A Comprehensive guide on Heart Murmurs in Cats

We are genuinely sorry a heart murmur (or other cardiac abnormality) has been heard in your pet cat, a special family member. We understand this can be upsetting and raise all sorts of uncertainties and concerns. We hope this document will help in providing some understanding, enable you to make an informed decision about how to approach this discovery and help you take a next step to obtaining more information and if necessary providing treatment, if you wish to do so.

General Statement
A heart murmur is an audible sound heard with a stethoscope during a clinical examination, indicating abnormal turbulent blood flow through the heart. This alerts the clinician to the presence of a change from a previously normal heart to one where some degree of disease is now present. A murmur is an additional, variably loud whooshing sound usually heard between the two clearly separate heart sounds (‘lub’- ‘dup’) in the healthy heart, which occur at the time of valve closure.

It is true that some heart murmurs are more significant than others; some being quite innocent and having no effect on quality of life or longevity. Others however, are more serious and their cause needs treatment as soon as possible to reduce the possible impact on quality of life and longevity.

Types of heart murmur and their various outcomes
A heart murmur indicates heart disease is present, perhaps a leaking or narrowed heart valve. This may have been present since birth (congenital) such as a young kitten with a ‘hole-in-the-heart’, or acquired at some point since birth, for example in a middle aged domestic short hair (DSH) or a pedigree cat, where in either type of cat, the heart muscle becomes greatly thickened, leading to heart failure (Hypertrophic Cardiomyopathy -HCM). Rarely congenital murmurs can and need to be corrected by surgery, whilst some don’t need any treatment at all; other congenital murmurs can be helped by simple medication such as a beta-blocker (to slow and relax the heart). Similarly, some acquired heart murmurs don’t ever affect your cat, whilst others are already affecting them with exercise intolerance (becoming more sedentary), faster breathing etc. Since most of the acquired murmurs are due to a disease process that has developed, the background cause and the murmur itself are expected to worsen as your cat gets older; however, some cats don’t require treatment yet, but may do so in future months or years, which is why monitoring a heart murmur is recommended. Congestive Heart Failure (CHF) is a treatable syndrome accompanying any form of heart disease where the cat’s own natural powers of compensation have been overwhelmed and they are now outwardly affected by sedentary lifestyle and faster breathing; most cats respond well to treatment and live far longer than they might have done had treatment not been available. In cats, coughing is usually a sign of lower airway disease and also needs assessing, usually with a chest x-ray. All but the most innocent heart murmurs may lead to development of CHF. Sadly, not all cats with heart disease and especially (HCM) have heart murmurs and these cats are indistinguishable from a normal cat at the time of checking with a stethoscope. Some of these present in heart failure and can be difficult to rescue from their signs of CHF. Therefore, even a quiet heart murmur that would seem innocent enough, should be investigated to rule-out the possibility of HCM, especially if any related cat has been affected, for this is known to have a familial basis in some instances.

Heart murmurs heard in kittens
From time to time, a heart murmur is heard in a kitten at either pre-vaccination checks or during the two vaccination appointments themselves. While some of these are clearly abnormal and loud, perhaps accompanied by clinical signs (breathing issues, reduced activity etc), the majority of these murmurs are quiet, indefinite in location and the kitten is as active as any other and outwardly gives no cause for concern. Where the murmur is clearly abnormal or you are otherwise concerned, a consultation with myself (Mark Oakley at our Yateley surgery) is encouraged. Where the murmur is quiet and causes less concern, it may be found that the murmur is even quieter (or even inaudible) at the second vaccination or at a later consultation such as the potential six months old, pre-neutering check. If the murmur is still present at either of these check-ups (in particular at six months of age) further assessment initially via consultation with myself, is strongly encouraged. It is said that kittens may ‘grow-out’ of their murmurs, however I would feel this is an unreliable semi-truth on which to rely and a more specialist view should be sought at the beginning of a cat’s life, should any sort of murmur be present and persist. It may be concluded following further auscultation with a stethoscope with myself or via tests (should they be necessary) that these murmurs are pronounced ‘innocent’, but until that stage is reached, I could not presume their innocence.
Monitoring heart murmurs
At its simplest, monitoring may be in the form of regular or occasional assessment with a stethoscope during a booster vaccination for instance, whilst obtaining a history concerning breathing and activity levels indoors and outdoors. Without having initially assessed the significance of a particular murmur with tests, the frequency of such monitoring in some cases might not be enough, leading to the development of CHF between visits. I recommend a more pro-active monitoring in the form of a chest X-ray and relevant blood tests (kidneys and pro-BNP) at no greater than six monthly intervals, preferably having had a more complete cardiac assessment shortly after the heart murmur was first recognised. The purpose of a more pro-active monitoring is to pre-empt the development of CHF and provide your cat with timely treatment to keep him/her out of heart failure and continue to lead a normal life. If your cat had adopted a sedentary lifestyle due to the presence of heart disease that led to a heart murmur, this can be expected to improve and normal activity levels are often resumed.

