



PRIMARY HYPERPARATHYROIDISM DUE TO PARATHYROID CARCINOMA - CASE REPORT

Agnieszka Zwolak^{1,2}, Anna Dąbrowska¹, Jerzy Tarach¹

¹ Department of Endocrinology, Medical University in Lublin, Poland

² Chair of Internal Medicine and Department of Internal Medicine in Nursing, Medical University in Lublin, Poland

Introduction:

Parathyroid carcinoma (PC) is a rare endocrine malignancy and the cause of primary hyperparathyroidism. It is usually associated with a high rate of local and distant recurrence. Laboratory findings and clinical symptoms may be similar to those in parathyroid adenoma. The histological features of PC may be also not specific and the affected gland is often indistinguishable from a benign lesion. The proper diagnosis is commonly made months to years later when the disease recurs or metastases are present.

Case report: A 49-year-old man, after resection of parathyroid adenoma (postoperatively with normalization PTH concentrations and hungry bone syndrome), with limbs' fractures due to fall from his height, was admitted to Department of Endocrinology because of high serum levels of PTH (913pg/ml; n.14-72) and calcium (13,0mg/ml; n.8,4-10,4).

MIBI and CT scans showed enlarged lower right parathyroid gland (Fig 3,4,5). Reoperation and total strumectomy of the right lobe was performed but the decrease in PTH and calcium levels have not been observed (Fig.1). Few weeks later, Ca and PTH increased to 17,7mg/dl and 2910pg/ml respectively. Additionally left kidney nephrolithiasis, brown tumours of the iliums and in the skull have been observed (Fig.2). 18-FDG PET-CT showed metabolic active lesion on the left side of the trachea which has been removed. Histological postoperative examination confirmed the suspected diagnosis of parathyroid carcinoma. After short-term improvement, PTH and calcium concentrations increased again (PTH- 5570pg/ml; Ca- 16,8mg/dl). The check-up CT revealed recurrent peritracheal pathological mass (19x25x30mm) with the impression of the esophagus. After fourth non-radical surgery, decrease but not normalization in PTH and Ca levels have been achieved. The patient was disqualified from radio- and chemotherapy.

To manage hypercalcaemia, besides typical treatment, zoledronic acid, pamidronian and cinacalcet have been used. Unfortunately, renal impairment, swallowing disturbances and dyspnea have been appeared. 12 months later after the diagnosis of primary hyperparathyroidism the patient died because of respiratory and cardiac failure.

