The importance of emotional health in relation to physical health

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Introduction
Behavioural medicine has been slow to be accepted as part of mainstream veterinary medicine and yet the role of mental (emotional) health in humans in influencing physical health is well documented. The presence of a bilateral relationship between emotional and physical health is also relevant to non-human animals and is an important consideration in general veterinary practice.

Emotional factors
In human medicine, it has been established that any emotional disorder resulting in a stressed physiological state can be a predisposing factor for physical disease. It is also well accepted, that any physical disease state that leads to irritation and debilitation is a risk factor for alteration in emotional state, with chronic skin disease and chronic pain from orthopaedic conditions being the most frequently documented examples. One sign of chronic stress is repeated ill health and if there is a history of recurrent illness, emotional factors need to be considered. The same is true for veterinary patients and behavioural history taking can be an important component of investigating medical conditions. The interplay between emotional health and physical illness in terms of infectious disease, mucosal compromise or pain is of particular importance.

Considering differentials
When considering the potential for behavioural signs to be associated with an underlying pathology one of the most obvious areas of interest is neurology and the consideration of differentials such as epilepsy and space occupying lesions may be readily apparent, especially in cases where the behavioural presentation is severe. However, where behavioural symptoms are more subtle the temptation to rush to a behavioural diagnosis without adequate consideration of medical differentials may be increased and contributions from medical factors such as endocrine disorders, infectious diseases, immune-mediated conditions, metabolic disorders, inflammatory processes and trauma are often overlooked. Behavioural changes have been recognised as one of the most appropriate parameters for the assessment of pain in dogs and yet the role of pain as a significant factor in the initiation and maintenance of behavioural problems is often underestimated.

In cases where behavioural symptoms are sudden in onset, show an unexpected form of progression or a poor response to conventionally accepted forms of behavioural modification, the potential for an underlying medical reason for the behavioural change should not be ignored.
History taking
One of the keys to uncovering a link between medical conditions and behavioural signs is the taking of a chronological history. The interplay between disease and behaviour is most likely to be apparent when the effect is immediate and the display of behavioural signs coincides with the presence of physical symptoms. However, the relationship between the two is not always so clear cut and there are a number of ways in which medical conditions and behavioural presentations may be connected.

Developmental links
In some cases the link is developmental and information about the medical history of the patient in the early weeks or months of life may hold the key to understanding their behaviour in adulthood. Severe illness in the first few weeks of life can have serious implications in terms of behavioural development and puppies or kittens that are ill may be isolated from adequate socialisation and habituation. In addition, they may develop negative associations with certain forms of handling due to the necessity for medication and nursing intervention. The link between development and disease is also a two-way street with adequate and appropriate early learning being essential for successful development of stress control mechanisms. In situations where this development is compromised there is evidence that the resulting difficulties in dealing with environmental and social stressors may predispose individuals to a range of medical conditions. This concept is well established in the field of human medicine and yet it is only recently that the connection has been studied in the context of veterinary medicine and the effects of early behavioural development have been seriously considered in medical cases.

Looking for the less obvious connections
In contrast to consideration of developmental factors it may be thought that an immediate link between concurrent illness and behavioural responses would be difficult to miss, and examples such as the dog with a broken limb that bites someone who attempts to manipulate it, certainly support this point of view. However, the situation is not always so clear cut and links between endocrine disorders and changing emotional states or between hypertension and behavioural expression may be slightly more complex to investigate. In addition, unexpected behavioural responses may unwittingly mask the link and non aggressive responses to pain are a good example of this. Pain which leads to limitations of mobility may result in seemingly unconnected issues such as indoor toileting or worsening sound phobia, while chronic pain can lead to anxiety related behaviours, avoidance strategies, a decrease in play and changes in social interaction. In cases where individuals develop behavioural coping strategies in order to deal with the pain it is also possible for these responses to become ritualised and even compulsive in nature and links between behaviours such as circling or shadow staring and an underlying painful medical condition can easily be overlooked.

The importance of learning
In addition to developmental and immediate connections between behavioural presentations and physical disease there is also the possibility of learned connections, and
the potential for learned associations makes chronological history taking essential in behavioural cases. During the association process it is certainly possible that a link between physical and mental factors may be relatively obvious but due to the process of generalisation and the concept of self protection this link can become increasingly well disguised with time.

The influence of emotional health on clinical decision making
There are numerous examples of when emotional health of the patient needs to be considered in the context of making clinical decisions. Examples might include the following.

Bitches suffering from false pregnancy
There is a need to consider the underlying emotional motivation of care in these cases and the potentially damaging emotional effect of removing toys in terms of leading to increased frustration of the care system. The influence of prolactin on anxiety also needs to taken into account when deciding on the timing of surgical neutering in relation to false pregnancy.

Castration of male dogs
It is important to consider the emotional state of the dog and level of emotional maturity before making a decision about the optimal age for surgical neutering. Blanket practice policies of neutering male dogs at a certain age, such as six months, are outdated and decisions about the right time for castration should be made on a case-by-case basis. In addition when owners request castration as a potential solution to behavioural issues with their pet it is vital to consider the underlying emotional state for the unwanted behaviour before proceeding with surgery. Castration will only deal with the hormonal motivation for a behaviour and can affect the level of emotional stability in the individual. For these reasons an accurate diagnosis of the cause of the behavioural signs is a priority before a decision about neutering can be made.

Treatment of cancer patients
In the field of oncology there are a number of ways in which the emotional health of the patient need to be considered. Firstly, there is the potential for the disease to lead to emotional change in the animal and pain is a very important consideration in this context. Secondly, emotional health needs to be considered within the context of the treatment protocol, both in terms of potentially radical surgery and in terms of chemotherapy and radiotherapy. Finally, the potential side effects associated with some of the therapeutic protocols used in oncology may have emotional consequences for the patient.

Administration of pre-medication or sedation to fearful and anxious patients
There are two contexts in which consideration of protocols for pre-medication and sedation are important, particularly when dealing with fearful or anxious patients. Firstly, there is the consideration of the emotional impact of the veterinary experience on the patient and secondly, the consideration of safety for both staff and owner. One important consideration is the ability to administer the medication in one syringe in order to remove the need for multiple injections.
Combination premedication regimes which have been found to be useful for these more challenging patients include the following:

- 0.01 mg/kg Medetomidine (can increase to 0.02 mg/kg)
- 0.1 mg/kg butorphanol
- 0.1 mg/kg midazolam (can increase to 0.25 mg/kg)

There are some potential variations such as:

- Ketamine 1 mg/kg substituted for Midazolam (does not have amnesic properties)
- Methadone substituted for the butorphanol - where pain relief is a particular consideration with a dose range 0.1-0.3mg/kg depending on the surgery.

Conclusions

Behavioural conditions can be related to natural species specific behaviours and commonly result from unintentional and inappropriate learning. However, exclusion of medical factors always needs to be considered in behavioural cases especially when behavioural symptoms are sudden in onset, signs show an unexpected form of progression and there is a poor response to conventionally accepted forms of behavioural modification. Similarly, the potential for an underlying behavioural reason for medical change should not be ignored, especially if physical disease is recurrent, patients show concurrent alterations in behavioural responses and there is a poor response to conventionally accepted forms of medical therapy. The interplay between emotional and physical health is an important consideration when making a diagnosis. It is also important to consider emotional health when handling patients in routine consultations and when deciding on treatment options.