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ABNORMAL BEHAVIOURAL PATTERNS IN DOGS WITH CLEFT PALATES

by

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Cleft lip and palate, separately or in combination, are amongst the most frequent congenital deformities found in mankind and its incidence may be as high as one birth in every seven hundred [Graber, 1969]. Furthermore, a twenty-year study indicates that the occurrence of cleft lip and palate is increasing [Fogh-Andersen, 1961].

In order to obtain information which may aid in the treatment of patients born with cleft palates, animals with similar deformities were studied. Without human assistance, new born pups are dependent on their mothers for nourishment and the maintenance of a suitable environment. Despite the fact that puppies born with cleft palates are usually large and strong it is common for the mother to actively reject them soon after birth. Those which are accepted, become progressively emaciated because they are unable to suckle on their own. These two factors account for the high mortality rate of the afflicted animals. To study the growth and development of puppies born with cleft palates, several of these animals were reared.

REARING OF PUPPIES

Many different methods for feeding new-born dogs with clefts have been described [Mayer, 1964]. We found the use of an intra-gastric tube to be the most satisfactory as it is the surest way of knowing how much food has been given and it is also the least time consuming of the methods evaluated. The puppies reported on were all fed four hourly, by means of an intra-gastric tube. Apart from feeding the animals, the human foster parents also undertook the other duties normally performed by the mother. Due to the lack of suitable animal facilities at our School, the experimental dogs had to be reared in the private homes of families who had a special interest in the problem. It was therefore not possible to rear all of the dogs in the same environment. Some of the puppies remained with the original foster parents throughout their lives, while others were reared for about six weeks before being placed in their new homes. Solid food was introduced from the fourth to the fifth week and was increased progressively to supplement and later replace tube feeding. Weaning was in most instances complete by the third month.

A common problem associated with the feeding of solid foods was the passage of small particles through the cleft into the nasal cavity. This was associated with bouts of coughing and occasionally with widespread muscular spasms which were not infrequently associated with cyanosis. While the latter severe reactions are alarming, recovery always occurred with no apparent after-effects.

To date, ten dogs of different breeds, but all achondroplastics, have been reared and studied for more than one year. This group consisted of five Bulldogs, four Boxers, and one Chihuahua.

OBSERVATIONS

Animal Number 1 — Male Boxer

This animal had two bouts of pneumonia and a further two attacks of gastro-enteritis by the age of six weeks. The first behavioural deviation in this dog was noted

at the age of eighteen months when he started guarding garden implements stored in his sleeping quarters. The implements being guarded were not always the same and any person approaching them, ran the risk of being savaged. After he had bitten an adult and attacked a child, he was destroyed.

Animal Number 2 — Female Bulldog

Whereas dog Number 1 was raised in a family with two children and one other dog, this animal grew up in an environment where there were no children but several other animals including a large dog of domineering nature. She also had several bouts of pneumonia which were treated with antibiotics. The dog now 8 years of age is extremely spoilt and has the run of the home without any restraint, but to date shows no obvious personality change.

Animal Number 3 — Female Bulldog

This puppy was raised by a family who had one young child but no animals. When twelve months old she was mated with the male Bulldog, number seven in this series. She had two pups, one was born dead and she refused to feed or care for the other. Soon after this litter was born, she attacked the child of the family and was consequently destroyed.

Animal Number 4 — Female Bulldog

This was the pup resulting from the mating of dog number seven with dog number three. She was the only dog in the series without a cleft palate, but is included because she was the offspring from cleft palate parentage and was reared in a similar manner to the other dogs. While this animal did not become as ferocious as some of the others in this study, at 10 months she started damaging and destroying a variety of possessions of her owners for no apparent reason. This tendency increased with time and reached such proportions that she had to be destroyed at the age of one year.

Animal Number 5 — Male Boxer

This dog was reared in a family with three children and several domestic animals. He is at present 9 years old and although ferocious exhibits no other apparent behavioural deviation.

