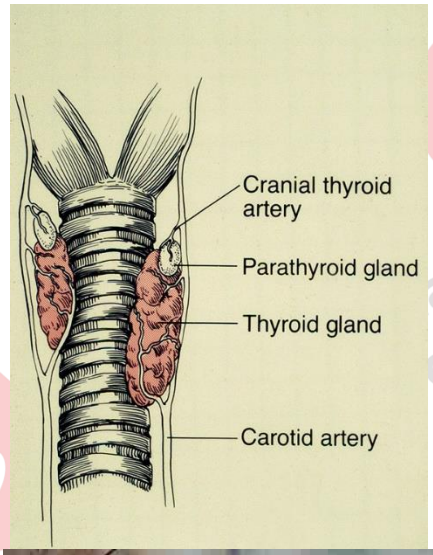
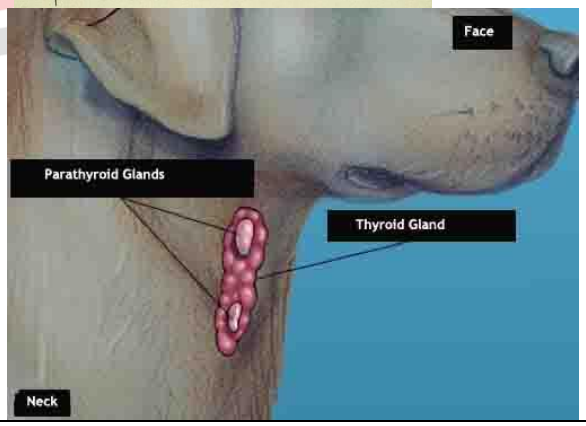
Parathyroid Tumors, Parathyroidectomy	Parathyroid glands are glands that play an important role in maintaining the blood calcium level in dogs and cats. Dogs and cats have a left and right internal parathyroid gland which are located within the left and right thyroid glands respectively and a left and right external parathyroid gland which are located on the cranial (top) aspect of the left and right thyroid gland respectively. These 4 glands secrete parathyroid hormone (PTH) which acts on the kidneys, intestines, and bones to increase the amount of calcium in the bloodstream. Parathyroid tumors are uncommon. These tumors can cause significantly elevated blood calcium that can result in serious toxic effects on the kidneys, stomach, intestines, brain, and heart. These tumors can occur in any dog or cat. A genetic predisposition has been found in the Keeshond breed of dogs.  

	Image of parathyroid gland anatomy. Image of the anatomical orientation of the parathyroid gland in the neck. Signs and Symptoms: Clinical signs of a parathyroid tumor are the result of hypercalcemia (abnormally high blood calcium) caused by the tumor. These tumors are commonly very small and typically not palpable. The most common signs of hypercalcemia are drinking more and urinating more, urinating more frequently, vomiting, and constipation. The effects of hypercalcemia can lead to the formation of urinary bladder stones. Prolonged hypercalcemia can eventually lead to permanent damage of organs particularly the kidneys. Diagnosis: The diagnosis of primary hyperparathyroidism (excessive secretion of PTH which causes hypercalcemia) is first suspected when hypercalcemia is identified on routine bloodwork. If hypercalcemia is identified on bloodwork, then further testing is indicated to determine the cause. Measuring the pet's PTH and PTH related-peptide is used to distinguish a parathyroid tumor from other neoplastic tumors such as lymphoma, multiple myeloma, and anal sac adenocarcinoma that may secrete PTH related-peptide which can cause hypercalcemia. In addition to bloodwork an ultrasound of the parathyroid glands may be performed to detect the presence of a tumor. Parathyroid tumors are usually single but bilateral parathyroid tumors can occur. Treatment: Parathyroid tumors can be surgically excised and submitted for biopsy. Surgical excision is performed through a midline incision in the neck and both the left and right parathyroid glands are evaluated. Most often the parathyroid tumor can be removed sparing the thyroid glands and other parathyroid glands. Postoperative care: As a result of functional parathyroid tumors secreting causing hypercalcemia, the other remaining parathyroid glands decrease production of PTH. After surgical removal of the parathyroid tumor, the other parathyroid glands will need time to begin producing adequate levels of PTH necessary to regulate the blood calcium level. In order to minimize the possibility of postoperative hypocalcemia (low blood calcium), the pet will begin immediate oral vitamin D and oral calcium supplementation. The pet's blood calcium will be monitored closely after surgery as severe hypocalcemia can be fatal. As the calcium level normalizes, the pet will be gradually tapered off of supplementation. The pet will be monitored for hypocalcemia during hospitalization, as well as discharge instruction for monitoring for signs of hypocalcemia at home. Signs of hypocalcemia may include: • Vomiting

	• Muscle ache or twitching • Facial prurits (itchiness) • Seizures Prognosis: The prognosis for parathyroid tumor removal is typically very good as these tumors are most commonly benign.