



ASSESSMENT OF THE 1,2-O-DILAURYL-RAC-GLYCERO GLUTARIC ACID-(6'-METHYL-RESORUFIN) ESTER (DGGR) LIPASE ASSAY FOR THE DIAGNOSTIC EFFICACY OF CONCURRENT PANCREATITIS IN CATS WITH HEART DISEASE.



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Summary

Diagnosis of pancreatitis in cats with heart disease solely based on the results of the DGGR lipase assay should be done with caution. There are as well false positive as false negative results. The diagnosis of pancreatitis should always be confirmed by the presence of clinical signs and abnormal findings on abdominal imaging.

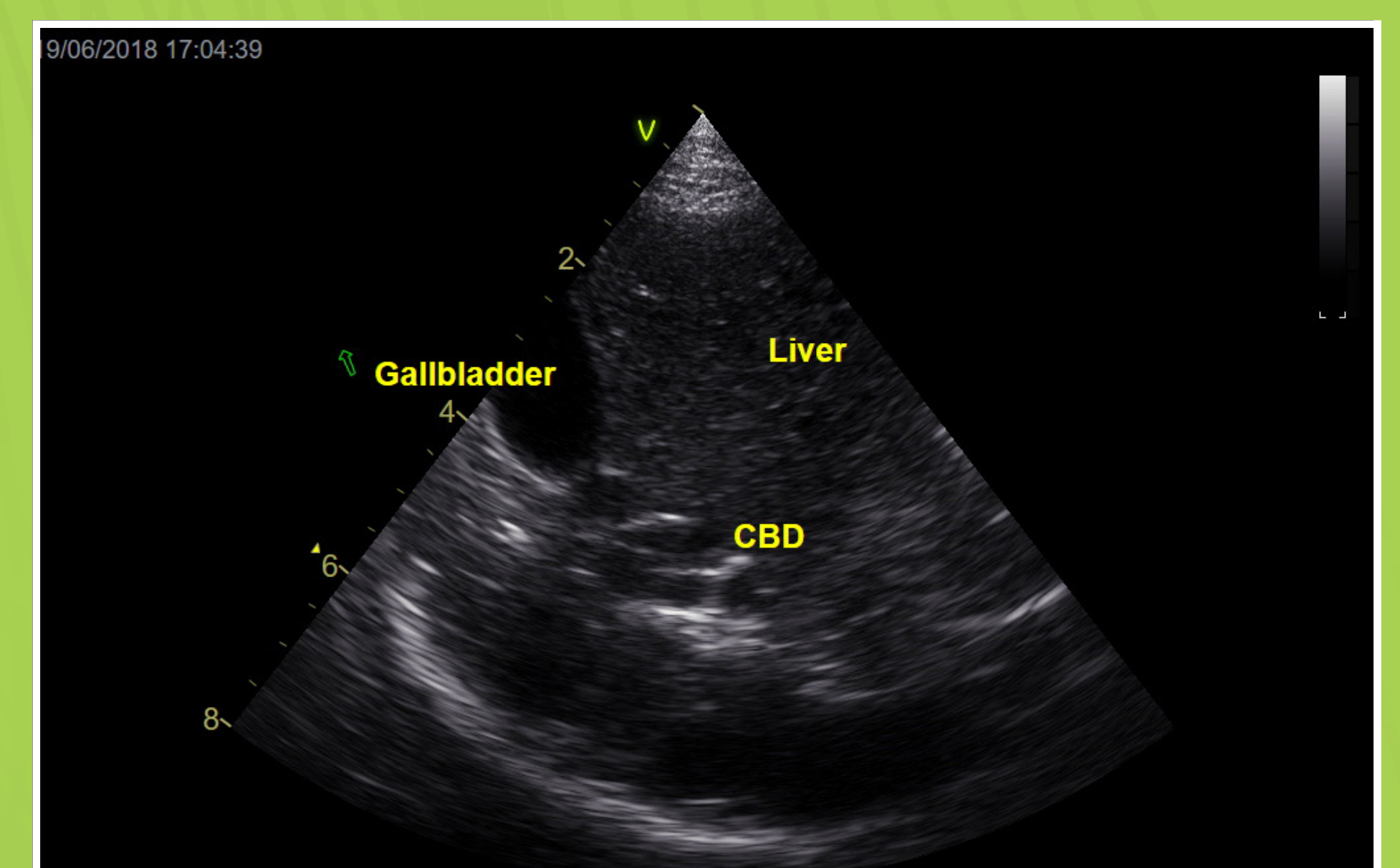
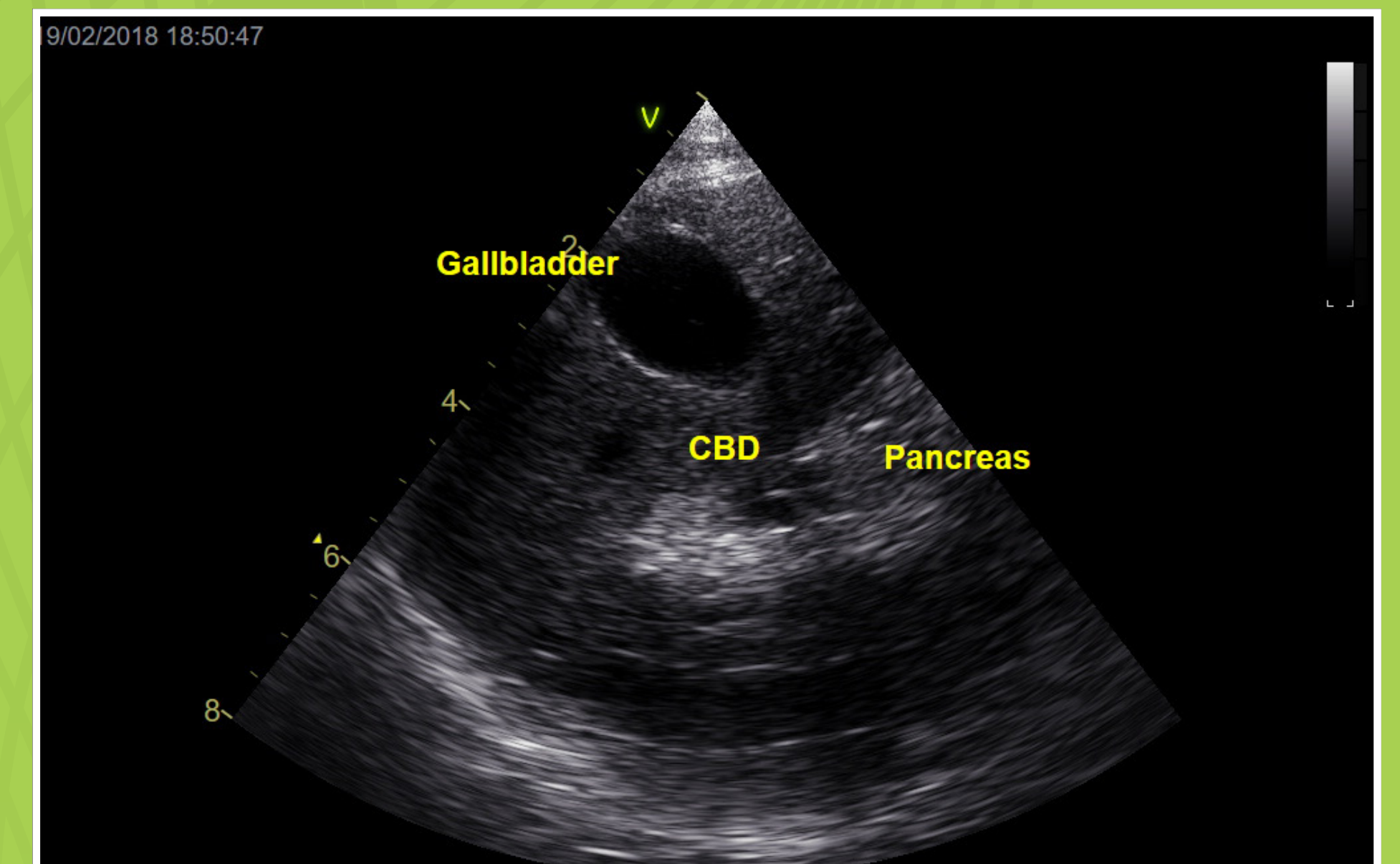
Introduction

