

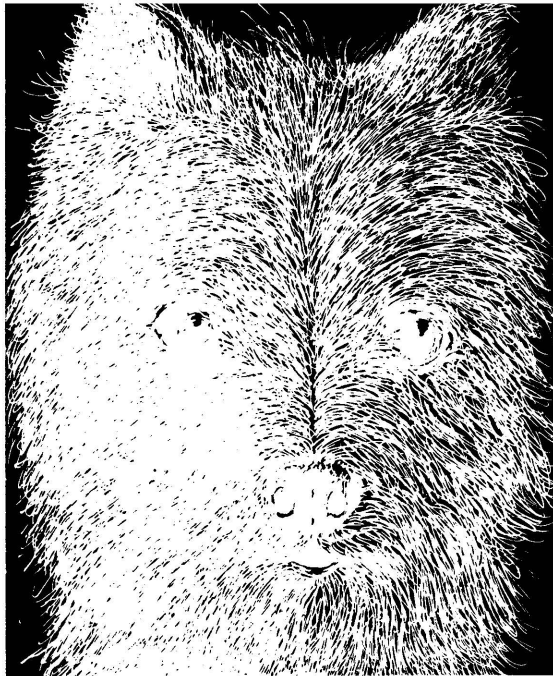
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no 3 october
1975

a publication by the students of the faculty of veterinary science
'n publikasie deur die studente van die fakulteit veeartsenykunde

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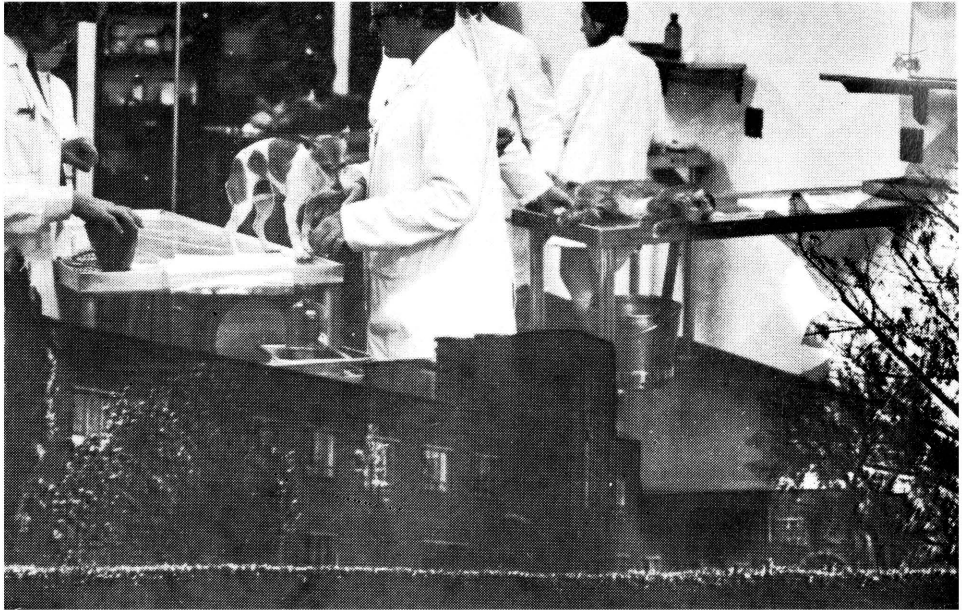
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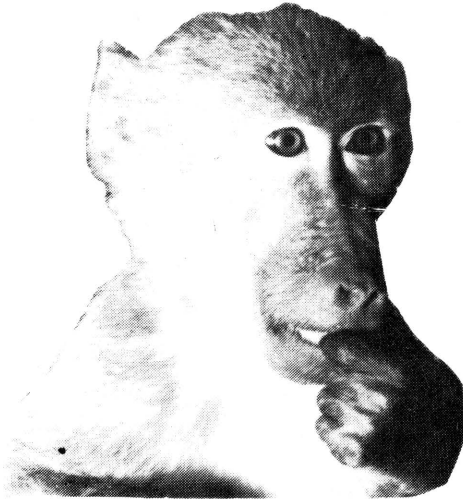
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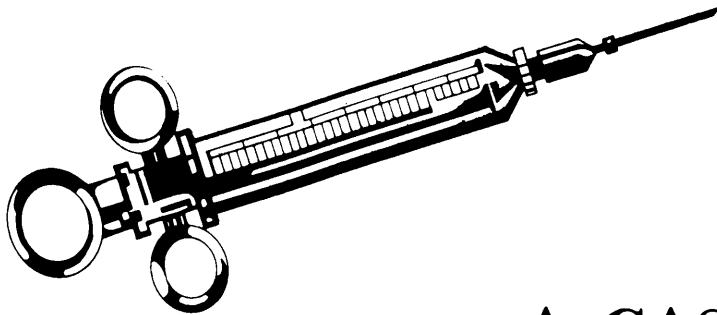
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EDITORIAL



The response to our first issue was very favourable – we are indebted to those veterinarians who have given us the financial assistance so essential for the continuation of this venture. Many donations have also been received – thanks. Subscription forms have been included with this issue as well – please ignore them if you have already subscribed.



A CASE OF EQUINE STRONGYLOSIS

Class Case — M. Lowry B.V.Sc.V. — 1974

SUBJECT:

A three and a half year old non descript piebald filly.

HISTORY:

Ten days prior to admittance the filly started losing condition at an alarming rate and showed signs of colic, in this case rolling, lying down and grinding her teeth. She also rubbed her perineum frequently. Dosing history included treatment with **Neguvon P** and **Equizole** four months and one month prior to admittance respectively. The filly had apparently always been in poor condition. She had been vaccinated against horse sickness.

CLINICAL EXAMINATION:

- Signs of pain and restlessness
- Congested mucous membranes and petechiation of membrana nictitans.
- Auscultation of abdomen revealed excessive borborigme with presence of gas and liquid.
- Decubitis wounds present.
- Temperature 38,2°C, respiration 22 per minute pulse 56 per minute.
- Faeces very soft consistence.

Urine examination: No significant findings

Faeces examination: Differential egg count/gram revealed the following: **Strongylus Spp** 3,200
Oxyuris equi 1,400; **Ascaris equorum** 800.

SPECIAL EXAMINATIONS

Haematology

Hb 16,5
Rcc 9,94
Pcv 55,6
Mcv 62
Wcc 25600
Neut 74
Lymph 22
Mono 3
Eosin 1
Baso —

Normal values

11 - 18 g/100ml
6,5 - 13,5 x 10⁶/cumm
31 - 55%
34 - 58 cu microns/cell
5,500 - 12000/cu mm
30 - 75%
20 - 70%
0 - 10%
0 - 3%

Serum Proteins

TSP 5,9
Albumin 50,7%
alpha₁ globulin 4,0%
alpha₂ globulin 6,7%
alpha₃ globulin 8,0%
beta₁ globulin 10,7%
beta₂ globulin 8,0%
gamma globulin 12,0%
A:G ratio 1,03

Normal values

Mean 7,4 grams %
40%
16 - 19 %
11 - 19%
—
12 - 19%
10 - 18%
—
0,5 - 1,0

PROVISIONAL DIAGNOSIS

Verminous arteritis

TREATMENT:

During the morning after admittance the filly suffered an acute colic attack. Treatment included the following during the period of the day:

“Analate”: 10 ml i.m. — Analgesic and spasmolytic. Betamethasone (“Betsolan”): 20 ml i.v. — shock and toxæmia therapy

Dextrose saline (5%): 2 litres i.v. — improvement of blood volume and blood sugar levels.

Plasmolyte B: 2 litres i.v. — improvement of blood volume and acid/base status.

Thioctil acid (“Tioctan”): 20 ml i.v. — liver supportive therapy.

Protiplex: 500 ml i.v. — improvement of serum protein

Diocetyl Sulfosuccinate (5%) (“Cerusal”): 500 ml in 5 litres warm water—antifoaming and softening agent.

“Comprapen”: 20 ml i.m.

“Equizole”: 1 packet

During the next day condition improved slightly and treatment included:

Liquid paraffin: 2L per stomach tube

Tioctan: 10 ml i.m.

