Title:
Blockin' Clots: Prevention and Treatment of Thromboembolic Disease

Session Description:
Recent studies have identified several diseases associated with the risk of developing thromboembolic disease. While the treatment of active clots can be challenging, their prevention may be a more attainable goal. The objectives of this session are to discuss diseases associated with the risk of thrombosis, identification of thromboembolic disease and how to minimize the risk of these event from occurring.

Lecture Notes:
Thromboembolic disease can have devastating effects in our patients. Recognition of risk factors for developing thromboembolic disease may help prevent their occurrence. Virchow's triad describes three contributing factors for the development of thrombosis. Theoretically, two of three categories are necessary to form a blood clot. These include hypercoagulability, stasis of blood and endothelial damage. While stasis of blood and endothelial damage are difficult to identify and/or quantify in many cases, hypercoagulability can be identified with such blood tests as thromboelastography (TEG) and thromboelastometry (TEM). Diseases that have been identified to be associated with hypercoagulability based on TEG tracings include immune-mediated hemolytic anemia, immune-mediated thrombocytopenia (rebound phase), protein-losing nephropathy (PLN), protein-losing enteropathy (PLE), sepsis, liver/gall bladder disease and lymphoma. While thromboprophylaxis has not been identified to improve outcomes in the aforementioned diseases, clinicians typically employ their experience to determine which patients to treat with blood thinners. There are newer, safer blood thinners available which allow us to be a bit more aggressive with thromboprophylaxis. For example, low molecular weight heparins (e.g. Fragmin, Lovenox) require less monitoring that unfractionated heparin. The main downside is cost. This class of blood thinners may be of benefit for preventing clot formation in low-pressure vessels such as the venous system. Whereas platelet inhibitors (e.g. clopidogrel, aspirin, etc.) may be of benefit in the arterial vasculature (i.e. high-pressure vessels). Clopidogrel has been shown to reliably and repeatedly inhibit platelet function in both dogs and cats at standard doses (2-4mg/kg PO q24 [dog] 18.75mg PO q24 [cat]). However, aspirin, a TXA2 platelet receptor antagonist, is much less reliable and its efficacy in reducing the risk of thromboembolic disease in both dogs and cats in questionable. The length of time patients require thrombophylaxis is based on the underlying disease, the presence of thromboembolic disease and response to treatment. For many diseases, such as cardiomyopathy in cats and PLN in dogs, treatment can be life-long.

References