

Ultrasonography of the Feline Parathyroid Glands

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In the Literature

Woods SJ, Palm C, Sheley M, Feldman EC, Pollard RE. Ultrasonography does not consistently detect parathyroid glands in healthy cats. *Vet Radiol Ultrasound*. 2018;59(6):737-743.

FROM THE PAGE ...

Ultrasonography is a valuable, noninvasive tool for evaluating the parathyroid gland in dogs, but very little information on the evaluation of parathyroid glands in cats is available. This study sought to ultrasonographically characterize the size, location, and appearance of parathyroid glands in cat cadavers and compared the results with histologic findings. The study also sought to ultrasonographically assess the thyroid lobes in living healthy cats that did not have clinically detectable kidney, parathyroid, or thyroid disease. The authors hypothesized that ultrasonography would detect 2 parathyroid glands in each thyroid lobe (ie, 4 total), with the glands appearing as hypoechoic nodules associated with the thyroid lobes. In addition, the authors hypothesized that a reference range for parathyroid gland size would be determined for healthy normocalcemic cats.

In the 6 cat cadavers, ultrasonography revealed 28 hypoechoic nodules in 12 thyroid lobes. On histology, 33 separate nodules were observed in the 12 thyroid lobes; 25 of these were characterized as parathyroid tissue and the remaining were characterized as being of thyroid origin. Of the 28 nodules identified on ultrasonography, only 6 could be confidently associated with nodules seen on histology.

In the 20 living healthy cats, thyroid glands were identified via ultrasonography in all cats, with only the right thyroid lobe not being evaluated in one cat due to poor compliance. This study demonstrated obtaining parathyroid gland measurements in non-sedated cats to be difficult, as generally only one measurement could be reliably obtained

in each cat. Hypoechoic nodules frequently did not correspond to parathyroid tissue on ultrasonography, proving ultrasonography was not a reliable method for evaluating parathyroid tissue in healthy cats; this is important to note, as any hypoechoic nodule in thyroid glands is generally considered to be parathyroid tissue. Because ultrasonography could not differentiate normal parathyroid glands from thyroid tissue, no reference ranges were provided.

Although this study demonstrated normal parathyroid tissue to be ultrasonographically similar to thyroid tissue, evaluating the ultrasonographic appearance of the parathyroid glands in cats with suspected parathyroid disease and validating thyroid gland size in cats with known hyperthyroidism is necessary to determine the clinical applicability of ultrasonography when evaluating the thyroid and parathyroid glands in cats.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Obtaining parathyroid gland measurements in clinically normal cats through ultrasonography can be difficult without sedation.
- 2** Although this study found no benefit in performing ultrasonography to evaluate the parathyroid glands in normal cats, performing ultrasonography on parathyroid glands in cats with hypercalcemia may be beneficial.
- 3** Further studies on hypercalcemic cats may find that abnormal parathyroid tissue is easier to differentiate from thyroid tissue, but in normal cats, the parathyroid glands are not reliably visible.