Vit Bco: 10 ml i.m.

Acetyl promazine: 2 ml i.m. (10%) solution

Strep: 10 ml i.m.

the next morning the filly was found dead with signs of agonal struggling.

POST MORTEM:

Major post mortal findings were:

1. Cachexia
2. Generalised haemorrhages (petechiae and ecchymoses)
3. Gangrenous typhilitis and peritonitis.
4. Haemorrhagic enteritis and intestinal volvulus.
5. Severe arteritis with thrombosis of anterior mesenteric artery.
6. Ascites and hydropericardium.
7. Habronemiasis and Strongylosis.

FINAL DIAGNOSIS

Chronic Strongylosis with peritonitis, arteritis and thrombosis. Death due to intestinal volvulus and gangrene with concomitant shock.

DIFFERENTIAL DIAGNOSIS

1. OTHER CAUSES OF COLIC:

- a. Gastric dilatation:** Acute or chronic; more commonly the former. The symptoms are not unlike those described except that in cases of gastric dilatation one can usually drain off foul smelling liquid and gas via a stomach tube. The animal also exhibits anorexia.
- b. Enteritis:** Only in very severe cases will colicky pain be a symptom. There is usually an obvious diarrhoea.
- c. Primary Volvulus - Torsion:** Very acute onset and extreme pain. Food and water are refused. External pressure or pressure during rectal examination elicit pain.
- d. Impaction colics:** These conditions can only be differentiated from verminous arteritis in that the latter condition is usually associated with a history of a poor doer and is chronic. Verminous arteritis frequently results in impaction.
- e. Colitis X (Haemorrhagic Colitis)** This idiopathic condition is characterised by a leucopaenia, commonly below 5000/cu mm. Haemoconcentration is reflected by haemoglobin level near 20 gm/100 ml. Death commonly occurs within 24 hours after onset.

2. SENECIOSIS

- a. **Acute** - Symptoms are much like those described with the exception that the disease is acute and the animal will show fairly typical nervous symptoms.
- b. **Chronic** - Again the same symptoms with the exception that colic is not that common and that in the terminal stages the animal shows ataxia. At post mortem a "hobnail" cirrhotic liver is a typical finding.

DISCUSSION

The symptoms and clinical findings are fairly typical of this condition according to the majority of authors referred to. It was unfortunate that a complete rectal examination was not possible. The importance of this examination cannot be over emphasized. Gill⁶ believes that exploratory laparotomy is indicated in the majority of cases for a satisfactory diagnosis of verminous colic. This is however, not the general consensus of opinion; Coffman and Carlson¹ believe that it is possible to give a prognosis on the basis of thorough rectal examination stating that where masses are palpable in the lumbosacral region and where these masses are painful on palpation without apparent adhesions, it is an early case and if treated the prognosis is good. However if the masses are not painful and adhesions are present, the prognosis is poor, particularly if the patient is showing signs of intestinal discomfort.

Faeces examination can be extremely misleading. Acute attacks of Strongylosis can occur without the presence of adults in the tract due to the larval stages causing pathological changes. On the other end of the scale Farrelly⁴ recorded egg counts of 1800 Strongyle eggs per gram without any clinical signs of disease. Blackwell¹¹ and Round⁹ recorded cases of severe loss of condition due to the so-called "protein losing enteropathy" form of Strongylosis where egg counts were in the region of only 200 eggs per gram.

In considering egg counts the following should be taken into account. Firstly, the amount of faeces passed by the animal markedly affects the egg count. Where large amounts are passed there is a considerable diluting effect. Secondly, several samples analysed separately will give a far better indication of the parasite burden. Thirdly, the time of the year should be considered. Ogbourne⁷ when studying the fecundity of Strongyles found that adult populations reach a peak in the winter months dropping during the summer. The egg counts follow this pattern directly.

Wright¹⁰ states that any animal showing an egg count in excess of 500 eggs per gram should be treated. Further all horses should be checked at six weekly intervals and treated if the egg counts exceed this figure.

When considering the haematology and serum proteins in this case it is well to bear in mind that the animal was slightly dehydrated and cachectic.

Pcv (55,6%) exceeded the upper limits slightly due to dehydration.

The white cell count (25600/cu. mm.) with a relative neutrophilia can be accounted to the peritonitis. A similar finding is reported by Garner⁵. In the case studied by him a Streptococcal organism was isolated. Duncan³ however reports a neutrophilia in apparently uncomplicated cases of strongylosis.

The literature as regards lymphocyte reaction is confusing. Farrelly⁴ reports up to 45% lymphocytes as a fairly constant finding. Duncan³ found that lymphocytes remained fairly low. The finding in this case tend to fall in with Duncan's results.

Eosinophils are of little value in the diagnosis of Strongylosis. Pont⁸ states that in 51 horses studied by him with varying degrees of Strongylosis the level of eosinophils remained within the bounds of normality.

Total serum proteins were low. This is ascribed to the cachexia.

No explanation can be given for the low levels of alpha globulins seen in this case. Cornelius² maintains that under most conditions the alpha globulins remain constant or if anything they increase.

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ACTIVITIES OF THE SOUTH AFRICAN VETERINARY STUDENTS ASSOCIATION

At the beginning of this year the association acted host to a student from Berlin, Mr. Gerhard Winkler. Thanks are extended to those veterinarians who gave him the opportunity of seeing practice with them, namely:

Dr. R. Every and Dr. R.E. Turner, Dr. A.L. Pringle, Dr. Isdale.

Students from Alfort, France; Berlin and Stockholm are expected during the second semester this year.

The annual Winter Congress of the International Veterinary Students Association held in Dublin (29.2.1974 to 5.1.1975) was a great success and was attended by 104 delegates from 14 countries. The week long program consisted of a series of scientific lectures, general assemblies and the establishment of international contact through many smoothly-run social occasions, consolidated by Ireland's best Guinness.

SOUTH AFRICA'S POSITION IN THE I.V.S.A.

The fact that South Africa is in a position of being geographically isolated from the more closely situated European body limits its influence on many of the IVSA activities. However, the Republic is sought after as regards student exchange and it is here that we have most influence. Student exchanges have increased greatly over the past two years and more applications are anticipated.

It must be stressed that every O.P. Student is paying member of the IVSA and this entitles him or her to take advantage of the reduced costs and other perks if the decision is taken to visit a foreign country. The IVSA constitution permits membership for three years post-graduation. IVSA membership includes:-

- (a) Free accommodation in most faculties for several weeks.
- (b) Pocket money by some faculties!
- (c) A period with a private veterinarian, accommodation free.
- (d) The opportunity to arrange a job in a particular country through the IVSA representative.

In summary South Africa is playing an ever increasing rôle in the IVSA and for this reason it is essential for a delegate to be present at every congress.

ACKNOWLEDGEMENTS

The SAVSA extend its sincere thanks to PFIZER LABORATORIES (PTY.) LTD. who were the sole sponsors of the SAVSA delegate's trip to Dublin.

The summer congress was held in Madrid from 25.8.75 to 2.9.75. Unfortunately we were unable to send a delegate to Spain and the contributions for this purpose will be forwarded for future trips. Contributions were received from the following companies to whom we extend our thanks:

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Hylton Lee has been elected to take over the duties of the S.A.V.S.A. as from August this year.



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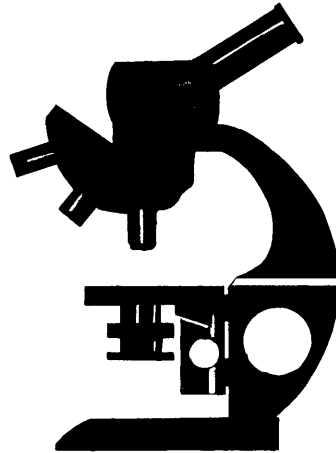
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INFEKSIEUSE PERITONITIS VAN KATTE

'n Gevalstudie en oorsig.

W.S. BOTHA

*Dept. of Pathology
Faculty of Veterinary Science, U.P.*



OPSOMMING:

Infeksieuse peritonitis van katte is 'n onbekende siekte-toestand in Suid-Afrika. Buiksug en abdominale pyn wat klinies waarneembaar is, word as 'n kenmerkende fibrineuse peritonitis met nadoode ondersoek gesien. Enkele afwykings van die tipiese siektebeeld wat in die literatuur verskyn word na verwys.