Animal Number 6 — Female Boxer

The foster family consisted of two adults, two children and a cat. Although the dog grew up with this cat, she savaged and killed it after they had been living together for one year. In addition to this episode, she attacked people and was destroyed at the request of the local authorities.

Animal Number 7 — Male Bulldog

This dog grew up to be a magnificent animal which was entered in a number of dog shows and on several occasions was judged the best dog of its class. He was reared in a family with no small children but they had one other dog and a cat. He showed a tendency towards agressiveness from an early age and this characteristic became more evident when the father of the family passed away. He eventually went beserk and had to be shot by the local police. A post mortem revealed no abnormalities which could account for his behaviour.

Animal Number 8 — Male Boxer

The animal was reared on a farm where there were three children as well as domestic and other farm animals. It was decided to destroy the dog after he had killed poultry and other small animals on a neighbouring farm.

Animal Number 9 — Male Bulldog

This puppy and his sister were the only two in the litter and both had similar cleft palates. The bitch puppy was destroyed at seven weeks because of a rapid development of hydrocephalus with a concomitant physical weakening. The male was reared in a family with no children but one other dog. His early life was not uneventful as he had pneumonia on two occasions and once had a severe gastro-enteritis. He is now five years old and continues to be a most acceptable pet.

Animal Number 10 — Male Bulldog

This animal is now four years of age and although considered to be cowardly, his behaviour may be accepted as normal. The animal was reared in a home were there were children and other animals. In this household, however, the children were not young.

Summary of behaviour patterns

An analysis of the histories of the reared dogs shows that six of the ten dogs developed behavioural abnormalities characterized by aggressiveness. In five of the animals, this tendency was directed towards animals and humans while the sixth centred its aggressiveness on inanimate objects. This behavioural abnormality was so severe that all of the affected dogs had to be destroyed — a step not lightly taken with pets reared with such difficulty.

DISCUSSION

Animals which cannot fend for themselves at birth are classified as nonprecocial mammals and they have similar stages of development in common, which are: dependence on the mother for food, for maintenance of body temperatures and for providing necessary reflexive stimulation of urination and defaecation. The major factors that influence behaviour are the genotype and the environment [Dobzhansky 1961]. The hereditary effect is demonstrated by the behavioural tendency of the different breeds of dogs [Fox 1964]. Therefore some individual dogs may be more sensitive and reactive to environmental disturbances than are others. In addition, experiments with laboratory animals indicate that extraneous environmental influences in the prenatal stage can also affect the subsequent postnatal behaviour of such animals [Denenberg and Whimbey, 1963]. The precocial animals display several preformed reflexes and behavioural patterns which ensure that the young locate their mother who in turn displays innate behavioural responses which help to reinforce the mother-infant bond. Scott [1962] termed the period from 4 to 12 weeks of age, the "critical period", because his work indicated that the social experiences during this time greatly affects a dog's behaviour in later life, and helps to establish its position in the social heirarchy and in the domestic environment. If pups are taken as pets when they are very young and do not have the opportunity to develop social relationships with their own species, they may become over-attached to their owners.

A pup taken away from its mother before the "critical period" and given free run of the house, i.e., never disciplined, may become a dominant member of the "pack" which includes its human foster parents. Such dogs may turn upon their owners and also aggressively defend their home territory against strangers.

While we cannot offer a definite cause and effect relationship there are several possibilities. Firstly, the abnormal behaviour may be genetically linked with a lack of fusion of the palate. Secondly, the metabolic disturbance associated with malnutrition and infection may have played a part. Thirdly, lack of maternal contact with human dependency and in addition the over-indulgence and lack of restraint by the owners especially during the "critical period" may have played a major role in the development of the aggressive behaviour.

SUMMARY

Ten dogs, all achondroplastic breeds, which were born with cleft palates were reared with human foster parents. Methods of feeding and problems related to the rearing of dogs under artificial conditions are discussed.

The histories of the ten dogs are reported and attention drawn to the fact that six of these animals developed behavioural deviations. An attempt has been made to link the postnatal behaviour of the dogs to environmental influences. No definite cause and effect relationship is given but three possibilities are discussed.

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