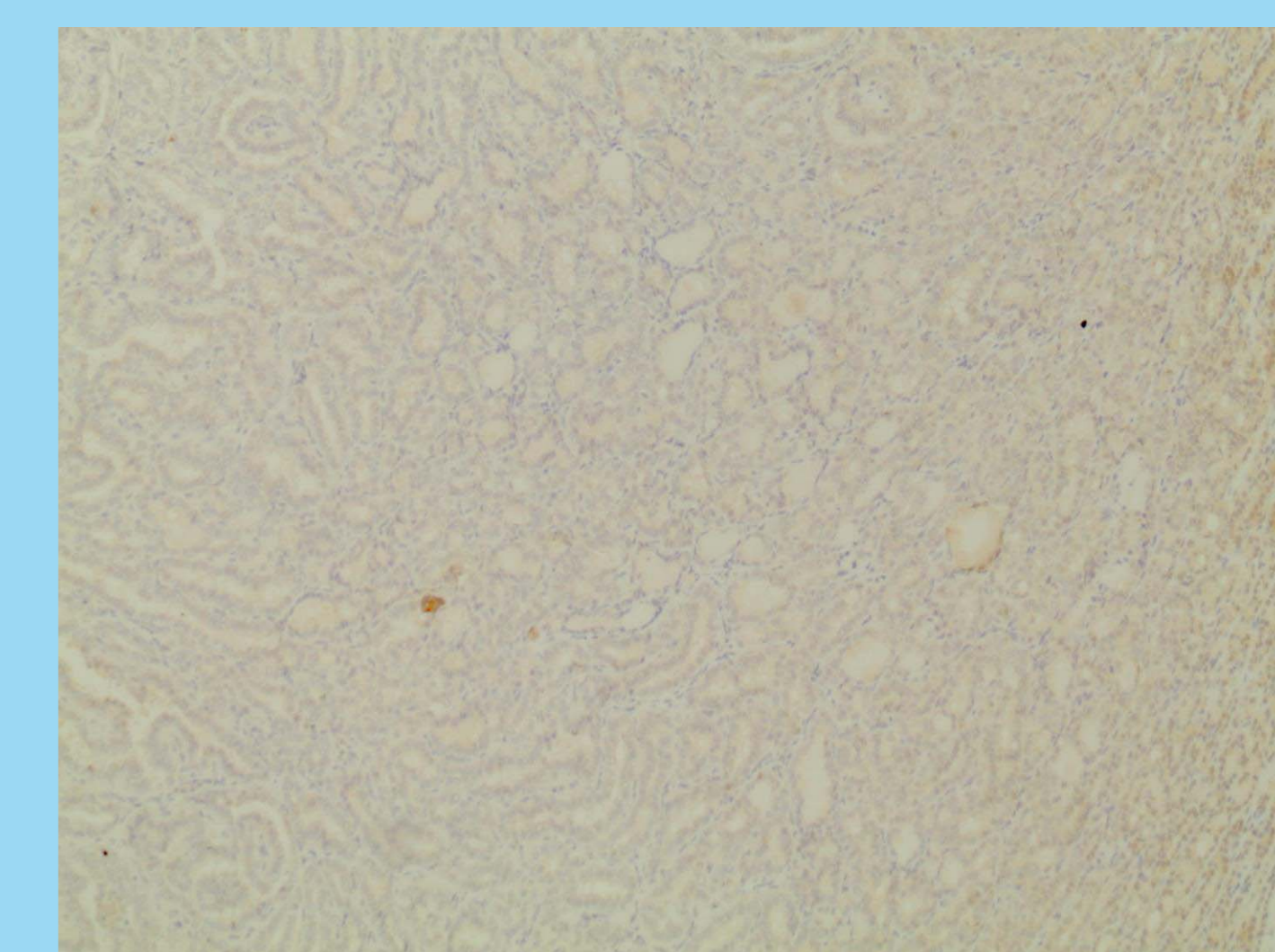


Fig. 4

CONCLUSIONS

While irradiation is a known risk factor of thyroid malignancy, increased thyroid's neoplasm incidence has not been described after chemotherapy. It is known that developing a second malignancy is more frequent in children initially diagnosed at a younger age. Younger patients may have a genetic predisposition.

The term secondary malignancy concerns the development of neoplasm 5 years after the initial diagnosis. The papillary neoplasm in discussion can be considered another primary malignancy mindful of its appearance 4 years after the initial diagnosis of NHL.

Our case emerges the necessity of systematic follow up of the thyroid gland (detailed medical history, physical examination and laboratory exams) for children that underwent chemotherapy. FNA represents the gold standard for diagnosing a thyroid nodule identified through palpation or ultrasound.

Bibliography

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