INTRODUCTION

The term dermoid sinus was first used in 1939 to describe a skin defect seen in 2 Rhodesian ridgeback puppies, and later in Rhodesian ridgeback crosses. Cases have also been reported in a Yorkshire terrier, shih tzu, boxer, English bulldog, boerboel and Great Pyrenees dog. In the Rhodesian ridgeback the condition is hereditary. Dermoid sinus is a congenital abnormality caused by incomplete separation of the ectodermal nerve from the skin during embryological development. The result is a blind-ending tube of varying thickness and lined by epidermal appendages, extending from a small dorsal midline skin opening into the deeper tissues.

The condition is usually detected in Rhodesian ridgebacks and their crosses when they are young since they are actively screened for the condition by breeders and veterinarians. Breeds in which the dermoid sinus is rarely suspected may only be presented with clinical signs as adults. The sinus can be single or multiple, opening on the dorsal midline in the cervical, cranial thoracic and sacrococcygeal regions where the characteristic dorsal ridge of the Rhodesian ridgeback and their crosses is present. They do not occur within the areas of the ridge, as has been incorrectly stated by some authors. Swelling due to continued production of sebum within the sinus tract and draining tracts are common presenting complaints. In uncomplicated cases a hard cord can be palpated in the subcutaneous tissues. Pain on palpation may occur if secondary inflammation or infection is present, which can progress into an abscess that ruptures into the surrounding tissues. Neurological signs may be present if the sinus communicates with the dura mater and causes inflammation of the spinal cord.

CASE HISTORY

A 20-month-old male, neutered, pure-bred chow chow dog was referred to the Ondersteypoort Veterinary Academic Hospital (OVVAH) with a history of dermoid sinuses. A year before referral, the dog was presented with a swollen, infected, discharging tract in the dorsal midline of the mid-cervical region that the referring veterinarian treated by surgical excision of a mass. Four to 5 months later the subcutaneous mass reappeared caudal to the previous surgical site. Intermittent infection of the mass was controlled with antibiotics, but it reappeared when the antibiotics were discontinued.

In clinical examination at OVVAH a firm cord, about 7 mm in diameter, was palpated in the subcutis of the mid-cervical region underlying the previous surgical scar and extending in a cranioventral direction (sinus 1). Five centimetres caudal to this scar, a firm, non-painful, well-defined subcutaneous structure 15 mm in diameter was palpated in the midline connected to the skin via a small opening (sinus 2). Two similar, discrete, round subcutaneous structures were present in the midline of the cranial interscapular region. The cranial structure (sinus 3) did not have a skin opening, while the caudal one (sinus 4) had a 1 mm skin opening with a protruding tuft of hair. No neurological abnormalities were present.

Survey radiographs of the cervical and thoracic vertebral column revealed an irregular area of lysis on the caudodorsal aspect of the dorsal spinous process of T1. Based on the history, clinical signs and suspected involvement of bone, a tentative diagnosis of multiple dermoid sinus was made. Fine-needle aspirates of the masses were not performed.

After routine anaesthetic induction, prophylactic amoxycillin (Amoxil, Smith Kline Beecham) was administered intravenously at a dose of 15 mg/kg. Preparation of the patient and surgical procedure were as previously described. The firm cord of sinus 1 started blindly below the skin and was surrounded by scar tissue dorsal to the neck muscles, with many smaller fibrous cords branching off from it. These were dissected out in toto with the surrounding scar tissue, the main tract ending abruptly as a thin fibrous band extending towards the nuchal ligament. The opening of sinus 2 communicated with a round cystic structure that ended abruptly in the subcutis. Sinus 3 was 15 mm in diameter, started about 5 mm below the skin, ended blindly in the subcutis and did not communicate with the surface of the skin. The 4th sinus communicated with the external skin opening by means of a short, thickened cord, dilated to 20 × 15 × 20 mm and then continued as a fibrous cord of approximately 4 mm diameter. This cord ended on the cartilage covering the caudodorsal aspect of the dorsal spinous process of T1 without extending into the underlying bone. Although it was suspected radiographically that the sinus tract may have continued into the bone, no continuation was seen ventral to the supraspinous ligament. No connections were present between the sinuses. All the resected tissues were submitted in 10% buffered formalin for histological examination. A fenestrated tube drain connected to a closed active drainage system (Porto-Vac, Sabax) and a well-padded neck bandage

ABSTRACT

A case of multiple dermoid sinuses in the dorsal cervical and craniathoracic regions in an adult chow chow dog is described. One sinus did not open on the skin surface. This is the first reported case of the condition in this breed and the first time absence of the sinus opening on the skin is described. The use of the term pilonidal sinus to describe this condition is challenged.

Key words: chow chow, cutaneous opening, dermoid sinus, pilonidal sinus.

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were applied to obliterate dead space and prevent the formation of a seroma. Prophylactic amoxicillin-clavulanic acid (Synulox, Pfizer A.H.) was given orally at a dose of 20 mg/kg, 4 and 12 h post-operatively. The drain was removed after 2 days, when drainage had become negligible and the bandage removed on the 3rd post-operative day.