INLEIDING:

Infeksieuse peritonitis van katte word oorspronklik in die V.S.A. deur Wolfe en Griesemer¹⁰ as 'n kliniese entiteit beskryf. Die siekte is in Engeland opgemerk⁵ en 'n verdagte uitbreek is deur Colly¹ beskryf in wilde carnivora van die Johannesburgse dieretuin.

ANAMNESE EN KLINIESE TEKENS

'n Vierjaar oue opregte Burmese katmannetjie is op 23 April 1974 vanaf Auckland Park, Johannesburg na die Fakulteit Veeartsenykunde verwys met 'n geskiedenis van afwisselende anoreksie, epigastriese pyn en vermeerderde borborigmie. Ten spyte van "Guanimisien forte" - Glaxo Allenbury behandeling het die toestand progressief vererger. 'n Paar dae voor verwysing na die Fakulteit is buiksug en lusteloosheid opgemerk.

Die opmerklikste kliniese tekens was veral buiksug, lusteloosheid, algemene swakheid, anoreksie, dehidrasie, epigastriese pyn, geelsug, anemie en tagikardie. Tydens verblyf in die Fakulteit het die temperatuur van die pasiënt gewissel van 37°C tot 39,2°C maar veral die laaste ses dae het die temperatuur konstant 38,5°C oorskry. 'n Voorlopige diagnose van inkeksieuse peritonitis is gemaak.

Die tekens hierbo beskryf hom baie ooreen met die wat Robinson et al⁶ en Wolfe en Griese-mer¹⁰ aangegee het. Eersgenoemde wys daarop dat in hulle studie van 71 katte 'n betekenisvolle hoër aantal manlike katte aangetas word ($p= 0,01$) en dat daar geen ouderdomsvoorkeur vir die siekte bestaan nie. Hierdie outeurs^{6,10} beweer dat die temperatuur gewoonlik 39,5°C oorskry hoewel enkele gevalle met normale temperatuur opgemerk is. Hulle noem ook dat geelsug algemeen aan die einde van die siektebeeld opgemerk word (20% gevalle) en Robinson et al⁶ beskryf ook 5 katte met 'n asem-nood, hoes en nies as gevolg van 'n fibrineuse pleuritis.

KLINIESE PATOLOGIE EN BEHANDELING:

'n Duidelike anemie was opmerklik van die hemogram wat gedoen is net nadat die pasiënt tot die Departement Geneeskunde toegelaat is (tabel 1). Die anemie het klinies progressief vererger soos wat dikwels tydens ernstige siektetoestande van katte opgemerk word. Geen bloedparasiete is opgemerk nie.

TABEL 1

Hemoglobien	9,5 g%
Hematokrit	33,6%
Rooibloedseltelling	6,06 milj/mm ³
Gem. selvolume	62/u ³

Die geelsug is ondersoek deur bepaling van serumbilirubien te doen. Die totale bilirubien was verhoog tot 1 mg% en dit is bevind dat die grootste gedeelte hiervan naamlik 0,8mg% ongekonjugeerde bilirubien is. Hoewel dit uit die ondersoek blyk dat die geelsug 'n hemolitiese oorsprong het was daar ook 'n verhoging van die transaminase- en alkaliese fosfatase-ensieme in die serum. Dit sowel as die latere histopatologiese ondersoek bewys ook 'n matige lewerskade.

Uit tabel 2 kan gesien word dat 'n leukositose teenwoordig was met 'n relatiewe neutrofilie en linksverskuiwing om 2% bandvorms te gee.

Tabel 2

Witseltelling	11,900/mm ³
Neutrofile	87% (2% bandvorms)
Limfosiete	11%
Monosiete	1%
Eosinofiele	1%

Die peritoneale vloeistof was helder geel gekleur met 'n S.G. van 1,033 en daar was wit- en rooibloedselle sowel as nekrotiese selmateriaal teenwoordig. Die outeurs (1) (6) (10) waarna vroeër reeds verwys is noem dat die siekteverloop gewoonlik van 2 tot 5 weke is en dat geen suksesvolle behandeling bekend is nie. Die betrokke kat is behandel met antibiotika, vitamies, kortikosteroïde en lewer-ondersteunende middels sonder enige sukses en is dood op 6 Mei 1974. Robinson et al⁶ maak melding van een enkele geval waar "Tylocine," Coval Laboratories per mond en intraperitoneaal toegedien is, wat herstel het. Hulle kon egter die resultaat nie herhaal nie.

MAKROSKOPIESE PATOLOGIESE BEVINDINGS.

Die karkas was geel verkleur en die onderhuidse weefsel edemateus. In die abdominale holte was 10 ml helder geel vloeistof teenwoordig wat gestol het met blootstelling aan lug. Al die abdominale organe was bedek met 'n grysgekleurde granulêre dowwe fibrineuse eksudaat in direkte kontras met 'n

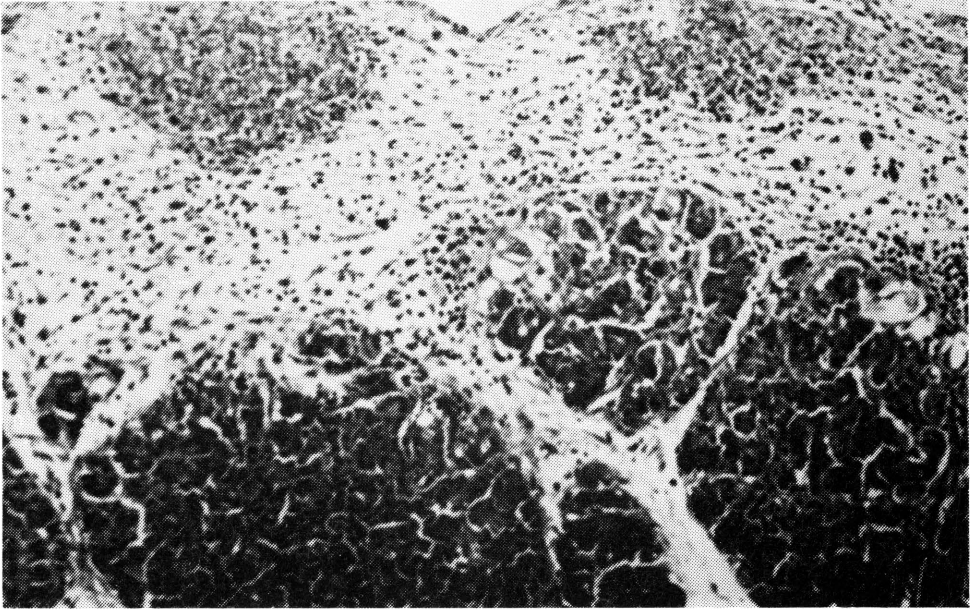


Fig. 1. 'n Fibrineuse peritonitis met nekrotiese fokusse word in die ingewands-peritoneum van die pankreas gesien.

normaal glinsterende pleurale holte. Die fibrineuse peritonitis het opmerklik nie die parengiemorgane, behalwe die lewer en pankreas, diep binnegedring nie. In beide laasgenoemde organe is verspreide wit nekrotiese areas van ongeveer 1 mm groot in die parengiem opgemerk. Die omentum het oneweredige areas met fibrineuse peritonitis en nekrose getoon en dieselfde grys granulêre eksudaat was ook op die parietale peritoneum en diafragma teenwoordig. Splenomegalie asook beenmurg metaplasie was opmerklik.

Hierdie makroskopiese patologiese letsels is dieselfde as wat Wolfe en Griesemer^{10, 11} asook Ward en Pederson⁹ reeds beskryf het. Hulle wys daarop dat buiksug mag varieer van 'n paar milliliters tot meer as 'n liter, en dat fibrienstolsels daarin teenwoordig mag wees. Dit word beweer dat 'n makroskopies waarneembare pleuritis asook periorgitis soms waargeneem word.

HISTOPATOLOGIESE BEVINDINGS.

