



Feline Aortic Thromboembolism (FATE)



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Feline Aortic Thromboembolism (FATE) is a dramatic and painful condition of cats in which a large blood clot (thrombus – typically formed in the left atrium) has traveled and lodged itself (as an embolus) in an inappropriate location that cuts off the blood supply to parts of the body. It comes on suddenly and appears to paralyze the cat, causing one or both rear legs to become useless and even noticeable cold.

FATE is a fairly common and potentially devastating complication of heart disease in cats. While the major cause of FATE is due to cardiomyopathy, it has also been associated with other causes, such as neoplasia, thyroid disease or endocrine disease. The most common site for embolization is to the iliac arteries (branches from the aorta to supply blood flow to the back legs). This is often referred to as “**saddle thrombus**”. Other locations include the brachial arteries (supply blood to the front legs), renal arteries (supply blood to the kidneys), and cerebral arteries (supply blood to the brain).

Clinical Signs

Clinical signs of FATE develop acutely, and with a distressing presentation in which cats can be hyperventilating, crying out in pain, and are suddenly unable to use their hind legs appropriately. FATE usually strikes without warning. Pet parents typically are unaware of any prior problems and due to these sudden and extreme signs, normally will take their cats to the ER assuming their beloved feline endured an unknown trauma.

Affected cats typically vocalize loudly, are weak/uncoordinated or even paralyzed in the affected limbs, develop open mouth breathing/panting, and are restless. The limbs may feel cool and the footpads and nails beds are blue. A low rectal temperature is also common when the hind limbs are affected.

Mixed breed cats are commonly affected, and males are nearly twice as likely to be diagnosed as females. The age range of affected cats is reported as 1-20 years of age, but the mean age is 8. In purebred cats: Abyssinians, Maine Coons, Ragdolls, Norwegian Forest Cats, Sphynx, and Birman are over-represented in FATE cases. If you are contemplating adding a purebred cat to your family, only consider purchasing from a reputable breeder who scan their cats for HCM (Hypertrophic Cardiomyopathy).

Why Does FATE Happen?

As mentioned above, FATE is most commonly a secondary complication of feline heart disease. Cats with heart disease (such as HCM) often have an enlarged chamber of the heart (specifically the left atrium) that promotes stagnant or turbulent blood flow that activates the clotting process and promote clot formation. Once a blood clot has formed, fragments can migrate from the heart into vessels that supply the front legs and into the aorta (largest artery in the body that runs down the length of the back and splits into arteries to supply the legs).

It is worthwhile to note that FATE can occur in cats that do not have preexisting heart disease. In fact, it is estimated that in more than 70% of cats with FATE, it serves as the first sign of heart disease. It is also important to keep in mind that not all cats with heart disease will develop abnormal clots. It is theorized that changes in platelet function and coagulation can also play a role in the pathogenesis of FATE.

Diagnosis

As a starting point, your veterinarian will perform a complete physical exam which can be highly informative and useful to diagnose this condition. Definitive diagnosis involves documenting arterial occlusion and determining the underlying cause, and will include the following:

- Blood flow evaluation (via Doppler ultrasound imaging or blood glucose testing)
- Coagulation profile
- Laboratory testing – CBC and Serum biochemistry analysis (evaluating electrolyte levels, acid/base status and renal function)
- Urinalysis
- Thyroid testing
- Radiography (chest x-rays to look for congestive heart failure)
- Echocardiography (to confirm and characterize the presence of heart disease)
- Ultrasound of the heart (to definitively diagnose any underlying cardiac disease and identify the presence of more clots in the heart)

Treatment

FATE is a frustrating disease for all involved, and treatment is directed at managing the underlying heart disease, increasing blood flow to the affected limb(s), pain management, and preventing further clot formation.

Hospitalization is always recommended for the first 48 hours to monitor complications including life threatening electrolyte disturbances (secondary to reperfusion), arrhythmias (abnormal heart rhythms), or acute renal failure.

The most critical therapy is pain control in the acute stage. The second most critical therapies aim to prevent further clot formation and to help break-down existing clots. In cats that have concurrent heart failure, diuretics should be administered, and they should be kept in an oxygen cage. In cats that do not have congestive heart failure, fluid therapy may be needed, especially if the cat is dehydrated.

It is important to note that aggressive thrombolytic therapy and surgical removal of the clot are NOT usually recommended given that cats with severe heart disease are often poor candidates for anesthesia and the effects of spontaneous reperfusion (the act of restoring the flow of blood to an organ or tissue) can sometimes be disastrous.

Prognosis

The prognosis for cats with FATE remains guarded to poor. Sadly, most cats die or are euthanized as a result of the disease. A better prognosis is often given if only one limb is affected, especially the front limb, and if motor function is present in the affected limb. Approximately 50% of treated cats typically survive to be discharge from

the hospital. The prognosis is worse if the cat is hypothermic or if there are two or more limbs affected. If there is evidence of renal failure, the prognosis is grave and euthanasia is strongly recommended.

Median survival time for cats surviving 7 days after presentation is about 3 months; however, about 20% of these cats can have one-year survival times. It is important to note that all of these cats that survive in the initial week ultimately died or were euthanized because of cardiac diseases or additional FATE episodes.

Prevention

Preventing FATE is NOT easy. Genetic history can help but the best way to prevent FATE is to make sure you have your cat regularly checked (at least yearly) by your veterinarian. This will ensure your veterinarian notices any developing conditions (such as heart disease) before they cause a clot.

No strong recommendations exist for one particular prophylactic strategy. Several drugs (such as Warfarin, Heparin, Aspirin, Thienopyridines) have been used to inhibit the coagulation cascades or platelets. These drugs have been used as single agents and in combination under strict veterinarian's orders and supervision as the side effects of those medications can be serious.

On a closing note, **FATE** is extremely painful and is a serious **MEDICAL EMERGENCY** in cats. If you suspect that your cat is showing signs of FATE, **[get to your veterinarian or a veterinary emergency clinic IMMEDIATELY!](#)**

EndFIP® has a vision: every cat a healthy cat. This vision expands beyond the boundaries of FIP. Our focus is to educate, inform and inspire people to create lasting solution to prevent cats from becoming infected with feline coronavirus, thus preventing FIP altogether. We also like to provide information about other issues affecting cats worldwide. We hope that by sharing this non-FIP related information, we can help pet parents to be more aware of this devastating condition with such an ominous acronym as FATE.

