

INHERITED DISEASES IN THE CLUMBER SPANIEL

A survey of disease incidence

By

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INTRODUCTION

Considerable attention and publicity has been given in recent years to the problems caused by genetic abnormalities in pedigree dogs. Some of these abnormalities have attained a high incidence in different breeds eg hip dysplasia, Collie eye and progressive retinal atrophy.

Once information on the frequency of a problem has become available measure may be taken to reduce or eliminate the abnormality. Many clubs, associations and individual breeders have been taking action identify and deal with the problems in their breed. Others have been less active and the Kennel Club has now written all clubs asking for details of the specific problems in their particular breed.

This article describes a survey of hereditary problems in one particular breed, Clumber Spaniels, and suggests a means of providing the information necessary for planning future breeding and purchasing programmes to reduce the incidence of hereditary problems in the future.

THE SURVEY

The first difficulty in conducting any survey by questionnaire is the design of the survey form. It was recognised that it would be impossible and very probably counter-productive to attempt to encompass all the genetic problems to which dogs in general and Clumbers in particular are subject. In addition since the bulk of the information would be coming from breeders and pet owners, rather than people with clinical training it would be necessary to be specific in our questions without being intimidating. To this end, extensive discussions with breeders, together with veterinary advice, was used to select which abnormalities should be assessed.

We eventually decided that the questionnaire should be divided into three main sections dealing with health, life-span and age at which symptoms were first seen.

The diseases were also arranged into three groups on the form. The first part dealt with eyes, covering six of the major problems found in modern dogs. The second part covered hips and other skeletal defects, such as back and limb problems. The final part of the survey contained a series of questions covering widely diverse subjects such as epilepsy and testicular retention.

The initial circulation was undertaken in two stages. The first consisted of press releases and sending the questionnaire itself to members of the Clumber Spaniel Club. Concurrent with this a letter was sent to the secretaries of overseas Clumber Spaniel Clubs asking for their help with this survey and requesting them to circulate their members.

Following a very heavy initial response we were able to produce a preliminary report of the findings after only a few months and this produced an opportunity to re-circulate the Clumber Spaniel Club membership and also to circulate members of the Working Spaniel Society.

The majority of the replies in the initial response were from people who had animals affected by hereditary disease. Only a few replies were received from people with completely healthy dogs. This is normal for a survey of this kind as it is to be expected that those who have purchased animals that have suffered from hereditary abnormalities would be more likely to respond.

In subsequent circulations it was made clear that only by receiving replies from people with healthy animals could the results be made statistically meaningful, and that a negative response was just as valuable as a reply detailing many defects in one animal.

As time went by replies started to arrive from Australia, New Zealand, the USA and Canada. Some of the more interested domestic breeders requested additional questionnaires after publication of the preliminary results so that they could send records of their dogs both past and present. After about a year from the initial circulation it was decided that no further replies would be forthcoming and the correlation of the forms began.

With the total number of replies standing a close to 200 and with many containing additional information and letters (often lengthy and quite moving in their detail and content), the time taken to correlate all the information was considerable and it has not been possible until now to produce an effective report.

RESPONSES TO SURVEY QUESTIONS

The total number of completed questionnaires returned was 185, encompassing 63 recognisable affixes. Of these 138 animals were still living.

This total included 69 dogs and 74 bitches. Owing to an initial oversight the question of sex was not put on the original circulation and hence we do not have details of the sex of 42 animals from the first questionnaire.

Table 1 shows details of the life span of the animals included in the survey. Natural causes are defined as not requiring euthanasia.

Average age of all animals in survey:	5.1 yrs
Average lifespan of animals in survey:	7.1 yrs
Average of animals dying from natural causes:	8.8 yrs
Average age of living animals:	4.4 yrs

Table 1: Average ages of animals included in the survey

In table 2 details of the problems in order of the percentage occurrence. All percentages are of the total of 185 except for birth problems and single/retained testicle where the percentage were calculated using the total number of each sex.

	Number of animals affected	Percentage of total
Birth problems (females only)	29	39.0%
Entropion	70	37.8%
Poor or loss of sight	30	16.2%
Anal gland problems	29	15.7%
Single/retained testicle (males only)	8	11.6%
Forelimb lameness	18	9.7%
Hindlimb lameness	16	8.6%
“Other” skeletal problems	16	8.6%
Back problems	15	8.1%
Dry eye	14	7.6%
Ectropion	14	7.5%
Cataracts	5	2.7%
Fading puppy syndrome (females only)	1	1.4%
Progressive Retinal atrophy	0	0
No problems yet diagnosed	42	22.7%
Hip Dyplasia	Number scored = 85	Average score = 42.7

Table 2: Animals affected by inherited disease

HIP DYSPLASIA

As the question on hip dysplasia produced a wide and varied response we were able to look at it in more detail.