'n Fibrineuse peritonitis was baie opmerklik oor die hele viscerale peritoneum. Dit word gekenmerk deur groot hoeveelhede fibrien met inflammatoriese selle soos neutrofiële, histiosiete, limfosiete en plasmaselle.

In figuur 1 kan klein verspreide areas van nekrotiese kernmateriaal omring deur inflammatoriese selle en fibrienstolsels in die ingewands-peritoneum van die pankreas gesien word. Dit is ook opmerklik hoe die inflammatoriese reaksie na die parengiem in die pankreas (fig. 1) en lewer (fig. 3) uitbrei.

'n Pankreatiese asinus word in figuur 2 gesien met 'n limfosiet en plasmassel reaksie daaromheen. Fokaal verspreide areas van nekrose met degeneratiewe neutrofiële en 'n paar limfosiete en plasmassel word dieppliggend in die lewerparenchium opgemerk (fig. 3). Die omentum het uitgebreide inflammasie getoon en hoewel nekrose hier nie so opmerklik was nie, is groot hoeveelhede histiosiete, limfosiete en plasmassel opgemerk. 'n Deel van die omentum word in figuur 4 gesien waar meeste van die normale vet vervang is deur die inflammatoriese selreaksie en fibrien.

Slauson en Finn⁷ beskryf ook 'n mikroskopies waarneembare meningo-enkefalitis en panoftalmi-
tis wat gewoonlik sonder enige ander sistemiese letsels voorkom. Doherty² beskryf okulêre letsels
wat klinies sowel as histopatologies opmerklik is. Worfe en Griesemer¹¹ wys daarop dat 'n fibrino-
purulent piogranulomateuse periorgitis in alle gevalle voorkom.

BESPREKING.

Dit word in die algemeen aanvaar dat infeksieuse peritonitis deur 'n virus veroorsaak word^{3, 4, 8,12}.
Pogings om die betrokke virus op weefselkultuur te groei was egter onsuksesvol⁴.

Die siekte is nog nie sonder twyfel bewys om direk oordraagbaar te wees nie maar is eksperimenteel

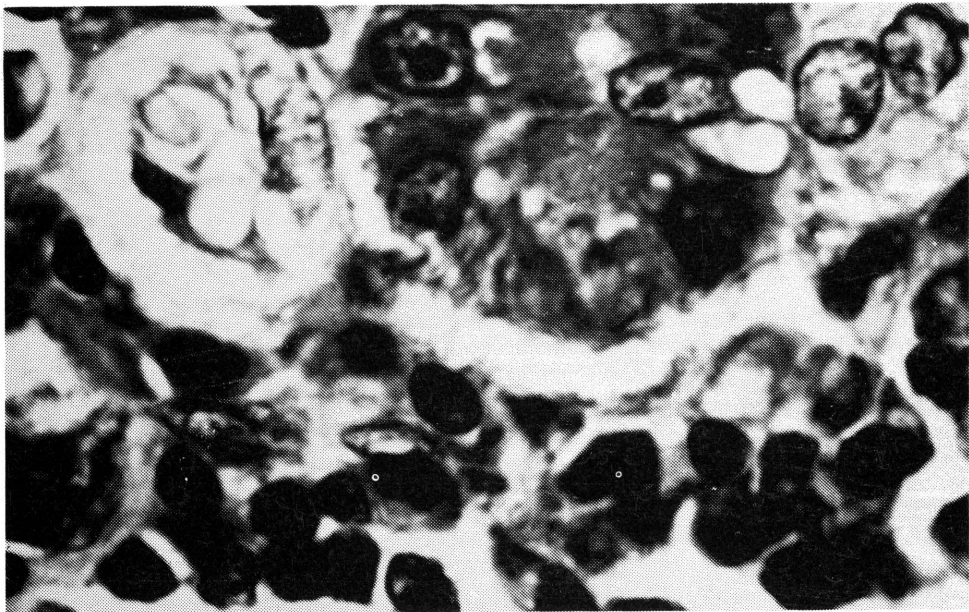


Fig. 2. 'n Pankreatiese asinus word gesien met 'n limfositêre en plasmasselreaksie daaromheen.

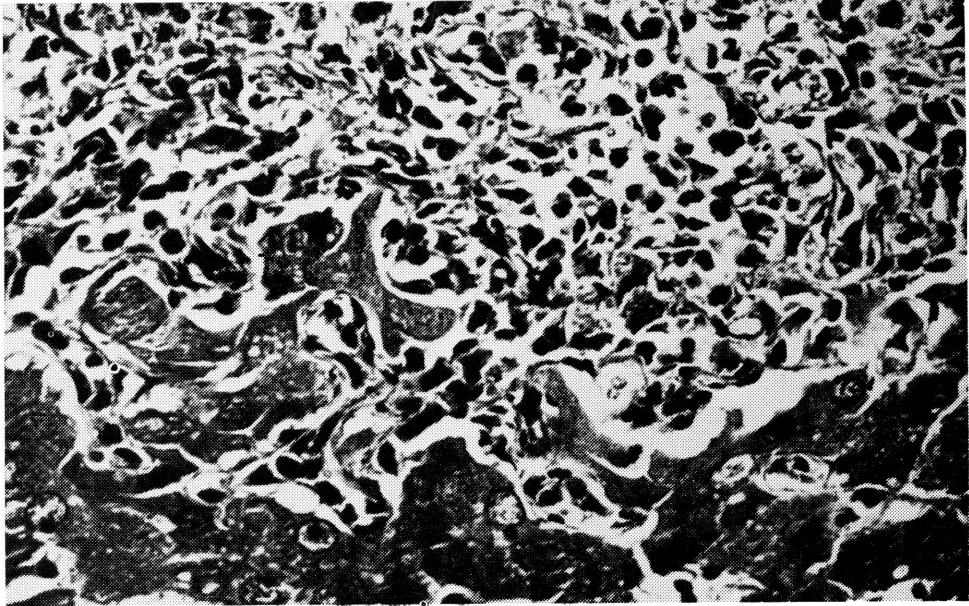


Fig. 3. 'n Area van nekrose met inflammatoriese selreaksie word in die lewerparengiem waargeneem.

na sogenaamde kiem-vry katte deur intraperitoneale inspuiting van buiksugvog oorgedra¹. Bakteriële- en mikoplasmavry filtrate van oorgaansuspensies dra op 'n soortgelyke wyse ook die siekte oor⁴.

Hoewel geen virus deeltjies met elektronmikroskopiese studies in natuurlike gevalle waargeneem kon word nie⁴ is dit wel in die eksperimenteel oorgedraagde toestand gesien^{8, 12}.

Die morfologie van die virusdeeltjies deur J.M. Ward⁸ ondersoek is soortgelyk aan die mens **coronavirus 224-E** en **muis hepatitis virus**. Garrick³ beweer dat die siekte 'n autoïmmuun reaksie teen 'n virus toestand mag wees en wys op die soortgelyke poliserositis in toestande soos lupus erythematoses en rumatoïede artritis.

Dankbetuiging.

Ek wil graag dr. R.K. Loveday bedank vir die beskikbaarstelling van kliniese rekords, Mnr. Meyer vir die fotografie en die tegniese assistente vir die voorbereiding van die snitte;

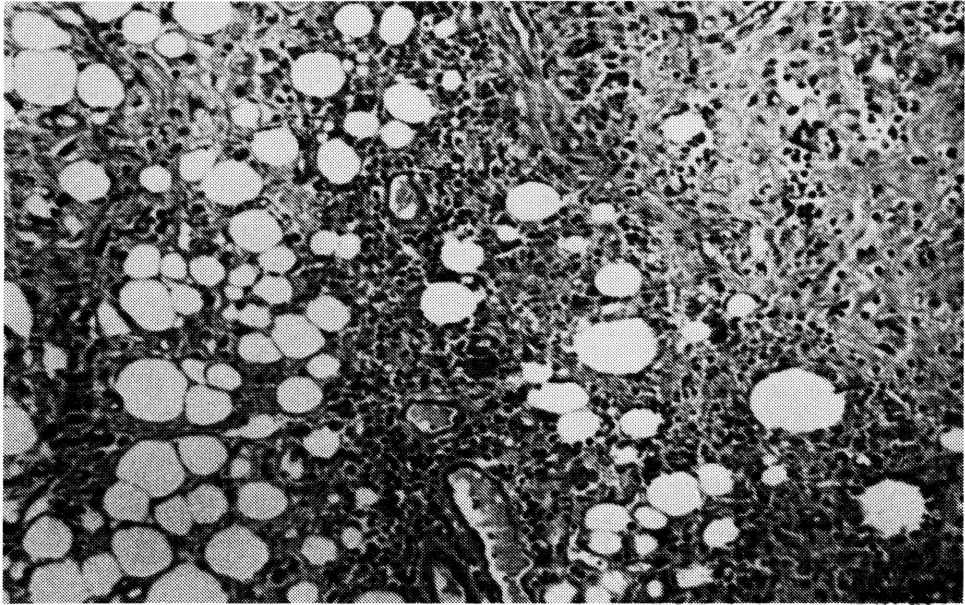


Fig. 4. Die normale vetweefsel van die omentum is grootliks verplaas deur histeosiete limfosiete en plasmassel.

