(1)

Histories for Wednesday Slide Conference
4 October 1967

191 Case I - AFIP Acc. No. 1240290 - Several dogs believed to be litter mates were given intramuscular injection of experimental drug and then were euthanized.

195 Case II - MRNL 17242 - Left kidney was removed from a 7-year-old Boston terrier.

192 Case III - P 53 - A 6-year-old spayed female dog from Colorado developed a fever and became lethargic. After 3 days the dog was seen by a vet and Pen-Strep therapy was started, but the dog became worse. Radiographs revealed many densities in the lung. On the 8th. day, icterus developed and the dog died the next day. Necropsy revealed lung which contained multiple randomly scattered yellow-gray, firm nodules varying from 3-4 cm. in diameter. Blood stained mucoid material oozed from the cut surface of these nodules. Both kidneys contained numerous 1-3 mm. diameter gray nodules.

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P.S. We are sending two sets to Ft Detrick this year with the understanding that only 1 set will be kept for your teaching file.

(W): will keep this set

RESULTS OF WEDNESDAY SLIDE CONFERENCE
4 October 1967

Case I - AFIP 1240290

Incidental finding in skeletal muscle in dogs, believed to be litter mates from Indiana. All sections contained Trichinella spiralis encysted in skeletal muscle. Some sections of the cyst showed only a wide hyaline wall containing one to several large cells with vesiculated nuclei. The cells are thought to arise from the skeletal muscle nuclei. The hyalin wall forms on the sarcolemma. Without serial sections, we thought for some time these large cells inside the thick hyalin wall (without larvum visible) represented a protozoan parasite. Some cysts were surrounded by granulomatous inflammation.

Some sections contained Sarcocystis encysted in the muscle fiber. This was reported only as recently as 1966. (Jour. of Protozoology, Vol. 13, #4, P. 531, 1966)

Case II - MRNL 17242

The left kidney surgically removed from a 7-year-old Boston terrier contained an undifferentiated carcinoma (with foci of squamous metaplasia) according to Major Tom Bucci. The kidney measured 7.5 X 4 X 4 cm and contained numerous foci of neoplastic tissue. No other organs were involved. Some thought this was a transitional cell CA but others admitted they didn't know. Some wondered if all of the metastases plus areas of [illegible] (infarction?) might [illegible] origin outside the kidney. No mention of renal pelvis involvement was made. (Hope we get a follow up on this one)

Case III - P53

The diagnosis for the 6-year-old spayed female dog from Colorado which contained nodules in the lung and kidney was granulomatous nephritis due to Geotrichum candidum. The lung was extensively involved and granulomas were found in practically every organ including the eye and brain. Pure cultures of fungus were grown from the lung and bronchial node by CDC in Atlanta.

The granulomas tended to form around and in glomeruli. Some colonies were present with no inflammatory response. The yeast forms of the fungus possessed a basophilic central body surrounded by a clear space which was in turn surrounded by a thin cell wall. The organisms are pleomorphic with round, oval, elongated, and even septate forms present. (Dr. Raymond Reed from the University of Arizona noted the budding forms remaining together to form pseudohyphae. He mentioned that Crytococcus and Candida also may do this.)

References:

1. W.W.L. Chang and L. Buerger: Disseminated Geotrichosis. Arch. Int. Med. 113:356-360 (1964).

2. W.K. Nasser and W.J. Daly: Bronchopulmonary Geotrichosis. J. Indiana State Med. Assn.,58, 1329-1332 (1965).

3. J.D.Ross, K.D.G. Reid, and C.F.Speirs: Bronchopulmonary Geotrichosis with Severe Asthma, Brit. Med. J., Vol. 1, 1400-1402 (June 1966).

4. J.W.Carmichael: Geotrichum candidum Mycologia,49:820-830 (1957).

SEE YOU NEXT WEEK!!!!!

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We all tend to have a concept of cirrhosis which varies from the truth. The Fifth Pan American Congress of Gastroenterology held in Havana, Cuba, in 1956, decided on five anatomic criteria for cirrhosis:

a. All parts of the liver are involved, without necessarily affecting each lobule.

b. Cellular necrosis is present at some stage of the disease.

c. Nodular parenchymal regeneration (there may be collecting sinuses but there are no central veins).

d. Diffuse fibrosis.

e. Disorganization of the lobular architecture with connective tissue bands uniting centrolobular zones with the portal tracts.

