

# Dermoid cyst of the spinal cord associated with ataxia in a cat

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## ABSTRACT

A young adult Balinese cat developed complete hindlimb paralysis which persisted for six weeks. Clinical findings suggested a lesion compressing the spinal cord and this was confirmed at necropsy. A dermoid cyst was present at the level of the third thoracic vertebra. The cyst was lined by stratified squamous epithelium and contained desquamated keratinised material and hair fragments. Sebaceous glands and hair follicles were present in the connective tissue wall. This is the first report of a dermoid cyst in the spinal cord of a cat. The lesion is considered to be a congenital anomaly.

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## INTRODUCTION

Dermoid and epidermoid cysts are most commonly encountered in the skin of the dog (Muller and others 1989) but occur occasionally within the central nervous system of animals (McGrath 1960) and man (Rubinstein 1972, Arseni and others 1975). Recently, epidermoid cysts have been reported in the lung of a domestic cat (Milli and Haziroglu 1990). The purpose of this report is to describe a dermoid cyst within the central nervous system of a cat.

## CASE HISTORY

A 16-month-old female Balinese cat presented with ataxia of sudden onset and apparent disorientation. It had no history of previous illness or lameness and after five days confinement made a good recovery. On jumping off a table 11 days later, the cat developed complete hindlimb paralysis. Corticosteroid treatment was given over six weeks but no improvement was observed.

The cat was referred to the Feline Centre, Department of Veterinary Medicine, University of Bristol. On clinical examination, it had a low crouching stance and was unable to walk. The hindlimbs exhibited proprioceptive deficits, bilateral muscle atrophy and decreased muscle tone. A positive anal reflex was present but the cat had urinary and faecal incontinence. The patellar and withdrawal reflexes were increased and the tail was flaccid. Reduced, conscious perception of pain in the hindlimbs and tail was noted. The forelimbs were normal and no other clinical abnormalities were detected.

Plain radiographs of the spine and pelvis and routine haematology and blood biochemistry results were normal. Tests for feline leukaemia virus antigen and feline immunodeficiency virus antibody were negative. A coronavirus titre of 1:2560 was detected but its significance was uncertain since high titres may be detected in healthy pedigree cats (Sparkes and others 1992).

From the clinical findings and neurological examination, a lesion compressing the spinal cord between the second thoracic and third lumbar segments was suspected. The cat was euthanased on the basis of the severity of the clinical signs, duration of the illness and poor prognosis for complete recovery.

### *Pathology*

At post mortem examination, pathological changes were confined to the spinal cord. The cord was swollen at the level of the third thoracic

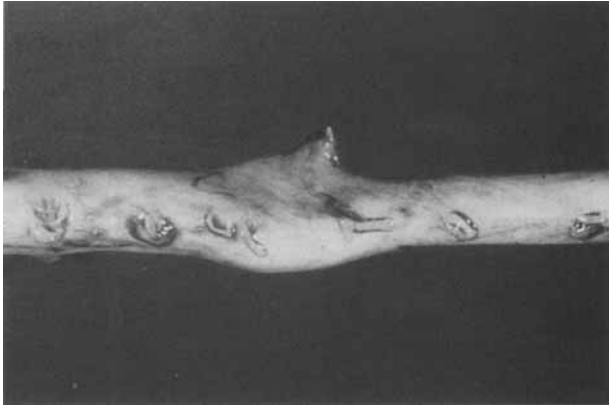


FIG 1. Swelling of spinal cord at the level of the third thoracic vertebra. A short projection is present on the dorsal aspect

vertebra (Fig 1), with a pointed projection on the dorsal aspect. On transverse section, it was found to be a firm, cream, pyriform, intramedullary mass with the apex situated dorsally. The mass was 0.5 cm in diameter, with a narrow fibrous capsule. The brain and sections of cervical, thoracic (including the lesion) and lumbar spinal cord were fixed in neutral buffered formalin, processed by the paraffin method and embedded in paraplast. Sections were cut at 5  $\mu$ m and stained with haematoxylin and eosin.

On histological examination the lesion was cystic and confluent with the dorsal meninges (Fig 2). The spinal cord neuropil ventral to the cyst was compressed and had undergone Wallerian degeneration. The cyst was lined by stratified squamous epithelium and contained

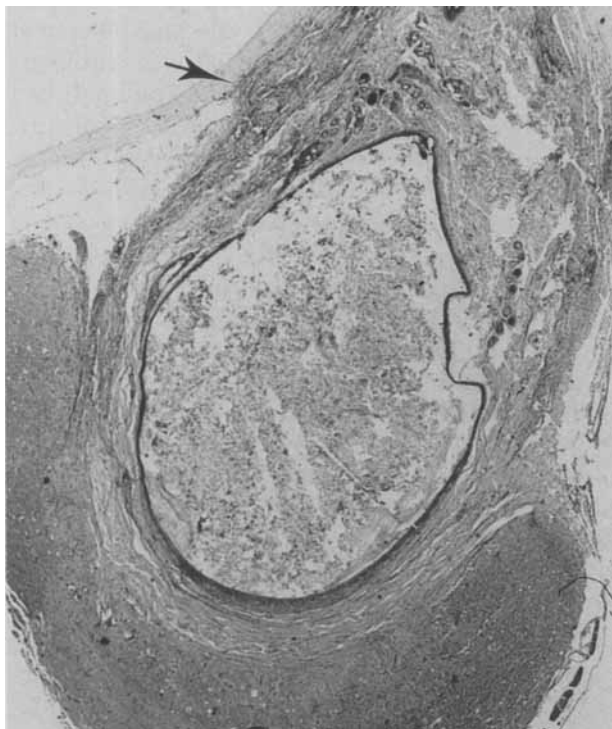


FIG 2. Epidermoid cyst, confluent with dura mater (arrow) compressing spinal cord (C). Haematoxylin and eosin  $\times$  30

desquamated keratinised material and hair fragments. The surrounding capsule consisted of dense collagenous connective tissue in which occasional hair follicles and sebaceous glands were present (Fig 3). A diagnosis of an intraspinal dermoid cyst was made.