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STUDENTS – JO'BURG VETS CRICKET

"The seat of Veterinary Cricket has now moved to the North" said Dr. Wally Ehret when he handed over the magnificent Ehret - Moore Floating Trophy for 1975 to the student captain, Donald Anderson, after the students had beaten the supremely over-confident side of Jo'burg Vets. The match was played on the Oval at Old Eds in Houghton in April.

The "Oldies" batted first. Brian Rohmberg was lucky to get a few runs by pulling the ball off his nose. But when Peter Humphreys snapped him up with the score at 23 it was all over. Despite a few valiant defensive stands Bruce Anderson and Johann van der Merwe mopped up the remaining 9 wickets and the "Oldies" were all out for 98. Hannes Strydom was brilliant in the outfield.

The Students started well, slumped in the middle and then cruised in comfortably at the end to win by 1 wicket. The man responsible for the slump was Clark who, bowling his "other" one as opposed to his "only" one, picked up a very good but unfortunately wasted hat-trick. There was much excitement amongst the supporters as the students raced to their historic victory; their nerves took quite a knock when a short run was called on the run that would have brought the scores level!

The day was finished off with a Gillette-style match which the Vets also lost.

Thank you very much for a good match, an excellent lunch and a tremendous party afterwards. Good luck for next year!

Scores:

Ehret-Moore Trophy:

Vets: 98: Mitchell 22; Clark 17 n.o; Rohmberg 15; B. Anderson 5/23, J.v.d. Merwe 4/26.
Students: 101: F. van Niekerk 27; C. Barnard 16; P. Humphreys 13; I. Halliday 4/37; Clark 4/36.



Gillette: (10 overs)

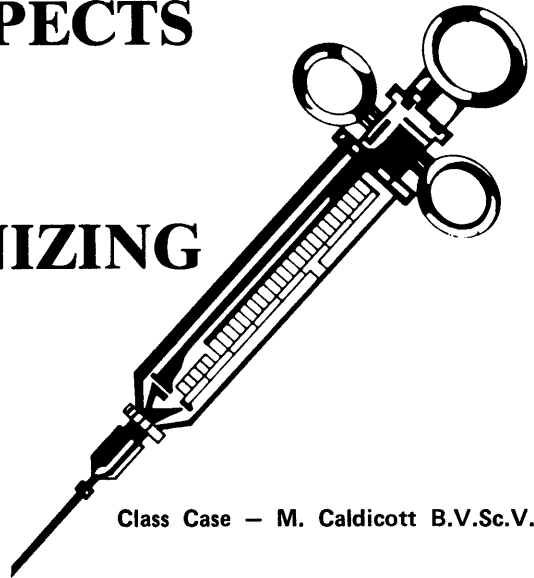
Students: 105/5: S. Kitley 57
Vets: 80/5: Clark 28; Perry 21.

Back: D. Christie, B. Anderson, G. Archibald, P. Humphrays,
A. Erasmus, H. Strydom.

Front: F. van Niekerk, S. Kitley, D. Anderson (Capt),
Miss M. Thomas, J. van der Merwe, J. Gilliomee. (12th man)

Absent: C. Barnard.

CERTAIN ASPECTS OF A DOG DISPLAYING MALE FEMINIZING SYNDROME



Class Case — M. Caldicott B.V.Sc.V.

SUBJECT:

A male Bull Mastiff type dog, 18 months old, weighing 21 kg.

HISTORY:

The animal was presented with the complaint that it had been scratching and biting itself, especially the ventral aspects of the body. Also noticed by the owner was a gynaecomastia of two teats and a progressive alopecia, spreading from the inguinal region over the ventral caudal portion of the penis cranially along the ventral abdomen. New foci started in the axillae to be followed by a hyperkeratotic otitis externa.

CLINICAL EXAMINATION

- Alopecia, lichenification, hyperkeratosis and hyperpigmentation of both inguinal regions, prepuce, posterior ventral abdomen and axillae.
- Gynaecomastia of the two teats cranial to the prepuce.
- Hyperkeratotic otitis externa.
- Generalised lymphadenitis.
- Constant temperature of 39°C or higher.
- Excessive libido with persistent "leg riding" efforts, although no attempt was made to mount an oestrus bitch.
- Blood smears positive for *Ehrlichia canis*.

Further points of note were that the testes were of normal size and consistence.

Further points of note were that the testes were of normal size and consistence.

The pruritis indicated in the history was not evident at clinical examination. It was assumed that fleas were the primary cause of this observation.

SPECIAL EXAMINATIONS

1. **Skin biopsy** of the inguinal region for histopathological examination confirmed a slight hyperkeratosis and parakeratosis with hyperpigmentation of the basal layers of the epidermis.
2. **Skin scrapings** treated with KOH were negative for parasites.
3. **Fungal Culture** of hairs using Sabouraud's Dextrose Agar resulted in growth of *Aspergillus* spp. (non-specific)
4. **Blood Cholesterol** levels were normal, ruling out the possibility of thyroid abnormalities being the primary cause of the condition.
5. **Lymph gland biopsy** for histological examination revealed a normal distribution of blood cell types ruling out the possibility of malignant lymphadenosis. This test was carried out before a positive diagnosis of *Ehrlichia canis* was made.
6. **Semen sample** was normal, confirming normal testicular function.
7. **LDH levels** although raised, were not significantly so to establish a neoplastic process in the body, the main organs suspected being the adrenals, adenohypophysis or testes.
8. **BUN levels** revealed a slight nephritis which subsequently responded to antibiotic treatment.
9. **Urine analysis** revealed a slight cystitis which responded to subsequent treatment with "mandelamine".
10. **Plasma cortisol levels** were normal, indicating normal adrenal function.
11. **Urinary assay for 17 - ketosteroids and 17 - ketogenic steroids** resulted in abnormally high 17 - ketosteroid levels (6,3 mg as opposed to normal 0,84 – 2,10 mg for a 21 kg dog). 17 - Ketogenic steroids were normal, which together with normal plasma cortisol, confirmed normal adrenal hormone-producing function. The possibility of the raised 17 - ketosteroids having a testicular origin is discussed later.

DIAGNOSIS:

The symptoms of pyrexia and lymphadenitis were accounted to *Ehrlichia canis* infection. A diagnosis of **nephritis and cystitis** was also made but was considered as having no significance to the primary condition.

With regard to the skin condition a provisional diagnosis of Leydig cell hyperfunction is forwarded on the basis of the rationale that since the adrenal cortical function was shown to be normal, the testes, being the secondary source of androgens, were considered to be hyperfunctional.

DIFFERENTIAL DIAGNOSIS

1. Relating to pyrexia and **lymphadenitis**:
 - (a) **Lymphosarcoma** - discounted by lymph node biopsy and a normal haematology.
2. Relating to chronic dermatitis:
 - (a) **Sertoli cell tumour** - absence of cryptorchidism, normal testes and pronounced libido tend to lead one to discount this, although lesions are very similar.

