A 50-year-old male patient was admitted to our Department for a thyroid nodule on the right side of the neck, which was incidentally detected on carotid Doppler ultrasound scan.
Fine-needle aspiration cytology (FNAC) showed a follicular lesion.
At the time of our evaluation, the patient was in good health.
The medical history revealed hypertension, vitiligo, and celiac disease.
On physical examination, a small nodule (1 cm) was palpable in the right thyroid lobe.
No enlarged neck lymph nodes were palpable.
Neck ultrasound showed a 1.3 cm hypoechoic nodule with irregular margins in the right thyroid lobe together with bilateral small thyroid nodules (4–5 mm) and the absence of enlarged cervical bilateral lymph nodes.
Thyroid function tests were normal with the absence of thyroid autoantibodies.
Serum calcium was normal (9.7 mg/dl; normal range, 8.4–10.4 mg/dL) and PTH, routinely measured together with serum calcium in our Center in patients undergoing thyroid surgery, slightly elevated (68 pg/mL (intact PTH, 2nd generation assay; normal range, 10–65 pg/mL)).
The re-review of the original slides of FNAC confirmed a follicular lesion.
In particular, the cytology of the nodule showed epithelial cells with hyperchromatic nuclei organized in small cohesive clusters resembling microfollicles typically observed in thyroid follicular lesions were evident (Fig.1a).
The patients underwent right lobectomy.
During neck exploration, there were no macroscopic signs of local invasion.
The intraoperative frozen-section pathological examination raised the suspicion of a PC.
Definitive histology showed a markedly irregular infiltrative growth of the tumor with invasion of the thyroid tissue and cervical soft tissues (Fig.1b, c).
Immunostaining for thyroglobulin was negative, whereas staining for chromogranin A and PTH showed a strong reactivity (Fig.1d–f).
Based on the light microscopic findings and the immunohistochemical profile, the tumor was diagnosed as a PC.
Postoperative serum calcium (8.7 mg/dl) and phosphate (3 mg/dl) levels were in the normal range.
One month after surgery, serum calcium and plasma PTH were 9.6 mg/dL and 47 pg/mL, respectively.
Neck ultrasound and total body computed tomography scan were negative for local and metastatic disease.
Eight months later, serum calcium and plasma PTH levels were 9.1–9.2 mg/dl and 38–44 pg/ml (1–84 PTH 3rd generation assay, normal range, 8–40 pg/mL), respectively.
Neck ultrasound did not show any pathological lesions.
In order to exclude a familiar form of PHPT, in which PC may rarely occur as a nonfunctioning tumor [11], the screening of serum calcium and neck ultrasound in the first-degree relatives was normal.