The 2 1/2-year-old female Norwegian elkhound with weight loss, vomiting, and icterus had histoplasmosis (easily seen with our silver stained slide). There was also histologic involvement of the lungs, kidneys, spleen, and lymph nodes. We agree with Doctor Squire when he says that this case shows the severe neoplastic-like proliferation of histiocytic cells occasionally seen in dogs with histoplasmosis.

After the etiology was disclosed, some wondered about the possibility of a myelogenous neoplasm and a concurrent fungal infection. Most felt the large spaces were dilated sinusoids.

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April 17th conference has been moved up to April 10. There will ... ence on April 17 (Easter vacation).

[illegible]

18 October 1967

Case I - Dog - Tissue from a 6-year-old chow dog which was euthanized after an illness of approximately 2 months.

201 872 Case II - This lesion of [illegible] is commonly induced and diagnosed grossly, but few such lesions are ever examined histologically.

202 Case III - HT 17532 - Greenish lesions found in 3 mesenteric lymph nodes from a cow slaughtered in poor condition. Morphologic and possible etiologic diagnosis.

203 Case IV - Mamu - 1234240 - A pedunculated lobulated mass removed from the mouth of Rhesus monkey.

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Results of Wednesday Conference
18 October 1967

Case I - 216 - Epididymo-orchitis due to canine distemper virus. Early phase of dog's illness was characterized by conjunctivitis, anorexia, and temperature up to 103.6°F. Bilateral corneal ulcers and generalized ataxia developed three weeks after onset of illness. The progressive ataxia necessitated euthanesia. There was a classic distemper encephalomyelitis with inclusions.

In the testicle, there was degeneration of germinal epithelium and Sertoli cells in many seminiferous tubules. Syncytial phagocytic giant cells were present in some tubules. Cytoplasmic and intranuclear inclusions were present in some germinal and many Sertoli cells. There was interstitial focal infiltrate of neutrophils and mononuclear cells in the testicle and an interstitial infiltrat of lymphocytic plasma cells and macrophages in the epididymus. Some epithelial cells of epididymus contained inclusions too.

Lt. Colonel Garner mentioned distemper inclusions can be found in epithelium of skin adnexa and bile duct epithelium and other epithelial surfaces. Some people felt in addition to degeneration there was coagulation necrosis of Sertoli and germinal cells in some tubules.

Case II - Induced lesions in upper eyelid of Macaca mulatta was a tuberculin reaction. Could be characterized as lymphocytic blepharitis. Dr. Kinard said two weeks previously this monkey was negative. The lesion here is 48 hours old. In a more severe reaction Dr. Kinard said necrosis would be more extensive. Some people feel intradermal injections in the abdomen are more sensitive than the eyelid where often the injection is actually subcutaneous instead of intradermal. The lymphocytes and plasma cells along with edema are important inflammatory components of this reaction. In a questionable reaction, an abdominal reaction could be easily biopsied. If the infiltrate is one of neutrophils a dirty needle can be suspected. (The vacuolated epithelial cells in the conjunctiva were thought to be goblet cells.).

Case III - MI17552 - Caseous greenish lesions found in three mesenteric lymph nodes from a cow slaughtered in poor condition. Diagnosis: Eosinophilic or parasitic granuloma due to a pentastome. The stain was Giemsa to bring out eosinophils present. The free and phagocytized green pigment was not identified.

Dr. Migaki showed a degenerating pentastome in his section but mentioned that often they cannot be found to confirm the diagnosis. Calcification may occur to confuse inspectors with T.B. lesions. The pentastomes may be found in the liver and bronchial lymph nodes, too. Dr. Migaki felt that this parasite was probably not the cause of the cows poor condition.

Reference: Chandler, Asa C. Introduction to Parasitology, 9th ed. John Wiley and Sons, Inc., New York, 1955. Pg. 544-550.