- (b) **Acanthosis nigricans** - the fact that the course of the lesions was from the inguinal region forwards makes this an improbable diagnosis.
- (c) **Contact dermatitis** - although ventrally situated, the nature of the skin histopathology, with no erythema and papule formation being present or crusts and excoriations, leads one to discount this diagnosis.

DISCUSSION:

The discussion revolves around the elevated urinary 17 - ketosteroid level. 17 - ketosteroids are derived from the adrenal cortex and from the gonads and hence the source of any hyperfunction is difficult to define. However if one can reasonably assume from the values obtained from urinary ketogenic steroids (17 - hydroxy corticosteroids) and plasma cortisol assays that adrenal cortical function is normal, one can then progress to assume that hyperfunction with consequent overproduction of 17- ketosteroids, in this case probably has its origin in the testes.

Although assay methods are known which can differentiate the 17 - ketosteroids into acidic, phenolic and neutral fractions which represent the bile acids, oestrogens and androgens, and gonadal fractions respectively, these were not available.

In human patients however, the three main causes of increased 17 - ketosteroids are adrenal carcinoma, cortical hyperplasia and testicular tumour (Harper). In this case normal cortisol and 17 - ketosteroid levels eliminate the first two possibilities.

In the testes, testosterone and androstenedione and DHEA are synthesized by the Leydig cells. Testosterone is however converted to androsterone and DHEA which are the principal urinary 17 - ketosteroids. The oestrogenic hormone oestrone, also a 17- ketosteroid, can also be produced in the testes under normal conditions, and if any abnormality were to occur to increase the production of this normally small quantity of oestrone, certain feminizing characteristics could result. However Mattheeuws and Comhaire (1975) found that in a controlled experiment involving five dogs with "Male feminising Syndrome", the values of circulating Estradiol (also an Estrane derivative) were almost normal, whereas the values of testosterone were approximately twice as high as the values observed in a group of control dogs. Furthermore, none of the testes in any of the dogs showed any signs of neoplastic change histologically.

It must be stated however that in this case, it is impossible to maintain that the source of increased 17- ketosteroids is without doubt increased testosterone secretion.

TREATMENT

A course of "Liquamycin" (Oxytetracycline) (210 mg) daily to counter the *E. canis* parasitaemia. Mandelamine tablets 250 g. p.o. four times daily.

The recommended treatment for the skin condition was castration but the owner refused this. The prognosis was therefore regarded as guarded.

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EVERSIE VAN DIE LATERALE LARINGEALE SAKKIES IN DIE HOND



'n Gevalstudie

W.S. BOTHA.

Dept. Patologie

Inleiding:

Eversie van die laterale laringeale sakkies is 'n toestand waar die slymvlies en onderliggende los bindweefsel omstulp tot in die binneholte van die strottehoof. Die toestand word slegs gesien in bragiokefaliese honderasse waar selektiewe inteling aanleiding gegee het tot abnormale anatomiese verhoudings van strukture in die neus en strottehoof.

Leonard (1960) beweer dat omstulping van die laringeale sakkies slegs in vroeë stadium van kolaps van die strottehoof is. Die alombekende toestande van verlengde sagteverhemelte en vernoude neusvleuls in bragiokefaliese honderasse gee aanleiding tot 'n kroniese verhoogde negatiewe druk in die strottehoof. Aangesien die laringeale sakkies die deel van die strottehoofwand is met die laagste spanningsweerstand sal dit die eerste meegee onder die kroniese negatiewe druk en omstulp in die binneholte van die larinks. Dit gee dan aanleiding tot 'n verdere verhoogde negatiewe druk en asemnood. Dit word dikwels verder gekompliseer deurdat die verlengde sagteverhemelte in die binneholte van die strottehoof ingetrek word tydens inaseming. Die uiteindelige gevolg is dat die aritenoïede of gieterkraakbeen totaal saamval en lei tot 'n gevolglike akute asemnood en dood.

KLINIESE TEKENS:

'n Oprek geteelde 3 jaar oue Engelse bulldog reun is in 'n gesonde toestand na die Fakulteit Veeartsenykunde gebring om handdekking toe te pas. Die skielike verandering van omgewing, omgewingsfaktore en relatief warm bedompige klimaat het tot 'n sigbare opgewondenheid gelei. Dit het progressief vererger en 'n asemnood het ontstaan. Op die stadium was die hond baie senuweeagtig en het sianoties geword. Die akute asemnood en sianose het progressief vererger en ten tye van intensiewe behandeling bestaande uit suurstoefoediening en intraveneuse kortikoïde behandeling is die hond dood.

PATOLOGIE.

Die nadoodse ondersoek het die rede vir die voorafgaande kliniese tekens ontbloot. In die strottehoof was daar omstulping van beide laringeale sakkies (fig. 1) en 'n totale afsluiting van die strottehoofholte. Die omgestulpte sakkies was rooi en edemateus. Die verdere veranderinge was dié wat gewoonlik met 'n akute asemnood geassosieër word. Die hele karkas het sianoties voorgekom en puntbloedings is in die lugpyp, pankreas en subendokardiaal in die linkerkant waargeneem. In die longe is edeem, diffuse emfiseem en atelektase gesien.

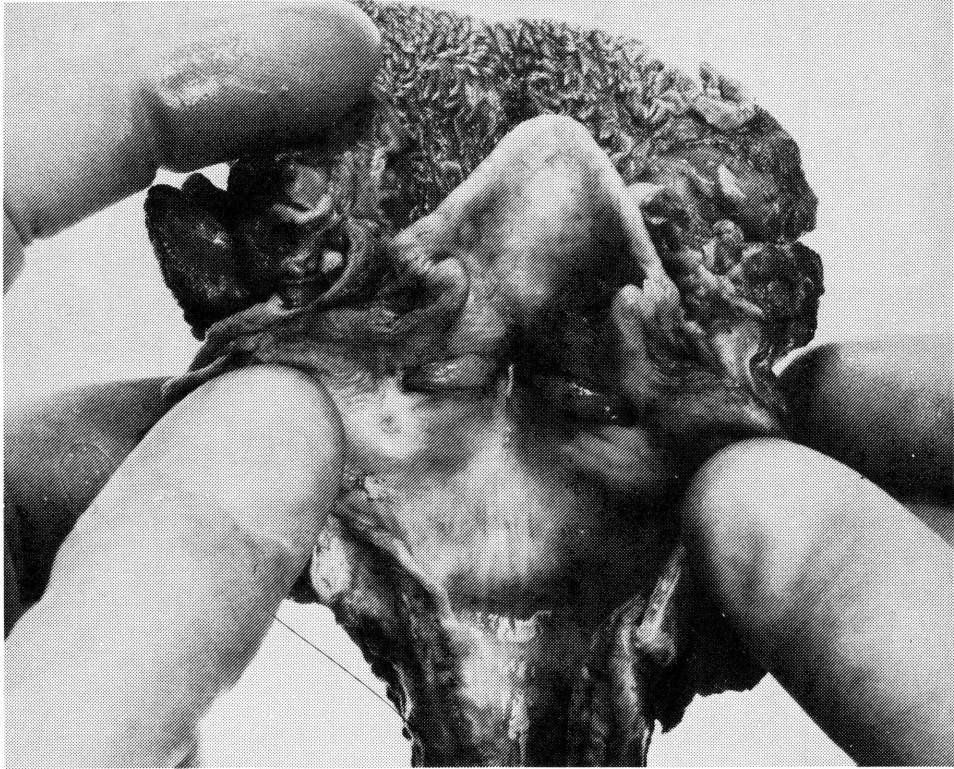


Fig. 1. Omgestulpte laringeale sakkies is duidelik sigbaar in die strottehoofholte.

Tydens die histopatologiese ondersoek is 'n uitgebreide bloeding aan die een kant in die weefsel onder die omgestulpte sakkies gevind. Aangesien dit eensydig was, is dit aangeneem dat die bloeding agonaal ontstaan het tydens die hewige asemnood en nie verband hou met die ontstaan van die toestand nie.