Fig. 3 Whole Body MIBI scan

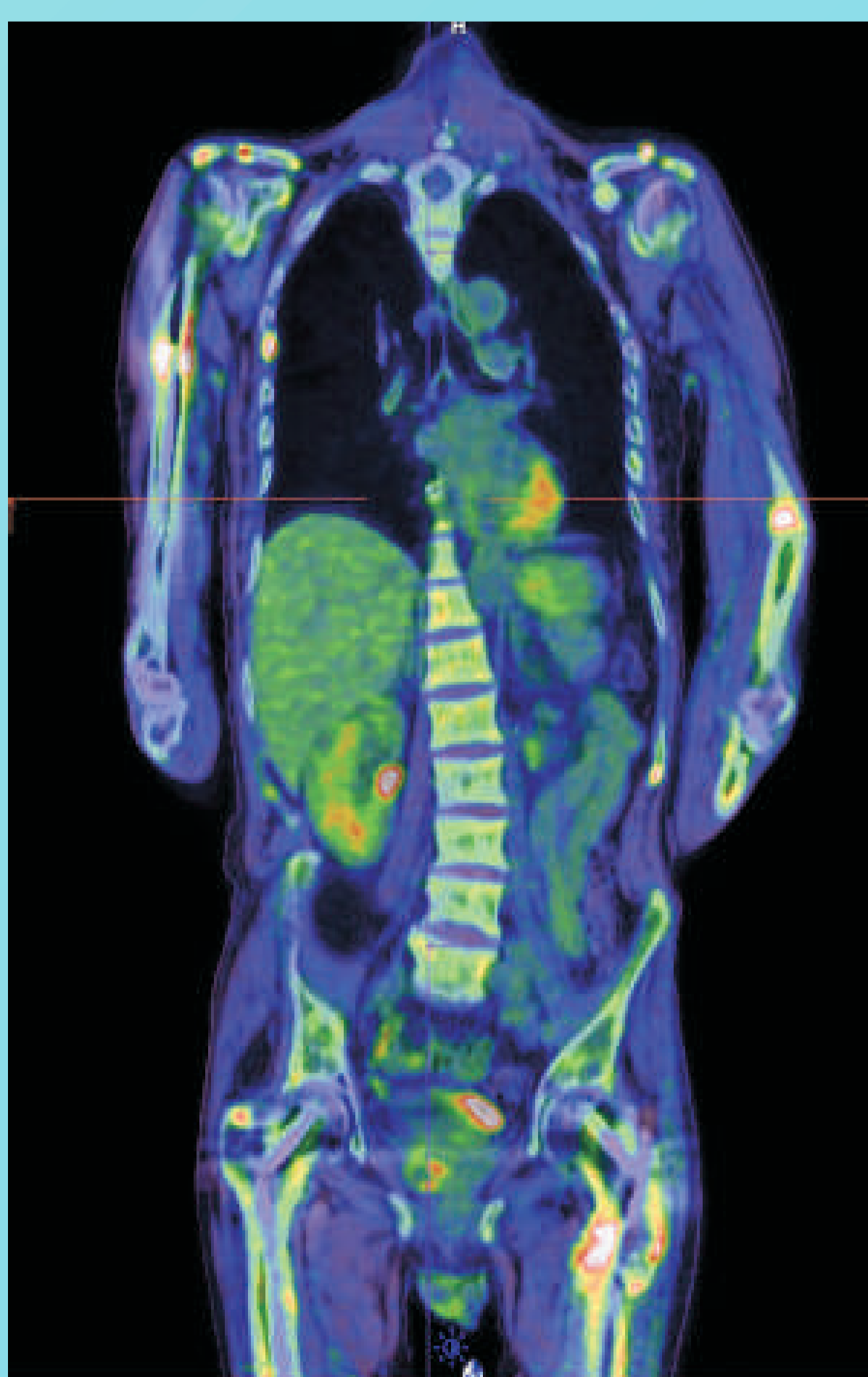


Fig. 4. Whole Body Bone Scan

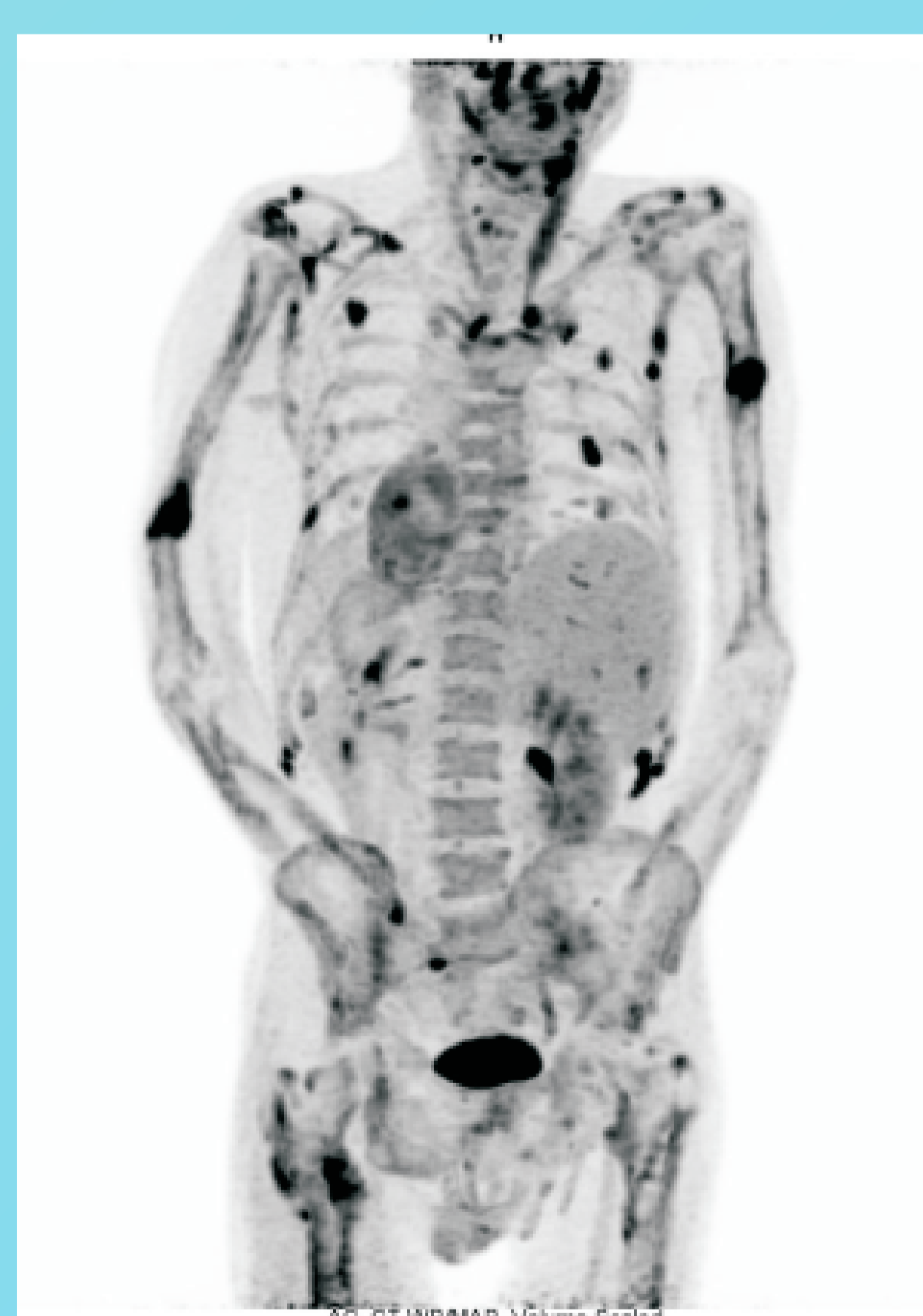


Fig. 5. PET

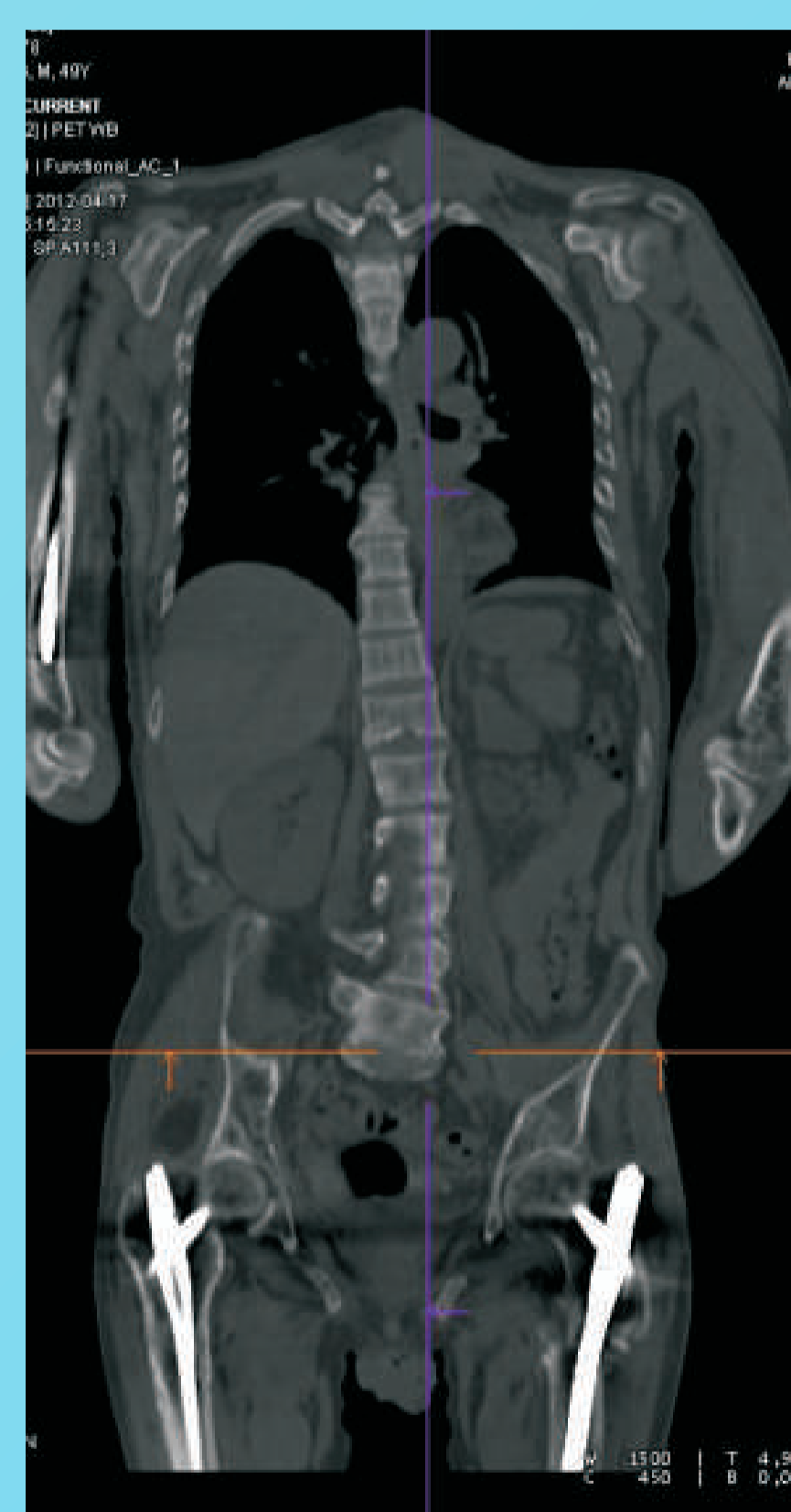


Fig. 1. Histopathological examinations

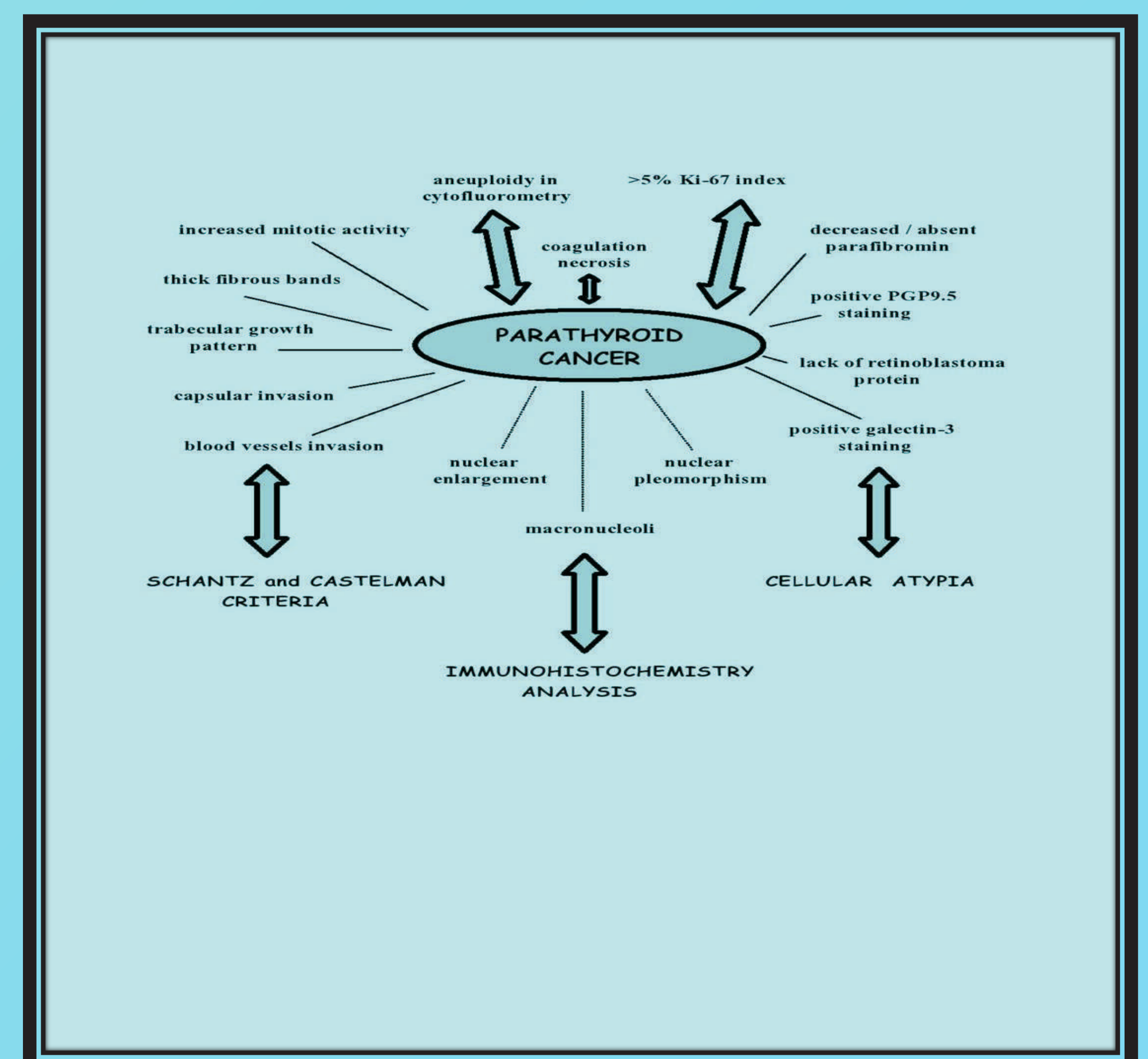


Fig. 2. Symptoms and signs which may indicate parathyroid carcinoma

- female : male ratio – 1:1
- average age -45-55 years
- symptomatic disease at the time of diagnosis (asymptomatic <5%)
- markedly elevated PTH level (>5 times normal or >500 pg/ml)
- high serum calcium level (>14mg/dl)
- high serum alkaline phosphatase concentration (>300 IU/l)
- elevated levels of α and β subunits of hCG
- renal involvement
- skeletal involvement
- severe pancreatitis or peptic ulcer disease
- palpable neck mass or palpable cervical swelling
- distant metastases
- hoarseness and recurrent laryngeal paralysis
- the tumour size >3cm
- multinodular surface of the tumour
- solid consistency of the tumour
- infiltration of surrounding tissues

Conclusions:

- Rare prevalence of parathyroid cancer, lack of typical symptoms and histological features usually cause delay in diagnosis that deteriorates prognosis.
- Therefore parathyroid carcinoma still remains diagnostic and management challenge for many physicians.
- Parathyroid cancers should be evaluated by experienced endocrinologists, pathologists and surgeons as well.
- Multidisciplinary approach is needed to optimize patient outcome.