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UPDATE ON DIAGNOSIS AND TREATMENT OF SKIN TUMORS

The large majority of tumour conditions of the horse encountered in practice affect the skin and these are a relatively common occurrence. The management of cutaneous neoplastic diseases has improved over the last 40 years, but despite significant progress in other species in a wide range of neoplastic conditions, the horse still lags far behind. In the equine species, cutaneous neoplasia has been consistently belittled and therefore owners have developed a casual approach to the conditions that regrettably has also transferred to the veterinary profession. This has been a major constraint on progress in skin cancer. There are many reports of single cases for almost all the known tumours in mammals but these are seldom properly reported and are even less often incorporated into larger, multicentre studies that could provide genuine evidence based information on prognosis and treatment options. Oncology has not become a significant speciality in equine medicine and cutaneous oncology is also largely ignored. Specialist opinion can usually be obtained and some cases can be admitted to specialist centres for treatment; this should maximise the chance of successful treatment but it is important to remember that no specialist will have a 100% success rate!

Currently the major emphasis in cutaneous oncology is focussed on:

1. **Equine Sarcoid:** The equine sarcoid encompasses a spectrum of fibroblastic tumours that include neurofibroma, spindle cell sarcoma, fibrosarcoma and myxofibrosarcoma
2. **Equine Melanoma:** There are recognised variations of the equine melanoma some of which are highly malignant but many which are singularly benign and have only space occupying and cosmetic effects.
3. **Squamous cell carcinoma:** The most aggressive SCC is that in the stomach but there are highly dangerous variants of the cutaneous form that occur in the prepuccial and vulvar regions.

These three tumour types make up over 95% of cutaneous tumours in the horse (Jackson, 1936; Baker and Leyland, 1975). The remainder are lymphoma and various forms of lymphosarcoma, basal cell carcinoma, haemangiosarcoma and mastocytoma.

Very young foals may also have cutaneous haemangioma; these are both difficult to treat and highly dangerous if left. The most difficult cutaneous tumours to treat are those that are cutaneous manifestations of internal or widely disseminated tumours such as lymphosarcoma.

In spite of the relatively high prevalence of the three major tumour types little therapeutic progress has been made for most of them. The problems of the individual tumour types have influenced progress. The equine melanoma occurs predominately in grey horses and despite the often reported near 100% prevalence in grey horses over the age of 10 - 15 years, very little is known about the condition. There is probably little incentive to research this condition. Squamous cell carcinoma affects various different skin sites and so the numbers of cases of any particular type are low – again this acts as a constraint upon progress. Furthermore, it commonly affects difficult anatomical sites such as the penile skin, the eyelids and the mouth and so again the therapeutic options are limited by anatomic considerations. There has been a little more progress in our understanding of the equine sarcoid; the rather ‘blinkered’ approach of many pathologists in their belief that the disease behaves as a virus infection rather than a ‘cancer’ condition has also hindered therapeutic progress.

This has led to an unhelpful and rather introspective attitude to the disease whereby veterinarians are inclined to advise benign neglect: “Monitor its progress and let me know when it gets bad”. This attitude is certainly counter to all recognised policies on neoplastic disease in any species. The owner can justifiably ask the veterinarian “Is this small tumour on my horse going to get smaller, easier and less dangerous with time, or is it going to get bigger, more difficult and more dangerous? The next question that can be asked after the obvious answer is given, can be “Would you prefer to do something about it now while it is small, easy and relatively safe, or would you prefer to have to operate when it is larger, difficult / impossible and pathologically dangerous?” Given that the melanoma is almost invariably very benign when it is small and invariably becomes malignant, the choice is obvious and stark! , Where melanomas occur in non-grey horses it usually has a more malignant implication. Squamous cell carcinoma is an aggressive, often invasive tumour but only rarely does it metastasise to other organs.

Cutaneous lymphosarcoma is a serious problem but the cutaneous histiocytic form has a much better prognosis than the multi-centric forms. What is possible to treat depends primarily on the tumour type and extent, the available technology and the skill and experience of the veterinarian.

The wide variety of treatment options for treatment of skin tumours in general and sarcoids in particular, implies that no single method is universally applicable or effective. The surgeon needs to consider the likely prognosis and should of course avoid any treatment attempts unless there is reasonable expectation of an improved outlook for the horse. Failure to remove the whole tumour (by whatever method is chosen) usually results in recurrence and in some cases, such as the equine sarcoid, this can be in a dramatically more aggressive form. Therefore, careful clinical assessment must be performed before embarking on treatment and the owner must be apprised of the likely outcomes. Referral to a specialist centre is a valuable option in all cases so that a specialist opinion can be sought. It should be remembered however, that specialists will have failures although hopefully these will be fewer than non-specialised interference.

Before embarking on treatment of any skin tumour, the clinician needs to be aware of the pathologic behaviour and implications of the tumour in the particular location. This creates challenges since many tumours are poorly characterised in horses and there is considerable debate about the true implications. For example, a penile carcinoma in a 5-year-old horse has considerably different implications, behaviour and prognosis from the visually similar condition in older geldings. Further, even the common tumours have a widely variable clinical behaviour. It is well known for example that many sarcoids remain static for years but others show a highly aggressive behaviour within days or weeks of being subjected to accidental or intentional trauma.

References

- Baker JR and Leyland A (1975) Histological survey of tumours of the horse with particular reference to those of the skin. *Veterinary Record* 96; 419-422
- Jackson C (1936) The incidence and pathology of tumours of domestic animals in South Africa: A study of the Onderstepoorte collection of neoplasms with special reference to their histopathology. *Onderstepoorte Journal of Veterinary Science and Animal Industries*. 6; 1-460
- Knottenbelt DC and Pascoe RR (1994) *Colour Atlas of Diseases and Disorders of the Horse*. Mosby, London.
- Knottenbelt DC: A suggested clinical classification for the equine sarcoid. *Diag Tech Eq Med* 2005; 3: 278-295
- Knottenbelt DC (2009) *Pascoe's Principles and Practice of Equine Dermatology*. Saunders Elsevier, Oxford UK
- Knottenbelt DC, Patterson Kane J, Snalune K *Clinical Equine Oncology*. 2015 Elsevier Oxford.
- Scott DW and Miller WH (2006) *Equine Dermatology*. Saunders, Philadelphia USA.