BEHANDELING:

In die betrokke gevalstudie het akute dood ontstaan veroorsaak deur eversie van beide laterale laringeale sakkies. Daar is geen tekens van saamval van die kraakbeenstruktuur van die strottehoof opgemerk nie. Leonard (1957) (1960) wys dat alle gevalle nie noodwendig akuut fataal is nie en suksesvolle behandeling is verkry deur die omgestulpte laringeale sakkies chirurgies te verwyder. Hierdie toestand asook kollaps van die larynx kan voorkom word deur vroegtydig chirurgiese regstelling van vernoude neusvleuels en verlengde sagte-verhemelte.

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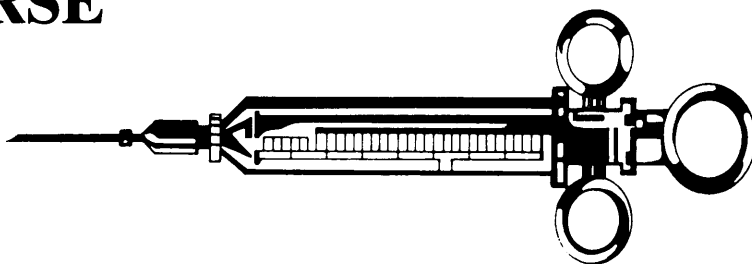


Wellcome

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4847

A CASE OF SUSPECTED CHLAMYDIAL MENINGEO- ENCEPHALITIS AND RETINITIS IN A HORSE



Class Case – H. Biggs B.V.Sc.V. (1974)

SUBJECT:

A twenty month old Thoroughbred colt (Persian Whistel – Tulle), weighing 340 Kg.

HISTORY:

This case came from a group of seven yearlings from the same stud in the Strydenberg district, Cape, that all showed symptoms of fever and mild to severe nervous disorders, of which four recovered entirely after showing transient fever and mild symptoms only; one remained blind in one eye; one displayed permanent ataxia in the hindquarters and the last (this case) remained blind in both eyes.

This particular case developed a fever of 41,8°C and was ataxic in fore and hindquarters. Treatment on the farm included ampicillin ("Penbritin"), isopyrin and phebuzone ("Tomanol"), Vit B, Vit B 12, hydrochlorothiazide ("Vetidrex") and cortisone. A left sided facial paralysis developed but this was a transient condition. Ataxia disappeared after one week but then first the right and then the left eye showed blindness.

CLINICAL EXAMINATION

Habitus good; no signs of ataxia; superficial lacerations over the bony protruberances presumably due to transportation of the blind animal. The colt was blind in both eyes using an obstacle course as a diagnostic parameter. Corneal and palpebral reflexes were intact.

PROVISIONAL DIAGNOSIS

The only possibilities at this stage were the differential diagnoses on the basis of the symptoms.

- (i) A disease of the **Equine Encephalitis Complex** (never recorded in R.S.A.).
- (ii) **Equine Encephalosis** (Mauritzfontein virus).
- (iii) **Nervous form of Rhinopneumonitis**.
- (iv) **Chlamydiosis**
- (v) **Equine Ataxia** (Wobbles) — ruled out by fever, blindness and obvious infectious nature of this condition.

SPECIAL EXAMINATION

Ophthalmic Examination

Direct and consensual pupillary reflexes were intact.

In the left eye there was a reduction in the number of retinal vessels radiating from the optic disc (retinal atrophy) as well as a few floating floccules in the aqueous humor.

In the right eye there was also retinal atrophy and a large number of floating granules and floccules in the aqueous humor. In addition a brown sheet-like fibrinous exudate partially obscured the optic disc.

Both nasolacrimal ducts were patent.

No corneal ulcers were apparent

Special Neurological Examination

No abnormalities were found, as far as was practically possible to perform neurological tests.

Serological Examination of Serum

Neutralizing antibodies against Equine Rhinopneumonitis were present (2,5 logs virus neutralized)

This is a low titre and too low to substantiate any clinical symptoms. No antibodies against Equine Encephalosis were neutralized.

Cerebrospinal fluid.

About 40 ml CSF were collected for clinical pathology, bacterial and chlamydial isolation and for viral serology.

Clinical Pathology: CSF normal

Bacterial Culture: negative

Chlamydial culture: positive

Viral serology: No antibodies against Rhinopneumonitis or Equine Encephalosis.

Clinical Pathology

BUN: 38,6 mg/100ml (Normal 10-20 mg/100ml). This may reflect (i) Mild kidney damage (ii) Dehydration — a common cause of elevated BUN. The horse became dehydrated and lost condition due to verminosis (found at autopsy although not reflected by clinical examination).

BSP: $T\frac{1}{2}$ = 5,89 Min (Normal $2,8 \pm 0,5$ min)

This mild elevation could be due to

- (i) Residual damage by migrating **Parascaris equorum** (found at autopsy)
- (ii) Chlamydial liver damage (Storz 1971)
- (iii) Dehydration



A view from behind the gynaecology department

SGOT: 112, mIU/ml (Normal 40-100 mIU/ml). The slight elevation probably due to liver damage although this is not a liver specific test in the horse.

Electrophoresis

ALBUMIN: 47% (Normal \pm 39%)

Slight elevation related to dehydration α 1 α 2 α 3 globulins: No deviations. B1 B2 globulins: No deviation. γ globulin: 14,8% (Normal \pm 22%)

Slight depression — known in (i) advanced nephrotic syndrome — no evidence in this case. (ii) malabsorption and malnutrition — could be linked to poor condition of animal in this case. (iii) hypogammaglobulinaemia — associated with severe depression.

TSP: 6,8g/100 ml — within normal limits A/G ratio: 0,89 (Normal 0,6) — however this is not significantly abnormal.

Conclusion to Clinical Pathology findings revealed Dehydration and Mild Liver Damage

TREATMENT:

Although the horse was given a poor prognosis the following therapy was adopted.

- (i) 300 mg Vit B1, i/m daily for four weeks.

- (ii) 1000 mg Vit B12 i/m weekly for four weeks.
 - (iii) 0,33 million units Vit A i/m administered once only.
- The therapy had no effect on the condition.

POST MORTEM:

The horse was euthanased for autopsy. Gross findings were:

(i) **Severe verminosis**

Stomach: Habronema musca ++++

Several nodules containing numerous parasites were present.

Small intestine: Parascaris equorum +++

Caecum and colon: Strongylus vulgaris +++ There was severe verminous arteritis due to migrating larvae of Strongylus vulgaris.

(ii) **Mild sero-fibrinous pericarditis** especially at the heart apex. 60 ml clear yellow fluid.

(iii) **Splenomegaly** - due to euthanasia

(iv) **Widespread petechiae**

(v) No gross CNS lesions observed.

(vi) Left stifle showed accumulation of yellow jelly like fluid.

CHLAMYDIAL ISOLATION

Brain, spinal cord, left and right vitreous fluid, pericardial exudate and kidney were all positive

BACTERIAL ISOLATION

Pericardial exudate positive for **Streptococci**

HISTOPATHOLOGY

CNS: Mild perivascular cuffing especially of meningeal blood vessels with lymphocytes and plasma cells.

EYE: Due to poor sectioning no pathological findings could be ascertained. However sections made available by Dr. I. du Toit of Stellenbosch through Dr. Pienaar of the Veterinary Research Institute from a case clinically similar to this and from which Chlamydia was isolated were studied with the assumption that certain histopathological similarities would be present. These sections showed retinal detachment, retinal congestion, severe focal round cell infiltration of the retina, degeneration and necrosis of the innermost retinal layers (ganglion layer and inner nuclear layer) and round cell infiltration of the ciliary body and of the vitreous humor.

DIAGNOSIS:

Suspected Chlamydial Meningo-Encephalomyelitis and Retinitis Leading to Blindness.

DISCUSSION:

Final proof can only be approached when such isolates are inoculated into susceptible horses and cause a similar syndrome.

Considerable controversy surrounds the significance of **Chlamydial** isolation.

Chlamydiosis itself in horses is poorly documented, the following are however recognised conditions.