Bonus - AFIP 1254240 - Mass removed from mouth of Rhesus monkey attached just posterior to upper incisors on roof of mouth was called a fibroma of gingiva or fibromatous epulus. (There is difference of opinion in terminology but basically it is a fibroma). Most of the mass was made of collagen - mature and immature - very vascular. The epithelium was acanthotic and contained some micro abcesses. Some areas of keratinization and keratin pearls were present. Lymphocytic and plasma cell infiltrates were present in some areas. Russell bodies (degenerating plasma cells) were also present.

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(3)

HISTORIES FOR WEDNESDAY SLIDE CONFERENCE

25 October 1967

Case I: S-3-67 (2 slides). Several surgical specimens were removed from the right scapulo-humeral areas of a 2½ year old male black Labrador retreiver. The surgical description was a large growth involving the muscle both above and below the joint.

Case II: 138-67-65. Pieces of liver and kidney were submitted for microscopic examination from an 8 month old beagle.

Case III: 34-219. Several six-month old female rats were fed a standard basal laboratory diet plus a plumbum salt. During the study clinical examinations including physical, biochemical and urinary determinations failed to reveal any appreciable differences between the experimental and control groups of rats.

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Results of Wednesday Slide Conference
25 October 1967

Case I S-3-67 The surgical specimens removed from scapulohumeral area of a 2½-year-old male black Labrador retreiver was diagnosed as a synovioma. Spindyloid pleomorphic cells made up most of the mass. Some multinucleated giant cells were present. The semicircular section with large area of necrosis aroused most of the discussion as to whether portions of it contained neocapillar or hemorrhage into the tumor. Major Persing said there was no chance for a follo up as the owner had the dog cremated.

Case II 138-67-65 Liver section from an 8-month-old beagle was infectious canine hepatitis. The pup was not vaccinated. The dog was ill for no longer than 12 hours before death. Poor preservation was due to the tissue being left outside over night during the winter and then being put in formalin the next morning.

Grossly the liver was turgid and mottled red. The lesion in the liver was one of large areas of centrilobular necrosis and hemorrhage. Some intranuclear, slightly basophilic inclusion bodies were seen in hepatocytes adjacent to the necrotic areas.

Case III The 6-month-old female rat being fed a lead salt had eosinophilic intranuclear inclusions within many epithelial cells of the convoluted tubules. These intranuclear inclusions were not in controls. Dr. Shott of Hazelton Laboratories was concerned about the presence of some giant epithelial cells of the convoluted tubules. These were not necessarily cells which had inclusion bod He will give us a reference next week on tubular adenoma in the rat due to lead. Whether these giant cells are preneoplastic or degenerative may be solved as they plan to destroy more rats in the future as part of this same project to determine THE LESIONS OF CHRONIC LEAD POISONING.

Lead Poisoning

(4)

Histories for Wednesday Slide Conference
1 November 1967

Case I - 67-4 - Spontaneous lesion, duration and rate of development not known, young adult mongrel laboratory dog.

Osteo condroma
Dyschondroplasia JK

Case II - 67153 - Five-month-old female collie. The dog experienced several episodes of gingivitis, lameness and pneumonia. It was killed due to general debility during one episode of pneumonia.

Case III - 67-1274 (B5) - Five-year-old rhesus male became cyanotic and dropped dead shortly after being transferred to another cage. No previous clinical signs were noted. Tissue submitted: right diaphragmatic lobe of lung and right cardiac ventricle.

Lung Dif.
R Vent Hyper
Basophilic art

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5317

201

Results of Wednesday Slide Conference
1 November 1967

Case I - The bony enlargement in the young adult mongrel dog falls into the realm of dyschondroplasia according to terminology of Jubb and Kennedy. The contributor's diagnosis was osteochrondromatosis or enchondromatosis of the rib (apparently osteochrondroma is very similar). Multiple nodules were present on several different ribs with no particular relationship to the costochondral junction. At least one rib contained 2 nodules.

Case II - 67153 - The eye from the 5-month-old female collie was a fundic ectasia. Also noted were granular degeneration of lens nucleus, cyst on posterior surface of ciliary body and cartilagenous metaplasia of skeletal muscle. A rounded up section of retina on the side opposite the ectasia was felt to be a folding artefact.

