

## **PARATHYROID ADENOMA AND HYPERPLASIA**

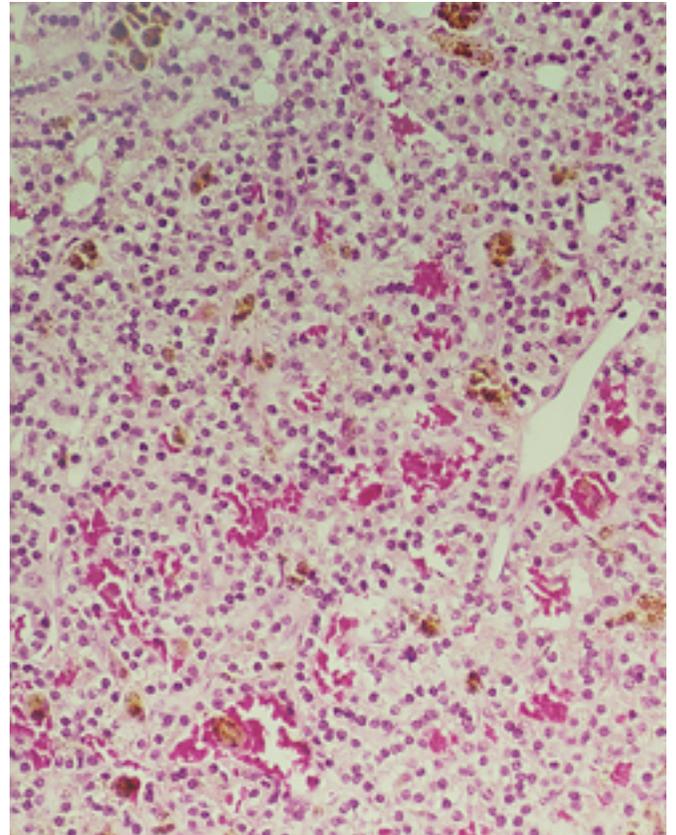
Parathyroid adenoma is a benign neoplasm of chief cells or less commonly of oncocytic (oxyphil) cells, or a mixture of the two. It is the single most common cause of primary hyperparathyroidism. The presence of normal parathyroid tissue at the periphery of an adenoma is a helpful feature in distinguishing adenoma from hyperplasia but even at best distinction may be difficult to distinguish from adenoma. Oxyphilic cells occur in some adenomas but rarely in hyperplasia and fat is characteristically absent in the parenchymal cell areas of both.

In adenoma and hyperplasia, fat is displaced by a proliferation of chief cells arranged in sheets (sometimes trabecular or follicular patterns.) The absence of fat helps distinguish adenoma from normal gland. Rarely, oxyphil cell hyperplasia occurs. There is lack of cellular pleomorphism. Another helpful feature, if present, is a rim of normal parathyroid tissue in the case of adenoma.

In hyperplasia all four parathyroid glands are affected although they are not necessarily enlarged. In adenoma usually only one gland is affected while the other parathyroid glands may become atrophic.

Parathyroid carcinoma is rare. Microscopically, parathyroid hyperplasia and adenoma are identical. One requires knowledge of the histology of a second gland to make this distinction.

Parathyroid, adenoma. In this case only one gland was enlarged. Red areas are hemorrhage and the pigment is hemosiderin. The tumor is composed of chief cells.



Parathyroid adenoma, Markedly hypercellular parathyroid with no adipose tissue. Chief cells have round uniform nuclei and a moderate amount of cytoplasm. Mitoses are very uncommon and more are seen in this field. Numerous hemosiderin laden macrophages are present.