- (a) Conjunctivitis (Dr. Pienaar, Vet Institute)
- (b) Abortion and birth of weak foals (Drs. Schutte and Pienaar, Vet. Institute)
- (c) Pneumonia (Popovici and Hiastru 1968)
- (d) Hepato - encephalopathy (Blanco 1968)

On the basis of observation of other species *Chlamydia* certainly has all the qualities necessary to produce an encephalomyelitis similar to that described in this case. If the aetiological agent was not *Chlamydia* it was most likely to have been caused by an unidentified agent (presumably viral) which is not recognized at present as a cause of encephalitis, myelitis, meningitis and retinitis in horses. This assumption is made on the basis of elimination of the various differential diagnoses.

DIFFERENTIAL DIAGNOSIS:

- (i) **Rhinopneumonitis:** Jackson and Kendrick reported clinical signs ranging from mild ataxia to severe paralysis and enforced recumbency with histopathology revealing a perivascular round cell infiltration in the meninges and brain substance in mares that had aborted. The rhinopneumonitis virus was serologically negated as an aetiological agent in this case.
- (ii) **Equine encephalosis:** Nervous symptoms and virus characteristics of this disease are described by Erasmus, Adelaar, Smit, Lecatsas and Toms. The negative serology results excluded the equine encephalosis virus as an aetiological agent.
- (iii) **Disease of the Equine Encephalitis Complex:** These have never been recorded serologically in RSA. They are all characterised by explosive development in susceptible populations with high mortality.
- (iv) **Rabies:** Manifested clinically by aggressiveness and muscular tremor and is constantly fatal.
- (v) **Streptococcal meningitis** in view of pericardial exudate. Ruled out due to histopathology (lymphocytic infiltration) and due to no response to antibiotics.

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Personal communication – Dr. B.J. Erasmus, Dr. A.L. de V Pienaar, Dr. A.P. Schutte (Vet Research Institute)

Dr. C. Button and Dr. H.P. van Niekerk are thanked for their assistance.



A group of 3rd year Onderstepoort students examining the stethoscopes presented to them by Elanco, a division of Lilly Laboratories (S.A.) (Pty.) Ltd.

O.P. RES — THEN AND NOW

Dr. R.K. LOVEDAY.

The first students' hostel at OP was completed about 1924 and until recently housed the Onderstepoort post office. As one faces the old brick building from under the flagstaff in front of the former administration block, the dining hall may be seen on the right hand side. This hall was the Institute staff restaurant until a few years ago. Bedrooms for about a dozen students are arranged around a quadrangle at the back of the building. Across the tarmac road on the eastern side of this old hostel may be seen Sir Arnold Theilers' old house - with a chimney in every room! In the backyard, the corrugated iron stables for the "Old Mans" horses and trap are still used as storerooms. This house was the women's residence for a while until the end of 1971.

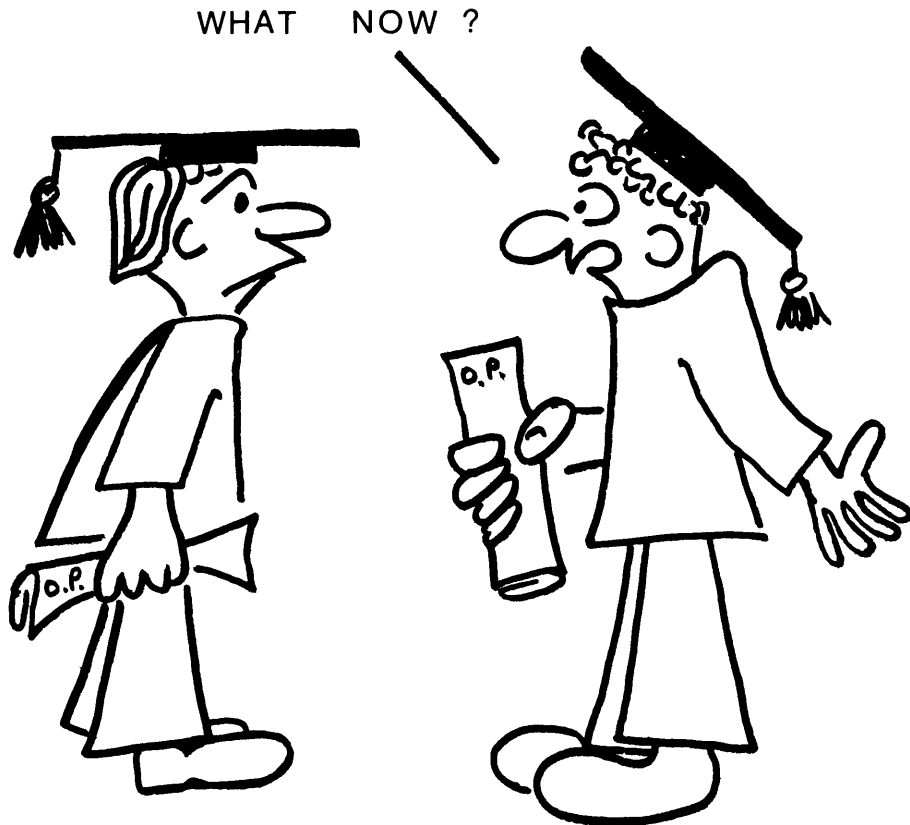
Four of five years later the "Old" hostel (as it is called today) was occupied, together with the present kitchen block and a small diningroom, still to be seen as the centre portion of the present diningroom, with the fireplace or its western wall. This accommodation was only increased twentyfive years later, when the "new" hostel and the commonroom block came into use, and the diningroom was enlarged in a northerly direction. Further growth brought the "New, New" hostel ten years later. This time a further small southerly extension was made to the diningroom and the kitchens were extensively remodelled and modernised. This process continues all the time, recent examples being the installation of automatic dish-washing facilities, a new laundry, the cafeteria self-service system and the conversion of the old anthracite stoves to oil burning.

In the old days the housefather was generally a young bachelor who lived in the hostel with the students, and, like them, enjoyed having two rooms, one a study, the other a bedroom. Up to 1938, due to the small numbers of students in faculty, most senior students had two rooms. Student numbers fell to their lowest level during the depression years and in 1931 there was exactly ONE graduate. This dearth of students was to hamper veterinary progress in S. Africa for many long years thereafter.

Sports facilities can hardly be said to have kept up with the increased student numbers. The present rugby field was begun in 1939, when it was handplanted by the students themselves, using a donkeydrawn single furrow plough. The tennis courts had their netting wire renewed a few years ago and apart from the billiard and table tennis facilities, nothing much else has happened. We hope for better days in this area!

OP dances were far grander affairs thirty years ago than the somewhat informal happenings of today. The staff turned out almost to a man (with their wives, of course) and a very good time was had by all. Everyone wore evening dress and the "pub" was located in the downstairs northern side bathroom of the old hostel and was entirely FREE. You paid for your ticket (about R3,00, I think it was) and you could drink as much of anything you fancied from the extensive range of spirits, wine and beer on hand. At about 10.30pm. everyone sat down to a hearty supper at the well-laden tables in the lounge (the old hostel library), the meal being enlivened by much enthusiastic singing of OP ditties by staff & students together. Most of the food was prepared by the students during the afternoon. As there were so few motor cars those days, a special municipal bus was hired to bring students and partners to and from the dance — but you had to walk home if you missed your "lift" back from town afterwards!

Students don't really change greatly over the years, in my opinion. Despite the heavier work load and greater sophistication, the essentials appear to remain much the same, The isolation of faculty from the main campus still cuts the student body off from the main cultural stream, and leads to a perennial shortage of "asters" too, although this situation appears to be improving. The "Bull sessions so invaluable a part of University education, seem to be as popular and as informative as ever they were-and here one learns, what "life" is supposed to be all about. Long may they continue into the small hours of the morning. Ethanol still has the power to bring out the best voice in some-often at an ungodly hour of the night, while this same rather neurotoxic substance still generates an overwhelming curiosity in the fire fighting equipment of res. in some otherwise quite undemonstrative types. Nothing changes basically very much from years gone by. Why should it? This may be time of human nature, but "res" has become not only much bigger and more comfortable but also more expensive too. The food has improved very greatly indeed over the years. Despite all this, as in other parts of the world, there is a tendency for more students to live out of the hostel than ever before. Perhaps not a bad thing, provided junior unmarried students spend at least their first one of two years living in res., as is customary in a university like Cambridge. What do you think?





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