References: Donovan, E.F. and Wyman, M. Ocular Fundus Anomaly in the Collie. JAVMA, 147: 1465, 1965

Roberts, S.R. Congenital Posterior Ectasia in the Sclera in Collie Dogs. Amer. J. Opth., 50: 451, 1960

In light of this dog's repeated gingivitis, lameness and pneumonia, I will add this reference: Lund, John E. et al. Cyclic Neutropenia in Grey Collie Dogs. Blood, 29, No. 4, Part 1, April 1967.

Case III - The 5-year-old rhesus male which became cyanotic and dropped dead after transfer to another cage had an old infarct of lung and right ventricular hypertrophy. The monkey was born in captivity and had never shown previous signs of illness. At necropsy, the right atrium was 4 times larger than left. The right ventricle was hypertrophied. There was an occluding thrombus in the right pulmonary artery near its division at the common pulmonary artery.

Each lobe of the right lung had an elongated infarct along the lateral border (white periphery, depressed dark red center). Some mite lesions were present.

In addition, it was felt that arteries in the lung had undergone medial hypertrophy and subintimal sclerosis (evidence of hypertension). The myocardial fibers which were basophilic and had narrow hyperchromatic nuclei were thought to be insignificant (seen before in normal hearts, artefact?). The hypertrophy was evidenced by enlarged vesiculated nuclei and enlarged fibers (when compared to myocardial fibers of left ventricle).

Cause of death was thought to be stress. Monkey handled very little previous to time of transfer. Cause of thrombus not determined.

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P.S. Reference pertinent to lead inclusions in rat kidney last week (Hazelton Lab. - 34-219). Hass, George M., et al. Relations Between Lead Poisoning in Rabbits and Man. Amer. J. Path., Vol. 45, No. 5, Nov. 1964, pg. 691.

Note MISSING 8 Nov 67 Conference

History for Wednesday Conference
15 November 1967

Case I AFIP 1206678 (2 slides) An 11-year-old female Boston Terrier had been anorexic for 5 days and vomited a dark brown liquid for the last 3 days. After hospitalization the dog did not rally to the therapy and was euthanized 5 days later.

210

Case II A-527-67 A tumor from the nose of a Chinese hamster.

211

Case III 67-423 Adult dog with a history of chronic cystitis and hematuria.

212

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Results of Wednesday Slide Conference
15 November 1967

210 Case I - 1206678 The 11-year-old female Boston terrier had amyloid deposits in the kidney and interacinar areas of the pancreas. (Primary amyloidosis) In the kidney it was in the glomeruli and interstitium as focal deposits, especially in medulla. Much proteinaceous material in renal tubules and Bowman's spaces. The BUN a few days prior to euthanasia was 77 mg. %. In pancreas the amyloid outlined many acini and surrounded vessels between acini. There was little involvement of islets.

The hyaline material was PAS positive, metachromatic with crystal violet, stained with congo red which became anisotropic inpolarized light. (therefore amyloid).

211 Case II - A-527-67 (H & E) The tumor from the nose of a Chinese hamster was granulomatous staphlococcal dermatitis (botryomycosis) probably the result of a fight wound. Staphlococci were not cultured from this case but were cultured from one identical to it according to Dr. Laurnie Nelson He says this type of infection is rather common in their colony. There was hematopoiesis in the liver section (normal).

212 Case III - 67-423 The mongrel dog with a history of chronic cystitis and hematuria of several months duration had a mucinous adenoma of the urinary bladder

The single papillary projection on the ventral surface of the mucosa near the trigone was seen on a radiograph. Surgery consisted of removing the papilla at its base without resecting any of the smooth muscle. The hematuria subsided in a short time and there has been no recurrence for 1-1/2 years.

We had the biopsy specimen to examine. The basophilic material was mucicarmine positive. The trabecular bone was felt to be a metaplastic change.

Some felt this was an adenocarcinoma but only follow-up proved them wrong as evidently it would be difficult to differentiate the benign from the malignant in this case. One true pathologist said to call it malignant: if the tumor does not recur then the clinician is a hero - if it does, then he would say, "I told you so".

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Results of Wednesday Slide Conference
22 November 1967

Case I 1260771 The bovine with a chronic wasting disease had numerous cysts containing Besnoitia besnoiti in the dermis. The epidermis was acanthotic. The bovine was from Africa. Keratin horns, tactile hairs, absence of hair along one border and the presence of mucous glands indicated the tissue was lip. Also present was a granuloma surrounding an awn, Sascocystic bovis, and 2 nematodes in the dermis (I'll try to get identified). Reference: Levine, Normal D., Protozoan Parasites of Domestic Animals and Man, Burgess Publishing Co. Minneapolis, 1961. P. 337-339.

