

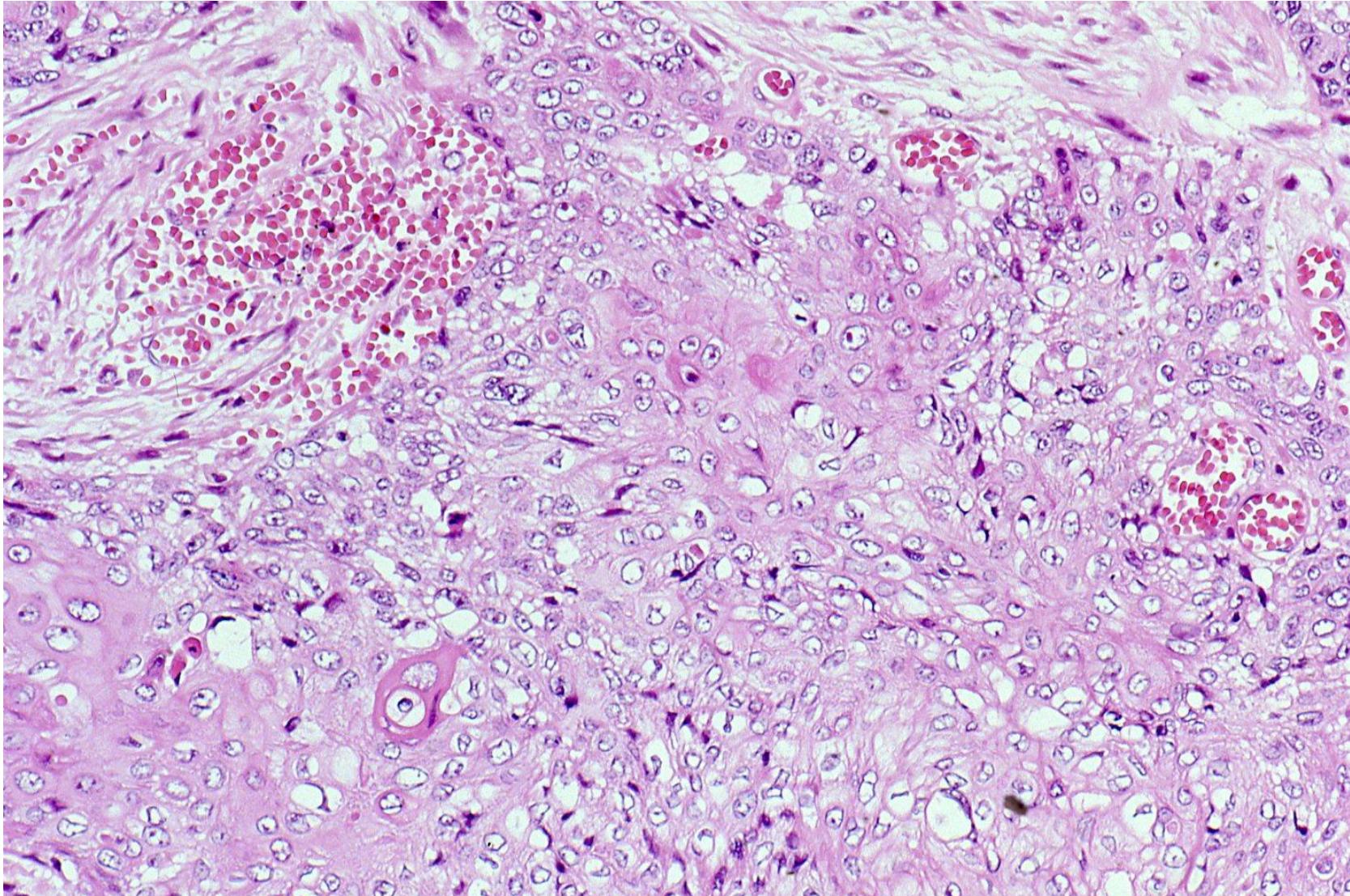
PTH-rP-producing nasopharyngeal squamous cell carcinoma

Humoral hypercalcemia of malignancy due to parathyroid hormone-related protein (PTH-rP) production by the tumor cells is often associated with squamous cell carcinoma. The patients often present with hypercalcemic episodes. The prognosis is extremely poor. Humoral hypercalcemia of malignancy is rarely encountered in nasopharyngeal squamous cell carcinoma. EBV-related non-keratinizing undifferentiated carcinoma is the most common type, particularly in Southeast China (Kanton/Hong Kong areas), while PTH-rP production is mainly seen in EBV-negative differentiated type squamous cell carcinoma with a poor prognosis.

