



Presentation at BVA Congress

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QUESTIONS OF BREEDING

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BACKGROUND

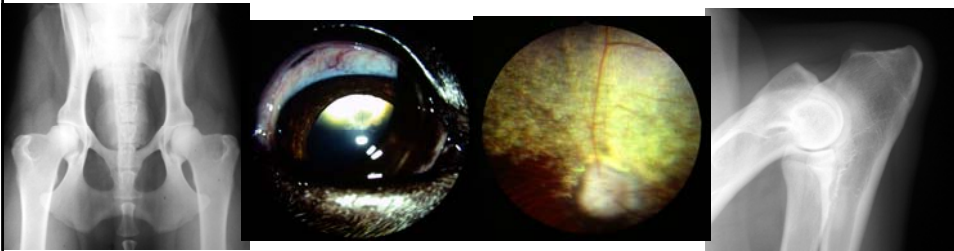
- Clinical vet working with pedigree and non-pedigree dogs
- Clinical research involving a number of inherited disease
- Member of the BVA/KC Hip and Elbow Panel
- Chair of the KC/BSAVA Scientific Committee
- Past member of CAWC
- Member of the Kennel Club
- Member of the KC Breed Health and Welfare Group

WHAT DOES THE VETERINARY PROFESSION DO FOR BREEDERS

- Service provided by local practices
- BVA/KC Canine Health Schemes
- Other schemes
- Genetic testing
- Clinical research groups

BVA/KC CANINE HEALTH SCHEMES

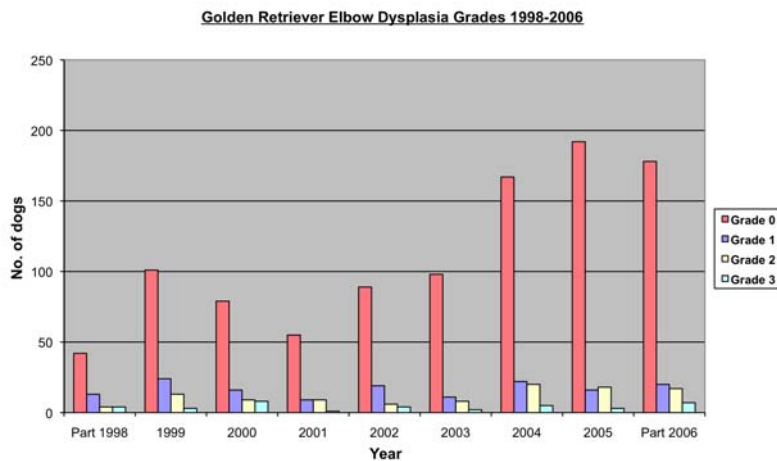
- Hip and Eye Schemes started in 1965
- Only really in the last 10 years that results have been collated and analysed
- Elbow Scheme started in 1998



BVA/KC HIP DYSPLASIA SCHEME

- Between 10-11,000 hip scores per year
- Labrador retriever biggest user (3500-4000)
- Heritability around 25%
- Analysis shows that that breeding advice works
- 50% of registered Labradors have had both parents scored
25% have one parent scored
- Rolling mean (median) show a reduction in most breeds

BVA/KC ELBOW SCHEME



GENETIC TESTING

- 30 genetic tests available in the UK
- 2002, KC/BSAVA Scientific Committee report on the role of the KC in relation to the control of hereditary disease
 - Implementation of testing
 - Quality control issues
 - Complexities of the genetics
 - Multiple genetic tests in a breed

CLINICAL RESEARCH GROUPS

- Individuals usually working closely with a Breed Club or Breed Society
- Funding is limited
- Tendency to talk up the significance of the condition and falsely raise expectations of producing a test or a cure

COPPER TOXICOSIS

- ∪ Bedlington terrier
- ∪ West Highland white terrier
- ∪ Doberman pinscher
- ∪ Skye terrier
- ∪ Dalmatian



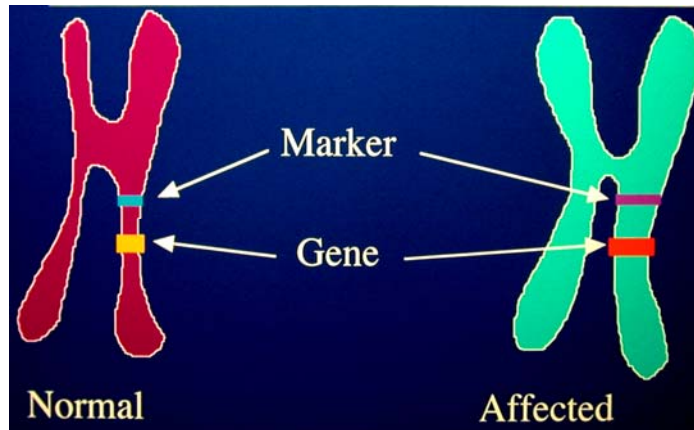
COPPER TOXICOSIS

- Inherited copper toxicosis
- Autosomal recessive disorder
- Characterised by copper accumulation in the liver
- Caused by a defect in copper excretion into the bile
- Biliary copper excretion about half that of normal dogs

MICROSATELLITE MARKER

- Developed by Yusbasiyan-Gurkan et al. (1997)
- Thought to have greater predictive value than copper measurements
- However appears to have serious limitations

DNA MARKER C04107



MICROSATELLITE VS. LIVER BIOPSY FOR COPPER TOXICOSIS

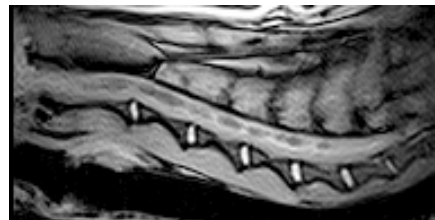
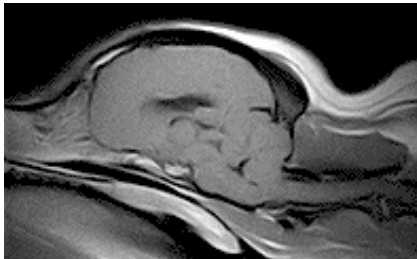
	1 - 1	1 - 2	2 - 2
Affected	1	1	11
Carrier	1	4	1
Normal	10	2	0

DISCOVERY OF THE 'GENE' CAUSING COPPER TOXICOSIS

- Bart van der Sluis et al, 2002
- Deletion of exon 2 of the copper metabolism domain 1 (COMMD1) gene (formerly MURR1)
- Thought to be the major cause of copper toxicosis

CHIARI I MALFORMATION / SYRINGOMYELIA

- Cavalier King Charles Spaniels
- Highlighted in Pedigree Dos Exposed
- Screening programme



EVALUATION OF THE COMMD1 GENE TEST

- Hyan et al., 2004
- Findings indicate that the deletion of exon 2 was not the sole cause of copper toxicosis
- Identified a family of affected Bedlington terriers with an intact exon 2
- Loss of linkage between C04107 marker and the COMMD1 gene in a certain family of dogs

SO WHAT MORE CAN BE DONE

- Data collection
- Sample collection
- Education for vets, breeders and owners
- Ready access to up to date information
- Provision of quality advice and and guidance to owners and breeders

**IT IS EASY TO CRITICISE BUT IT IS MUCH HARDER
TO DO SOMETHING CONSTRUCTIVE**