Case II MI 17616 The mediastinal lymph node from the adult female bovine that had several 1-2 cm. diameter nodules in the lung contained transitional cell carinoma. The primary in the urinary bladder measured 5x6 cm. Other metastases were in the iliac nodes.

This case was from Nebraska. Dr. Migaki said he had seen two similar cases just a few months apart. The cell morphology and site of primary (urinary bladder) were the same.

Case 1633-6 The liver from the African black-footed penguin (Sphernicus demerus) had multiple focci of hematopoiesis and exo-erythrocytic forms of Plasmodium elongatum. The parasite was identified by Dr. Herman at Patuxent Wildlife Research Center and has been transmitted to white Peking ducks in which it is highly fatal.

Case IV Bonus 1244532 The 3-year-old female domestic cat with a debilitating disease of 4 weeks' duration (not 4 months as I stated in history sheet) had extramedullary hematopoiesis in the liver, spleen and iris. If you are wondering about bone marrow it was not available to examine. Similar lesions were present in the lung and kidney. Some felt it might represent myelogenous leukemia. (Apparently M. D. pathologists at AFIP have seen hematopoiesis in the iris.) Cause of the cat's death was not determined.

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(8)

History for Wednesday Slide Conference
29 November 1967

Case I - X3299 - Adult French poodle dog became depressed, ataxic and started vomiting. Temperature was 100°F. Died within 48 hours after initial signs.

Case II - 51067-18 - Young bird raised at a local rod and gun club. There were numerous losses in the flock.

Case III - S-1-67 - A tumor removed from the neck of a 3-year-old male, miniature poodle. It was thought to be a dermoid cyst of a few months duration.

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Results of Wednesday Slide Conference
29 November 1967

Case I X3299 The adult French poodle dog which died within 48 hours after becoming depressed, atoxic and vomiting had nephrosis due to ethylene glycol ingestion (calcium oxalate crystals in renal tubules). The crystals were arranged in a fan-shaped pattern within tubules and easily seen in polarized light. The dog drank antifreeze a short time before showing signs.

Oxalate crystals may be found in otherwise normal kidneys in swine and cattle. There presence is associated with grease wood and halogeten plant poisoning. A physician present said patients in acidosis may also have oxalate crystals in renal tubules.

To demonstrate oxalate more conclusively (sulfa crystals are soluble in aqueous solutions) an incinerated section shows oxalate crystals as white which, when covered with hydrochloric or sulfuric acid, form bubbles. Burn at 450° F. $Ca\ C_2O_4 \longrightarrow Ca\ CO_3 + CO$ $Ca\ CO_3 + H_2\ SO_4 \longrightarrow Ca\ SO_4 + CO_2 \uparrow + H_2O$

I brought up the giving of ethanol (gin, etc.) to animals that have drunk antifreeze. Competitive inhibition of conversion of ethylene glycol to oxalate occurs in liver so it is excreted as is and not converted.

Case II 51067-18 A young quail with histomoniasis of liver and caecum. There were numerous birds affected. There was a focal necrotic hepatitis with a moderate inflammatory response and a marked necrotizing granulomatous typhilitis. Much granulation tissue replaced wall of caecum. Numerous protozoa were present in the wall of the caecum and in the liver.

Case III S-1-67 The tumor from the neck of a 3-year-old miniature poodle was a basal cell tumor. Major Persing felt the tumor was unusual because of the cyst which contained a proteinaceous fluid before processing. Some felt it may represent a dilated sweat gland. No secretion was present in other parts of the tumor. The cystic basal cell tumor is to be expected in the cat but is unusual in the dog.