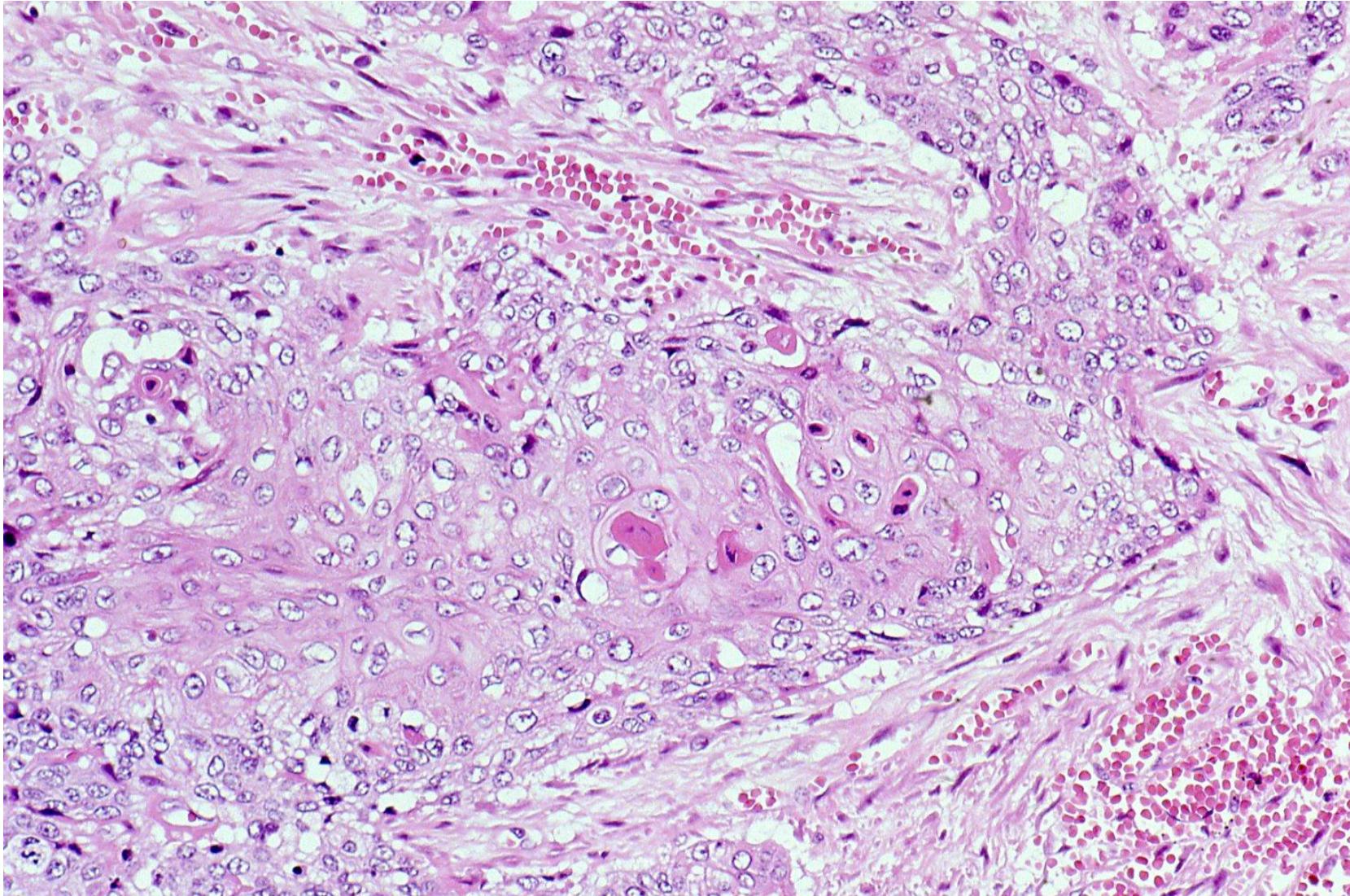
Ref.-1: Le Tinier F, et al. Cancer-associated hypercalcaemia in squamous-cell malignancies: a survival and prognostic factor analysis. *Int J Oral Maxillofac Surg* 2011; 40(9): 938-942. doi: 10.1016/j.ijom.2010.11.028

Ref.-2: Chaudhary S, Sah JP. Hypercalcemia due to nasopharyngeal carcinoma. *JNMA J Nepal Med Assoc* 2017; 56(205): 182-185. PMID: 28598460