Investigation
The exact significance of a murmur at any one time, cannot be simply assessed by the use of a stethoscope unfortunately and even cardiologists require data from tests and investigations to be able to accurately state the present facts/implications and pass these on to the cat’s owner and the referring vet where applicable. Information from a clinical examination and taking of a history from the owner to provide details of activity levels, presence/absence of breathing changes are all helpful in pointing a vet towards the significance of a murmur. Tests such as chest X-rays, heart scans, ECG (for electrical rhythm) and some blood tests are all available and can be undertaken by the primary vet or often referred-on to a cardiology-equipped vet, depending on what is deemed necessary and desired by both owner and vet. The results of these tests, fine-tune the understanding and enable an optimal treatment and monitoring package to be made available and provide you with the maximum reassurance and your cat with the best possible quality of life and longevity.

Heart Screening
In some circumstances, a screening approach to heart disease, specifically on the lookout for HCM, can be provided. This may take the form of an echocardiographic (heart scan) assessment of the heart and correlation with kidney function and pro-BNP levels. This is sometimes carried-out in cats without heart murmurs as a precaution.

What tests may involve
We recommend that owners are made aware, that specialist investigation is available to you within our group via myself (Mark R Oakley BSc, BVM&S, CertSAC, MRCVS) at our Yateley branch, should you wish. Understanding the cause of a murmur, providing you with reassurance as soon as possible and your cat with the treatment that may be needed, is my passion. These tests are usually carried-out on Mondays and Fridays at our Yateley branch assisted by my cardiology nurse, Tracy.

Any tests carried-out, are nearly always done so in a single day and you will be fully informed of the diagnosis and any treatment, that same day. In order for a heart scan (echocardiography) to happen, a small amount of fur is shaved from the skin either side of the heart in most cats. These areas are gelled-up with ultrasonic gel to enable a good quality picture to be obtained, any remaining gel can be brushed out of the coat once dry. Occasionally, a cat will require a low dose sedative to ensure cooperation and enable the heart scan to be as efficient and quick as possible. In order to acquire a chest X-ray, we invariably give our cats a low dose injectable short-acting anaesthetic to enable an X-ray to be taken; the dose given is so low that it would be insufficient for any type of surgery and they usually wake up from this within 2-4 minutes. All the other tests including the heart scan are nearly always done fully conscious. We recommend your cat is allowed access to water, but is not fed on the morning of the tests to give us more flexibility and allow us to take uncompromised blood samples, should they be needed. Any medication required should be given as usual in the morning with unrestricted access to water, if needed with the smallest amount of food necessary. We will offer food at lunchtime after the tests have been carried-out, prior to collection time, usually taking the form of a half hour consultation in mid to late afternoon.

I will usually recommend a full cardiac work-up to be carried-out initially (Blood Pressure, an ECG, relevant blood tests, an echocardiogram (ultrasound scan) and then a chest X-ray). Thereafter at three to six monthly monitoring opportunities, a selected smaller group of tests (often a heart scan +/- chest X-ray with relevant blood tests) is offered to maintain understanding of the progression of the condition and apply appropriate treatment changes or other advice; other heart tests are repeated, only where indicated.

Blood tests sometimes involves finding out about your cat’s overall health and includes haematology and various biochemistries of general organ function. At other times tests are restricted to the on-going performance of the kidneys which are responsible for clearing medications from the body and we need to keep an eye on this aspect of
health. Various hormones are considered, including the thyroid in older cats particularly and more often a cardiac hormone called pro-BNP. Finally, a smaller number of specialised blood tests relevant to the heart are available, for instance heart muscle enzyme tests and breed specific genetic tests (eg Maine Coon cats).

Further thoughts about initial Investigations and ongoing Monitoring
My rationale for these, is two-fold.