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Histories for Wednesday Slide Conference
6 December 1967

Case I - G-10-67 - Dog. — Rabies

Case II - 66141 - Dog presented with non-specific pulmonary and intestinal symptoms. Failed to respond to therapy and was euthanized. Histoplasmosis

Case III - Goat 30 - 3 slides - 7-16-67; 7-24-67; and 7-26-67

13 July 67 - WBC 7,000 Hct. 13% Hb4G%
17 July 67 - Hct. 14% Hb4.5G%
24 July 67 - WBC 5,050-HCT. 15%
Neut. 48%
Lymph 45%
Eos. 3%
Bas. 4%
26 July 67 - WBC 5,500 Hct. 21%

Mature male goat arrived 6 June 67 and was put with 12 other male goats for use in an antibody study (glycopeptide antigen given IM on 8 June 67 and 28 July 67).

On 10 July 67 goat was lame; a firm mass about 5" in diameter was present on the posterior border of the right triceps brachii and overlying ribs 3-6. X-ray showed mass to have same density as muscle and no masses were seen in lung. Attempts to aspirate mass on 17 July were not fruitful.

On 18 July 67 he was given 280cc of compatible blood.

By 26 July 67 he was extremely emaciated with his hair falling out by the handful (Sounds like it was being helped out). Since this time the goat has rallied to TLC (tender loving care) and isolation.

1. Morphologic diagnosis? None
2. Stain used for slide 7-17-67 and what does it indicate? New methylene
3. What would account for staining differences between 7-24-67 and 7-26-67? Stai
Both taken from external jugular vein, put in standard EDTA tubes, then smears were made.
4. Name 3 possible causes of hematologic findings.

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Results of Wednesday Slide Conference
6 December 1967

Case I G-10-67 Encephalitis, canine, due to rabies virus. The section is from a 3-month-old mixed dog--it was fixed in Zenker's just after it died.

Rabies is a comman problem in parts of Egypt (delta region). The pup had bitten an embassy child in Cairo, Egypt. Six days later the pup was kept for 10-days' observation--nothing happened. Sixteen days later another child in the same family was bitten. This time had high-pitched bark, funny stare and bit visciously. It died 3 days later. Owner said that before pup had bitten first child a stray dog had bitten the pup on the ear. The pup died 30 days after this only known exposure. The first child was not treated--second was and is okay seven months later.

In addition to encephalitis there was a myelitis and the parotid salivary gland had a mild diffuse interacinar infiltrate of lymphocytes. Inclusion bodies were present in ganglia in the urinary bladder, stomach, parotid salivary gland and gasserian ganglion. These also had Babe's nodules.

Case II 66141 The dog with non-specific pulmonary and intestinal symptoms had chronic lympadenitis and adrenalitis.

A GMS stained slide is included this time. The organisms were not easily seen on H&E. Histoplasma capsulatum was cultured from the lymph nodes and adrenal gland.

The treatment of choice is amphoteracin-B but this is highly nephrotoxic. The nephrosis is accumulative and irreversible. The tubular epithelium becomes basophilic and then amorphous casts are formed according to Dr. Reed who has monitored experimental dogs weekly. He also said Aspergilla, Histoplasma and Blastomyces are more susceptible to amphoteracin-B than Coccidiodes.

Case III Goat 30 The goat which had an anemia that responded to tender loving case had a macrocytic, normochromic anemia according to Dr. Leonard Marcus. There was anisocytosis, poikilocytosis, polychromasia, basophilic stippling and occasional Howell-Jolly bodies. Only one nucleated RBC in 100 WBC's on 7-24-67 (Wright's stain).

He did not determine the cause of the anemia. The stain used on 7-17-67 was new methylene blue to demonstrate the reticulocytes.

The blood smear 7-24-67 was made from blood in EDTA tubes for 6 hours at room temperature. This caused poor staining quality, refractile margins of many RBC's and ghost and smudged WBC's.

The three causes of hematologic findings are lead poisoning, neoplasia (of bone marrow), anaplasmosis and autoimmune anemia according to Dr. Marcu He could not substantiate any of these. The mass on shoulder was felt to be a hematoma.

In addition Schalm states that macrocytic anemia due to maturation arrest is due to B_{12}, folic acid or niacin deficinecy.

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Histories for Wednesday Slide Conference
13 December 1967

Case I 1039646 224 Experimentally produced lesion in a rat.

Case II P-58 Erom a 4-day-old Hereford heifer that was "paralyzed" since birth. The lips and left ear were flaccid and it could right itself to sternal recumbancy from its right but not its left side. No palpebral reflex elicited. The owner reported that 6 or 7 calves born during the spring from 90 cows were similarly affected. The cows were healthy.