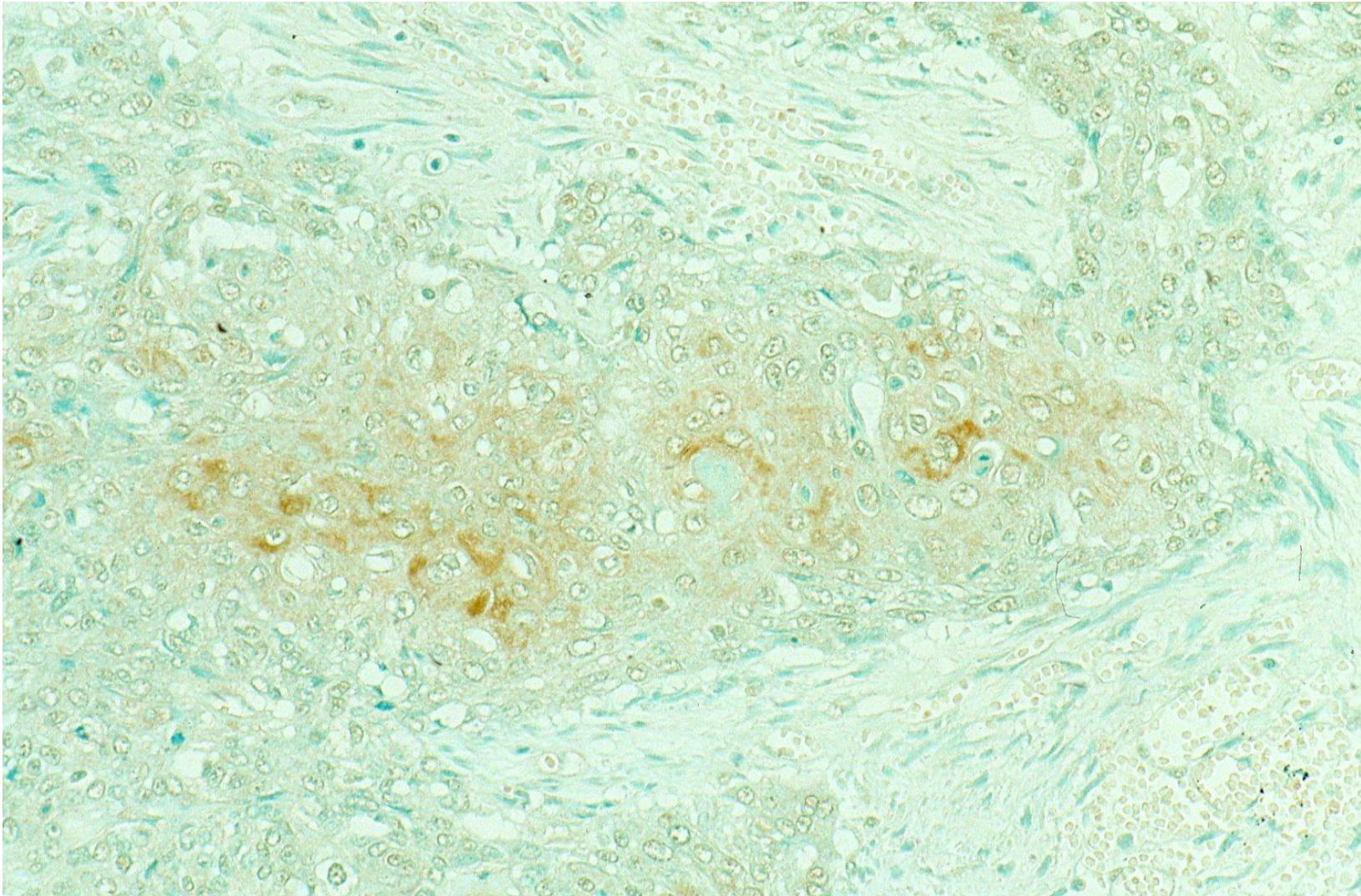
Ref.-3: Chen YP, et al. Nasopharyngeal carcinoma. *Lancet* 2019; 394(10192): 64-80. doi: 10.1016/S0140-6736(19)30956-0