Histologically the sinuses had the appearance of dilated hair follicles, with large amounts of keratin occupying the lumens. The surrounding squamous epithelium was thin and atrophied, and surrounded by mature connective tissue. Sinus 1 had several tracts branching off from the main tract. These tracts had the appearance of hair follicles with adnexal structures and were present in the connective tissue surrounding the main tract. Multilocul areas of pyogranulomatous inflammation were evident around keratin and hair fragments. All sinuses were considered to have been removed in toto and no communication could be demonstrated between the sinuses.

No recurrence of any of the sinuses occurred during the 5 months following surgery.

DISCUSSION

Four types of dermoid sinuses have been described depending on the depth to which the sinus extends: type I ending on the dura mater, type II ending indirectly on the supraspinous ligament, type III ending in the subcutaneous tissues and type IV ending on the dura mater. Sinus 1 did not open on the skin surface due to suspected previous incomplete resection with resultant recurrence. This would explain the presence of the fibrous scar tissue below the skin, in which the sinus abruptly started. The 3rd sinus had no external opening on the skin surface, but a thin band of fibrous tissue extended proximally from this cystic structure towards the skin. Absence of a skin opening has not previously been reported. In two cases found in the literature, no mention was made of observing an external opening after clipping the surrounding hair. In both these cases the initial diagnosis was that of an abscess. It is unlikely that this common feature would be overlooked or not reported. A Rhodesian ridgeback puppy was affected in 1 case, and the author does comment on the presence of the openings in the 2nd case. No mention of a discharging tract is made, so it is unlikely that the skin opening was obscured by a ruptured abscess. The other case involved a boerboel, in which no opening was observed either (S van Schouwenberg, Waterkloof Veterinary Hospital, pers. comm., 1997). Although it cannot be certain that a skin opening was absent in these 2 cases, but simply not reported, it is possible that they were similar to sinus 3 in this report. If failure of separation of the neural tube can give rise to a fibrous band connecting a dermoid sinus distally to the supraspinous ligament, it should also be possible for such a connection to exist proximally between the sinus and the skin. This would result in the absence of an external skin opening. It is proposed that this appearance be classified as a type V lesion.

The treatment of choice for dermoid sinuses is complete surgical excision. Entry into the sinus tract, which can make removal of the entire sinus difficult and increase the chance of postoperative infection, should be avoided. Conservative management of dermoid sinuses has been advocated by certain authors, delaying treatment until clinical signs become evident. This approach is questionable for the following reasons: a) clinical signs can develop later in life, requiring surgery, b) a sinus that communicates directly with the dura mater can cause meningoencephalitis and neurological signs; c) long-standing dermoid sinuses get infected and inflamed, making surgery more extensive and increasing the risk of incomplete removal and subsequent recurrence. Surgery on early, elective cases is uncomplicated except for the formation of a seroma. If surgery is to be attempted, facilities and expertise should be available to perform a dorsal laminectomy, should the sinus communicate directly with the dura mater.

The histological appearance of all 4 specimens examined in this case was typical of a dermoid sinus. They consisted of thin, stratified, squamous epithelium lining the sinus, with the presence of adnexal structures, especially hair follicles, but also sebaceous and sweat glands. The term pilonidal sinus is used in standard veterinary textbooks to describe the dermoid sinus. All the case reports of this condition, however, refer to it as a dermoid sinus. Reference to pilonidal sinus is made in another 3 case reports, but only as a synonym. A search of the current veterinary literature failed to find any articles containing the term pilonidal sinus. The term is derived from human medical literature, and describes an inflammatory condition seen in the sacrococcygeal region of mainly adult animals and in breeds other than the Rhodesian ridgeback and its crosses in which it has classically been described.

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REFERENCES

13. Lamagna F, Potena A 1995 Dermoid sinuses in adult animals and in breeds other than the Rhodesian ridgeback and its crosses in which it has classically been described.

Book review — Boekresensie

Ethnoveterinary research and development

C M McCorkle, E Mathias and T W Schillhorn van Veen (Eds)


Eighty-nine percent of the planet’s inhabitants rely mainly on traditional treatments and practitioners, i.e. on ethnomedicine. A similar percentage appears to hold for livestock and ethnoveterinary care. This interdisciplinary and international compilation of reviews and case studies published in 1996 is the first in the field of ethnoveterinary medicine.

‘Whether in poor, Third World countries or in the relatively rich countries of the First World, the economic, environmental and biomedical sustainability of many modern technologies has been called into serious question’. This is particularly provocative in our current environment in the sub-Saharan region.

Constance McCorkle and her co-workers present a book relevant to our own current challenges. Several chapters give insights into relevant case studies and methodologies to collect and effectively analyse data in the field of veterinary anthropology (disease factors, epidemiology, socio-cultural and biophysical aspects of animal health and production). Socio-cultural, environmental and biomedical viewpoints intertwine with historical perspectives. Twenty-three chapters cover 10 major domesticated species in 40 African nations as well as in Asia, Europe and the Americas. From topics such as those of the opening chapters ‘Sense or nonsense? Traditional methods and modern medicine’, this book offers any veterinary scientist considerable food for thought. An extensive reference list provides the reader with further sources of material.

The book is designed to provide workers in this field with insights and methodologies not often accessible in a field of growing awareness in our own environment.

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