Case III MRNL 17349 Five-year-old human patient with leukemia (treated with chemical oncolytic agents and radiation). Complications included varicella pneumonia. Lung radiograph on 7 November 1966 was clear. On 10 November there was a "generalized infiltration". Death occurred on 18 November 1966.

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Results of Wednesday Slide Conference
13 December 1967

Case I 1039646 The experimentally produced lesion in the rat was pneumonitis due to Pneumocystis carinii. The inflammatory response was not marked. The alveoli contained foamy material. A GMS of this slide is included this time. The rat was given cortisone to induce the lesion.

Case II P-58 The 4-day-old Hereford heifer had encephalitis due to Toxoplasma gondii. There was marked adventitial cell proliferation and reactive endothelium of vessels in and around the malacic focus. The cellular infiltrate was felt to be mainly histiocytes (gitter cells, too). Several toxoplasma cysts were present. Several swollen axons also present.

The outer granular cell layer was prominent in cerebellar folia (not to be mistaken for meningitis).

Case III MRNL 17349 The five-year-old human patient with leukemia had been treated with prednisone, nitrogen mustard and 3360 r. The diagnosis was interstitial pneumonia associated with Pneumocystis carinii. Hyaline membranes were present lining many alveoli; some wondered if the child had been on a respirator because of this.

With the GMS numerous intra-alveolar organisms could be seen. These were round structures about the size of RBC's; many were in clusters. Few, if any, were in macrophages. Within some of these could be seen black specs (nuclei).

Doctor Esterly presented the morphology of the organism as seen with GMS. In a light stained preparation apposing parentheses as well as multiple bodies with halos may be seen within the round structure. The GMS is the best stain to demonstrate Pneumocystis in smears and sections.

If smears are stained with Giemsa, then the organisms appear in clusters of eight nuclei.

LTC Garner mentioned we should be on the look out for this condition. If you are like me, you only see what you know. They have been demonstrated in rats, mouse, guinea pig, rabbit, dog, goat, sheep, cat and monkeys.

(1) Reference: Frenkel, J. K., et al, Latent Pneumocystis Infection of Rats, Relapse, and Chemotherapy, Laboratory Investigation, Vol. 15, No. 10, 1559-1577.

(2) Reference: Esterly, James A. and Nancy E. Warner, Pneumoncystis carinii Pneumonia, Archives of Pathology, Vol. 80, Nov. 1965.

C. S. Patton

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Note Missing 3 Jan '68 conference

(12)

Keep

Histories for Wednesday Slide Conference
10 January 1968

Case I - 17719 - A 7-month-old female pig was slaughtered in good condition. The mandibular lymph node was enlarged with no other lesions seen in the carcass. What is possible etiologic agent?

Case II - X2998 - Mixed breed of dog with a unilateral mandibular swelling.

Case III - 1213715 - An 8-year-old foaling mare was euthanized on the 6th. day of an acute febrile disease. Within 3 days after onset, she was markedly cachectic. Hemorrhages in the conjunctiva were seen on the 3rd. day as well as a muco-sanguinous nasal discharge. The muzzle was edematous and turgid.

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Results of Wednesday Slide Conference
10 January 1968

Case I 17719 The 7-month-old pig in good condition with the enlarged mandibular node had a focal necrotic lymphadenitis due to Streptococcus pyogenes. Dr. Imes mentioned that this is a fairly common condition (5% of pigs affected) and therefore a costly one as often the heads are condemned. Lancefield group E is most often incriminated. The organisms are thought to enter via the tonsils from contaminated food or water. Experimentally the organisms are not pathogenic if given intravenously.

Case II X2998 The 8-year-old mixed breed of dog with the mass envolving the mandible caused a lot of discussion. Dr. Street has had many people examine the tumor with as many diagnoses rendered. Differentials included adamantoma, squamous cell carcinoma or mixed salivary gland tumor. A dental pathologist (human) at AFIP preferred to call it a squamous cell carcinoma of undetermined origin. Some felt if it were squamous cell carcinoma then there would be metastases to mandibular nodes and lung, which there were not. Since no one seems to really know we'll leave this one to your conscience, unless I find out anything later.