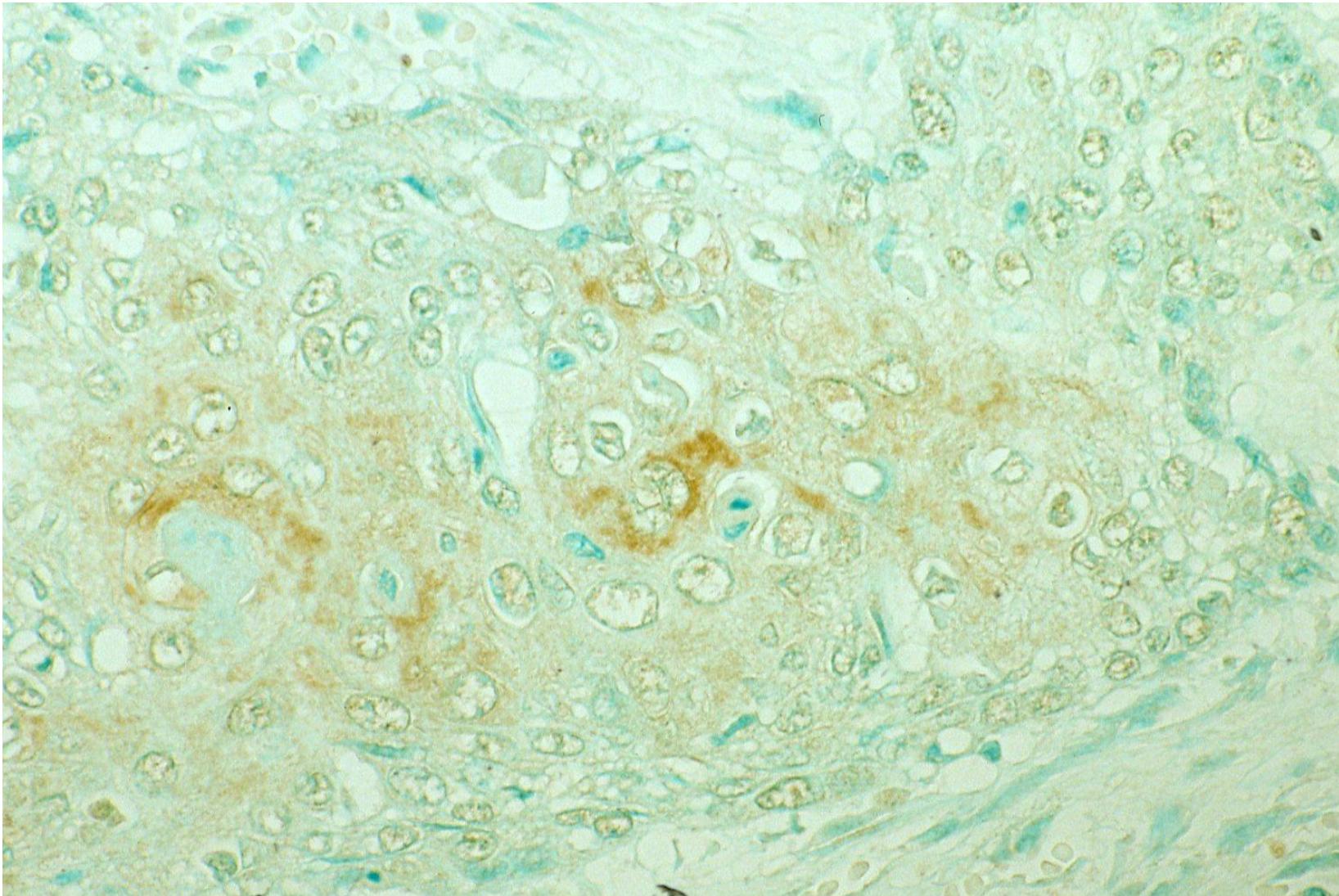
Differentiated squamous cell carcinoma of the nasopharynx seen in a Japanese male patient aged 50's. The patient presented with hypercalcemic episodes. At autopsy, the cancer metastasized to the lungs and liver. Keratinization is focally observed (H&E-1).



Differentiated squamous cell carcinoma of the nasopharynx seen in a Japanese male patient aged 50's. The patient presented with hypercalcemic episodes. At autopsy, the cancer metastasized to the lungs and liver. Keratinization is focally observed (H&E-2).



Differentiated squamous cell carcinoma of the nasopharynx seen in a Japanese male patient aged 50's. The patient presented with hypercalcemic episodes. The cancer cells are immunoreactive for PTH-rP in the center of the cancer nest (immunostaining for PTH-rP-1).



Differentiated squamous cell carcinoma of the nasopharynx seen in a Japanese male patient aged 50's. The patient presented with hypercalcemic episodes. The cancer cells are immunoreactive for PTH-rP in the center of the cancer nest (immunostaining for PTH-rP-2).