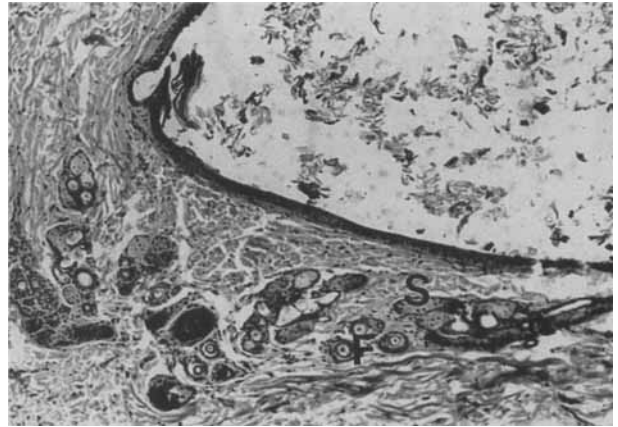


FIG 3. Edge of dermoid cyst containing flakes of keratin in the lumen. Hair follicles sectioned transversely (F) and sebaceous glands (S) are in adjacent connective tissue. Haematoxylin and eosin  $\times$  102

## DISCUSSION

Epidermoid and dermoid cysts occasionally occur in the central nervous system. In animals, intracranial epidermoid cysts are reported in horses (Kelly and Watson 1976), dogs (Kornegay and Gorgacz 1982) and a ferret (Hofmeister and Breuer 1989). However, only one case of a dermoid cyst in the brain of a dog is reported (McGrath 1960). Within the spinal canal of animals epidermoid cysts are reported in rats and mice (Levine 1966, Zimmerman 1979, Stroop 1984, Nobel and others 1987), a lamb (Baharsefat and others 1972) and a dog (Tomlinson and others 1988). A single dermoid cyst is reported in the spinal cord of a mouse (Nguyen 1988).

In man, epidermoid cysts are reported in the cranial cavity (Arseni and others 1975) and spinal cord (Choremis and others 1956, Smith and Timperley 1984) and dermoid cysts in the cranial cavity (Rubinstein 1972). In the spinal cord the cysts may have developed following iatrogenic or traumatic penetration of the meninges so that epidermal cells are implanted into the spinal cord (Smith and Timperley 1984).

The present case is the first report of a dermoid cyst in the central nervous system of a cat and, in the absence of a history of penetrating trauma or surgical intervention, is considered to be a congenital anomaly.

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## ABSTRACTS

### Catheter assisted retrieval of urocystoliths from dogs and cats

THE retrieval of urocystoliths is necessary so that the precise nature is known before correct medical treatment can be attempted. Abdominal radiography, including double contrast cystography, is used to evaluate size, number and location. Uroliths detected on plain films may be too large to be removed by catheter; because the size of uroliths retrieved is limited by catheter diameter. The largest diameter which does not traumatise the animal should be used. Ideal catheters are soft and flexible. The animal is placed in lateral recumbency and the well-lubricated catheter advanced so its tip does not interfere with bladder wall movement. If necessary the bladder is moderately distended with saline. The urine/saline is aspirated into a syringe while an assistant vigorously and repeatedly moves the animal's abdomen up and down. This causes uroliths in the dependent portion of the bladder to disperse throughout the liquid. They are then drawn into the syringe. This procedure is repeated several times if necessary. Care must be taken not to over distend the bladder.

LULICH, J. P. & OSBORNE, C. A. (1992) *Journal of the American Veterinary Medical Association* **201**, 111-113

### Follicular cystic ovaries and cystic endometrial hyperplasia in a bitch

AN 18-month-old Bouvier de Flandes bitch had a vulva swelling, vaginal discharge and persistent oestrus. The discharge was initially sanguineous but became serous, then purulent. The bitch had mated but had never conceived. Signs of oestrus had been present for four months. Vaginoscopy revealed crenated longitudinal folds of the walls characteristic of oestrus. Ampicillin was given to treat the open pyometra. Ultrasonography demonstrated a lobulated right ovary with no follicles. On the basis of these findings and oestrogen levels, persistent follicular cysts were diagnosed. This did not respond to HGT treatment. The follicular cysts were aspirated and 65 ml purulent uterine fluid withdrawn during exploratory laparotomy. All signs resolved in six weeks. Two months later the vaginal discharge returned. Ovariohysterectomy was performed. Histological examination of the uterus confirmed cystic endometrial hyperplasia. Degenerating corpora lutea with no follicles were found in the right ovary.

FAYRER-HOSKEN, R. A., DURHAM, D. H., ALLEN, S., MILLER-LIEBL, D. M. & CORDAL, A. B. (1992) *Journal of the American Veterinary Medical Association* **201**, 107-108