Pancreatitis is a common disorder of the exocrine pancreas in cats which can vary widely in presentation. Clinical signs are often non-specific, making a definitive diagnosis challenging.¹

The most commonly used diagnostic method is measurement of circulating markers of pancreatic inflammation in the blood like fTLI, fPLI, serum Spec fPL™ and lipase.^{1,2,3} fTLI, fPLI and serum Spec fPL™ are time-consuming and/or expensive and most of the 'old' lipase assays that were in use had poor sensitivities and specificities.¹

More recently, the DGGR lipase assay has been developed and it has been established as a reliable screening test for pancreatitis in the general feline population.³ Additionally agreement between pancreatic ultrasonography and lipase assay results is known to be only fair.^{3,4}

In our practice, we routinely perform blood work in cats with cardiac diseases (with and without congestive heart failure). Our laboratory includes the lipase DGGR assay in their standard profile and so it was noticed that the DGGR lipase levels were often elevated in cats (and dogs)⁵ with no clinical signs of pancreatitis nor abnormal findings on pancreatic imaging. The objective of this study was therefore to assess the sensitivity and specificity of this test for the diagnosis of concurrent pancreatitis in cats with heart disease.



Material and methods

Medical records of cats with heart disease and with serum lipase measured using the DGGR assay were retrospectively evaluated. Serum lipase levels above 26 U/L were considered indicative of pancreatitis according to the reference values provided by the referral lab (Synlab Belgium). The diagnosis of pancreatitis was confirmed or ruled out by the presence or absence of clinical signs that could be attributed to pancreatitis and by abnormal findings on pancreatic ultrasonography.

Results

Of 19 cats with heart disease, 4 cats showed elevated serum lipase activity (mean: 52 U/L (35 - 79 U/L)). In none of these 4 cats the diagnosis of pancreatitis could be confirmed by the presence of clinical signs nor by typical findings on pancreatic imaging. Two cats with heart disease were diagnosed with concurrent pancreatitis based on the presence of clinical signs and findings on pancreatic imaging. Both cats tested negative for pancreatitis using the DGGR lipase assay. Based on these results, the sensitivity of the DGGR lipase assay in diagnosing pancreatitis in these cats was 0% while the specificity was 76.5%. The Positive Predictive Value (PPV) and Negative Predictive Value (NPV) of the test were respectively 0% and 86.7%.

Discussion

Serum lipase activity measured by the DGGR lipase assay should be interpreted with caution in cats with heart disease as false positive and false negative test results may occur. The false positives can probably be attributed to the pancreas' sensitivity to focal or general hypotension and/or hypoperfusion which is often present with heart disease. The false negatives might indicate the presence of only very mild disease.

Conclusion

Diagnosis of pancreatitis in cats with heart disease should be confirmed by the presence of clinical signs and abnormal findings on abdominal imaging. These preliminary findings need of course to be confirmed in a larger scale study.

		Gold standard test			
		positive	negative		
DGGR Lipase test	positive	0	4	0%	Positive Predictive Value (PPV)
	negative	2	13	86,7%	Negative Predictive Value (NPV)
		0%	76,5%		
		Sensitivity	Specificity		

References:

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