BSAVA BRITISH SMALL ANIMAL VETERINARY ASSOCIATION

EDITORIAL

Hip dysplasia

Looking back over almost 50 years of involvement in veterinary surgery it seems as though one of the four horses of any small animal 'apocalypse' has consistently been the condition of hip dysplasia (HD) in the dog. One of the earliest descriptions of the disease was by Dr Gerry Schnelle in 1954 (Schnelle 1954), at a time when radiography was becoming a much more readily available diagnostic tool. His description included a forecast that a lax hip causing lameness in a puppy would progress to a crippling arthritis in later years. It was under this cloud that dogs were diagnosed and, for many, the diagnosis was a death sentence. The passing of subsequent years has shown that such a prognosis is not inevitable and one cannot cease to be amazed at animals who have a catastrophic appearance of their hips on X ray but have no sign of lameness. Some may serve a successful and valuable career as active animals in the military, the police, as a guide dog or in other working environments and then retire at normal retirement age. It was in his later years that Schnelle in 1972 wrote a remarkable letter (Schnelle 1972) suggesting that his earlier forecasts were incorrect and that another look at HD was warranted - a rare admission of error!

It is in this light that periodic reviews of HD and its treatment have appeared. In recent times it is the surgical options that have been described and evaluated and are reviewed in this issue by Angus Anderson (Anderson 2011), but is this where we should be looking?

It is clear that an unstable hip which is evident in a puppy can cause clinical problems, but many dogs have lax hip joints but show no symptoms at any time; or perhaps have symptoms initially, from which they subsequently recover. Nature is a strange beast and it must be remembered that the growing animal is quite different from the adult. In the juvenile it is possible for the phenomenon of growth to become modified by the stresses and strains placed on the skeleton so that an unstable joint is rendered stable again, and this process can occur in HD. Of course this conversion to stability may not be accomplished without some consequences. These will include remodelling of the acetabulum and the femur head so that although they are more congruent they no longer retain the original almost circular configuration of what is believed to be the ideal. Changing forces within the soft tissues will also have their effect, with new bone becoming deposited at joint margins to provide a larger anchor point for the hypertrophic capsule which now has an increased role in the provision of stability. These changes are seen in the first 18 months or so of life and are often diagnosed as "arthritis". The paradox is that as these remodelling and depositional bone changes develop, the clinical picture improves. It is an interesting exercise to follow these changes beyond 18 months when it may be seen that even over years further change may be almost imperceptible, suggesting that nature is surprisingly efficient. These changes often result in lame dogs becoming functionally sound, with the success rate of conservative management - "justifiable neglect", being reported in one study as being satisfactory in up to about three out of four cases (Barr and others 1987). Whether or not these patients then go on to develop problems in later life remains controversial and a significant issue when one is trying to decide whether or not to use one of the reconstructive or salvage procedures available for the immature patient.

There is no doubt that some cases do not improve, and do require treatment, and this has led to many attempts aimed at avoiding the onset of HD by breeding controls. Across the world a number of such schemes are in evidence. Currently, most depend on identification of various radiographic changes, followed by advice to cease breeding from affected animals. This brings up the question of what is "affected" and what is "normal". Seeking hip joints which have no discernible defects would seem to be the ideal, but such hips are perfect and perfection may not be "normal". As human beings we accept that we are not perfect and possess genetic defects but that usually does not prevent us from breeding. We largely see ourselves as being "normal" but rarely describe ourselves as "perfect". Should we therefore apply such strict criteria for animals that we produce?

For success, all schemes depend on diagnosis and subsequent use of the information provided to dog breeders. Unfortunately, submission of animals by breeders to schemes is not enforceable and the use of affected animals is only prevented or limited with difficulty. Young lame dogs who become diagnosed prior to any lower scheme limit age are generally not included in most schemes. Advice provided to breeders is also varied. In the UK, advice has been based on the Breed Mean Score (BMS), with advice to select dogs for breeding who have a score lower than the BMS. However the BMS in some breeds is so high that even using dogs below the BMS still results in a significant at risk of HD. However there has been a gradual reduction in BMS indicating that this relatively crude advice is somewhat effective. It is now proposed that the Breed Median Score, which is now being calculated, should be used instead of the BMS and that should be much more effective.

For a number of reasons, such schemes have only had limited success. There are the added problems of requiring anaesthesia or sedation, together with their risks, in order to obtain the radiograph, as well as the difficulty in consistently obtaining radiographs of a sufficiently high standard in terms of positioning and film quality, notwithstanding the costs of such schemes to the breeders. The quest is afoot to try and find less invasive methods of evaluating dogs by genetic testing and these are likely to become available in a relatively short time. A simple blood sample or swab would greatly enhance the testing procedure. In the near future, as a result of the work of the BVA, AHT and the Kennel Club it will become possible to provide Estimated Breeding Values (EBVs) which should greatly improve the ability of breeders to select their stock.

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A dog is not just a pair of hips wandering in the wind, a dog is that combination of so many features which make canine ownership a pleasure. Unfortunately HD is not the only disease from which they may suffer. Control of HD by genetic intervention begs the question as to whether a quest for total eradication of disease is entirely desirable. The risk is that by overselecting for a single genetic outcome one may lose other desirable traits or indirectly encourage other genetic problems to become manifest.

At the present time it is difficult to envisage a situation where some intervention for significantly affected cases with HD will not be required. In many cases it is the older animal who requires our help. In spite of the great advances being made in medical therapeutics some cases will need surgical treatment. For many the insertion of a total or partial hip replacement is now a viable albeit expensive option. This is an exciting procedure but one should be careful to ensure that the patient has been assessed holistically. A dog with an arthritic elbow may sometimes be made functionally worse if a defective hip joint is repaired. A more serious error is to mistake a dog with subtle changes of anterior cruciate disease or a more distal limb problem and to assume it is the radiographically abnormal hip that is the cause of lameness.

For the puppy the words of Voltaire should not be forgotten: "The art of Medicine consists in amusing the patient while Nature cures the disease". Perhaps in veterinary medicine we sometimes need to substitute "owner" for "patient". Maybe in a few years the Apocalyptic horse of hip dysplasia may finally be replaced by some other hopefully less contentious condition.

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