There were 185 dogs in the survey and 85 responses to the question on HD (45.9%). Of these 58 animals had been X-rayed and scored. This included 12 X-rays which have been assessed under the scheme operating in North America, which provides a written assessment ranging from “Excellent” to “Severely Dysplastic”. There were 13 animals that had been X-rayed but not scored, and 14 animals which had symptoms of hip dysplasia but had not been X-rayed.

Of the 46 animals that had been scored under the BVA/KC scheme the average score was 42.96, which agreed well with the overall means given at the time of the survey for Clumber Spaniels in the BVA/KC scheme.

DISCUSSION

The results obtained from the survey show that the two most prevalent inherited problems that must be faced by responsible breeders of Clumber Spaniels are Hip Dysplasia and Entropion. In both cases around 30-40% of the breed were affected by at least one of these conditions.

Both of these abnormalities were known to be frequent in the breed. However the high levels of positive responses for poor or loss of sight, for anal gland problems and for testicular retention were not expected.

Even more surprising however are the figures concerning problems giving birth. Almost 40% of all females experience some form of problems during the course of their obstetric history. The trouble with this information is twofold. Firstly not all the female animals in the survey would have been used for breeding purposes and hence the true percentage of breeding bitches with problems may be much higher. Secondly the question was extremely broad in aspect, and as such it did not provide information about the causes of the problems encountered in this respect.

On a more positive note it is encouraging to note the relatively low incidence of such serious conditions as PRA, cataracts and epilepsy. It must be emphasised that the fact that we have not found these problems in the answers to this survey does not guarantee that they are totally absent in the breed, and the case of PRA it may in fact be included amongst the 16% with poor or loss of sight.

RESULTS BY AFFIX

It was never our intention to suggest that any breeder was producing a particular characteristic but to show the depth to which any problem was present in the breed as a whole. Indeed we had made it clear from the start that individual identities would be kept confidential. But the survey does show how the publication of results in which the animals are identified may be used by breeders to assist in the process of breeding to reduce genetic faults.

We received sufficient numbers of responses from three affixes to make comparisons, and these are shown in table 3. While accepting that the numbers are low and that the evidence given does not give statistical proof, it can be seen that animals from the three different affixes, or breeding lines, exhibit different probabilities of having a particular trait.

If the two main problems are examined more closely we see that animals from lines of affix A have a far greater tendency to entropion than either B or C. If breeders were aware that entropion was a particular problem in this line they could select their breeding stock not only on physical characteristics but on a genetic probability of reducing entropion within the offspring.

The same could be said of hip dysplasia. It will be seen that animals of Affixes A and C have a lower hip score than those of B, and indeed of the breed in general. Information such as this could be useful to breeders both in respect of a particular animal and of the lines it comes from. Animals could be selected from stock likely to produce offspring with lower hip scores than the breed average.

If this information was made available within all breeds it would be possible to work towards improving the health and genetic soundness of a breed without necessarily departing from the breeder's ideal of "type".

	Affix A	Affix B	Affix C
Total Number	12	10	7
Mean Age (yrs)	4.9	4.0	4.9
Poor/loss of sight	2	3	1
Cataract	-	-	-
PRA	-	-	-
Ectropion	-	-	-
Entropion	6 (50%)	3 (30%)	2 (30%)
Forelimb lameness	2	1	1
Hindlimb Lameness	1	2	1
Back problems	1	-	2
HD: Number scored	9	3	3
Mean score	27.6	43.7	26.0
Other limb problems	1	1	1
Single/retained testicle	-	-	1
Epilepsy	-	-	-
Anal gland problems	1	3	2
Birth problems	3	3	1
Fading Puppy syndrome	-	-	-

Table 3: Analysis of problems in 3 Affixes

CONCLUSIONS

The main conclusion to be drawn from this survey must relate to the high incidence of serious genetic abnormalities in the breed. Although this was common knowledge, even if not accepted by all, the survey has given us a numeric baseline against which efforts to eliminate these abnormalities can be measured.

Obviously we realise that progress to eliminate genetic faults must of necessity be a slow and painstaking process, particularly if the breed type and characteristics are to be maintained, and we recognise that some genetic faults may never be entirely removed. However as Robinson writes in Genetics for Dog Breeders:

“The great majority of abnormalities are rare and can occur in any breed. It is probable that they are confined to one blood line, rather than the breed as a whole. Therefore once sighted and identified they can be eliminated.”

In Clumbers the position is complicated by the fact that there was only a very limited breeding stock available at the end of the war, and as a consequence if pedigrees are traced back to this time nearly all present day Clumbers will more than likely have the same ancestry.

The next stage towards elimination of these abnormalities must be the identification of the problems in particular animals and lines.

We will now be seeking the cooperation of the Clumber breed clubs to repeat the survey this year using an improved computer data base and identifying the animals. This will give an indication of any progress made in the elimination of a particular fault and provide information of value to responsible breeders in planning their breeding programmes.

We would like to thank all those who took the time and, in many cases, considerable trouble not only to fill in the forms but also to write at some length about their sometimes heart-rending experiences with Clumbers old and new. We hope that following future surveys we will be able to report progress in the elimination of these faults in a breed we all find so endearing.

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