

Pheochromocytoma is a rare type of tumor that arises from certain cells known as chromaffin cells, which produce hormones necessary for the body to function properly. Most pheochromocytomas originate in one of the two adrenal glands located above the kidneys in the back of the upper abdomen. Most chromaffin cells are found in the adrenal gland's inner layer, which is known as the adrenal medulla. Approximately 90 percent of pheochromocytomas occur in the adrenal medulla. Approximately 10 percent occur outside of this area. These cases are referred to as extra-adrenal pheochromocytomas or paragangliomas. Paragangliomas may be found in the chest, heart, bladder, and/or neck or base of the skull. Symptoms associated with pheochromocytomas include high blood pressure (hypertension), headaches, excessive sweating, and/or heart palpitations. In most cases, pheochromocytomas occur randomly, for unknown reasons (sporadically). In approximately 25 to 35 percent of cases, pheochromocytomas may be inherited as an autosomal dominant trait. Some inherited cases may occur as part of a larger disorder such as multiple endocrine neoplasia types 2a and 2b, von Hippel-Lindau syndrome, neurofibromatosis or familial paraganglioma syndromes types 1, 3 or 4, or as familial isolated pheochromocytoma. Many different disorders and conditions share similar symptoms with pheochromocytomas especially neurogenic hypertension. Comparisons may be useful for a differential diagnosis. Thyrotoxicosis, hypoglycemia, anxiety or panic attacks, hyperthyroidism, adrenal medullary hyperplasia, familial dysautonomia, and intracranial lesions may also have similar symptoms. Various tumors including neuroblastomas, ganglioneuroblastomas, and ganglioneuromas may mimic pheochromocytomas. Symptoms associated with pheochromocytoma may be induced by the use of certain medications. Withdrawal of the medication clonidine may cause similar symptoms.