Firstly, where your cat already has or may have clinical signs of congestive heart failure (CHF), treatment to control this and return him/her to ‘normal’ quality of life is of first priority. Thereafter, the aim is the same as for those cats that come to the vet without signs of CHF and that is to maintain them in a state of, as near-normal cardio-respiratory physiology as possible and hopefully for them not to experience CHF in the future.

Secondly, cats with a heart murmur but not yet in CHF, though possibly expected to be affected by CHF in the future, are monitored so that we can recommend when to start treatment before they go into CHF, ie to pre-empt CHF, rather than have them on treatment for years before they need it, or be unlucky and have to start treatment suddenly for CHF even though they have been previously monitored. To this end, you can greatly assist us by counting your pet’s resting respiratory rate and keeping us informed of your recordings. This definitely helps me in the fine-tuning of treatment requirement and owners generally enjoy the ‘teamwork’. We can provide you with an explanatory information sheet and when resting breathing rates are normal (twenty per minute) this is reassuring for both yourself and us. When they start to become consistently faster you can be assured of our support when you inform me and I can advise how medication may be adjusted or if necessary recommend you bring your cat in to see myself or your regular vet.

Treatment
Treatment is intended to be indefinite and usually takes the form of tablets given with or without food once or twice daily and some of these can be replaced by liquid forms of medication where necessary. There are a few cats for whom tabletting is very difficult and perhaps impossible. Invariably, we can get by with these tricky ones with liquid medication, which is of small volume and quite feasible. However, if it is truly impossible to medicate your cat, we understand it may not be appropriate to carry-out tests at all, depending on your wishes. Usually, treatment is started on a conservative basis (two to three different medications) and thereafter any adjustments to dose and scope of available drugs will be advised by myself and/or colleagues. For instance, later on, a more comprehensive range of medication may become necessary (typically four or five different medications in total). Later still, if CHF signs should return in spite of treatment (recalling that cardiac disease is progressive and not ‘curable’ as such), the main two medication dosages may need to be doubled to regain lost ground and return your cat to as near normal quality of life once more. Further still, if signs begin to creep back, empirical increases in appropriate medications will be prescribed to maintain the advantage and keep your pet enjoying life, but at this stage our abilities start to become limited by a cat’s tolerance of the medication itself and being medicated by a large number of pills several times each day.

Longevity
Unfortunately longevity cannot be predicted with accuracy, even after tests, because of the variable ability of the patient to respond to their medication. However, affected cats do generally live a great deal longer than they used to, due to the development of really helpful medication to control signs of CHF. It is fair to say, that in the past (pre 1990’s), parting with a pet would often be quite soon after recognition of CHF, but nowadays due to the modern medicines available, their lives can be extended for many months or even several years in some cases. Where a heart murmur is not already accompanied by CHF, even longer longevity is expected. Eventually however, in spite of our best efforts and our best intentions guided by your expectations and wishes, we will have to anticipate your cat passing away either naturally, or it becoming clear to both yourself and us that he/she may need to be put to sleep. We will do our best to assist you with such decisions and also with support after your pet has passed away.

If insurance is of the annual policy type (our Receptionists can assist in this understanding) it is important to appreciate that the year’s cover will most likely begin from the first date the murmur/other heart abnormality was first recorded, even if no advice to investigate further was given at the time.

To make the most of the annual policy type, investigations can be done to ascertain the status of the condition after six and then eleven months, which will help our judgement of how to proceed in the following years, even if limited/no tests are consented to.
If a client is unable to afford a full cardiac work-up, there is much to be gained by choosing selected tests only. This will maximise information enabling us to prescribe medication appropriately and optimise quality of life and longevity. We wouldn’t want the cost of the ideal full cardiac work-up to be a barrier to providing treatment where an informed choice was made from more limited information.

Concluding thoughts
In conclusion, it is my intention to provide as much information and support as may be needed from the start and along the way to remove the ‘mystery’ of what should happen next and what the future may hold. My long-term ambition has always been to maintain the loving, mutual beneficial relationship between you and your cat for as long as possible. Often, having to medicate a cat for heart disease enhances life quality and relationship, making that period of pet ownership extra special. Always having owned cats and having three currently, I understand how special they are.

I am contactable any weekday and if necessary messages can be left for me to ring you back. On Mondays and Fridays, my nurse Tracy is also available at the Yateley branch and can assist with any queries, as can the Receptionists at any time.

If reading this document leaves any obvious questions unanswered, or if any aspect of the text is unhelpful or misleading, please let me know so it can be adjusted in an appropriate way.

Mark R Oakley BSc, BVM&S, CertSAC, MRCVS (July 2010)