Case III 123715 The 8-year-old cachectic foaling mare which was euthanized after 6 days of an illness had equine infectious anemia. There was a mild mononuclear proliferation in the liver in addition to an increase in hemosido containing macrophages. Siderocytes were present in many distended centrilobular veins.

Here are two rather recent references:

1. Ditchfield, J. Equine Infectious Anemia - A Review of the Disease and Diagnostic Tests Canadian Vet. Jour., December Vol 8, No. 12 p 273-278.
2. Ishii, Susumu, Equine Infectious Anemia or Swamp Fever in Advances in Veterinary Science 1963, Vol. 8, p 263-298 Academic Press, New York and London.

P.S. Nematode in dermis of Case I 1260771 on 22 Nov 67 has been identified as Gongylonema sp.

CLARK S. PATTON
Cpt. VC, USAR
Vet. Path. Div.

(13)

Histories for Wednesday Slide Conference

17 January 1968

Case I 36-648 A dog was placed on a 90-day toxicity study. Lab. Findings were as follows:

Hematology

	Date 5-13-67	6-26-67	8-15-67
Cell Vol. (%)	50.0	44.0	37.0
HGB (g/100 ml.)	17.0	14.6	12.7
RBC X 10^6 (per cmm.)	6.72	5.13	4.65
WBC (per cmm.)	23,800	21,900	47,800
Myel. + Meta. (%)	0	0	0
Juv. + Band (%)	0	1	3
Seg. (%)	83	87	86
Lymph. (%)	17	9	11
Mono. (%)	0	3	0
Eosin. (%)	0	0	0
Baso. (%)	0	0	0

At necropsy approximately 15 " of the middle portion of the jejunum was markedly hemorrhagic and the caecum had completely invaginated into the colon.

Case II 685-66-88 This Wooly monkey was a tenant of the Baltimore Zoo. It was given to the zoo by a private owner and was in a state of malnutrition at that time. It died 7 days later.

Case III 1784 An ulcerated tumor measuring 1.5 x 2 x 2.5 cm was adherent to the 2nd digit of the left hind foot of an 11 year old female collie. Radiographs revealed localized osteolysis and clear lung fields. The popliteal node was enlarged.

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Vet. Path. Div.

(A)

Results of Wednesday Conference
17 January 1968

232* Case I 67-1247 The (beagle) dog put on the 90 day toxicity study was thought to have amyloidosis of the spleen. The hyalin material around the follicles was not characterized histochemically. The contributor felt the amyloidosis (which was not present in adrenal, liver or kidney) was secondary to chronic enteritis. Scattered coccidial schizonts were found in the mucosa of the jejunum. The increasing neutrophilia was apparently due to the enteritis; the intussusception was chronic and may have been present when dog was first put on experiment (5-13-67). We don't know what the toxin was.

232 Case II 685-66-88 The Wooly monkey had chronic ulcerative colitis due to Endamoeba hystolytica. Some protozoa had ingested RBC's. - Ulceration through the muscularis mucosae is unusual. The liver had small foci of necrosis associated with mononuclear cell infiltrate but no protozoa were seen. The gall bladder had an increase in plasma cells and lymphocytes in the submucosa; it was mentioned that endamoeba could not survive in bile.

232 Case III 1784 The neoplasm from the 2nd digit of the 11-year-old female collie was a synovioma [illegible] a metastasis. The primary looked very similar and might have been construed as a hyperplastic synovitis but no inflammatory cells present. However, the skin over the mass was markedly infiltrated with the neoplasm. In this area the cells were hyperchromatic but the pattern of epithelium supported by connective tissue was still present.

Some felt this was a vascular neoplasm eg. hemangiosarcoma. I was shown a similar skin lesion by a medical pathologist friend with progression from prominent hyperchromatic endothelium of capillaries, to small villous projections in vessels, to full blown papilliferous pattern seen here.

Most thought it was an apocrine gland carcinoma (before they saw microslide of primary and skin invasion).

CLARK S. PATTON
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(14)

Histories for Wednesday, Slide Conference
24 January 1968

Case I Dog 67-1 Mature male [illegible] surgical specimen.

Case II B-11, B-12, B-16 (3 slides) Seminal vesicles and deep inguinal lymph node from male swine 7-1/2-months-old.

Case III 68-1201 (2 slides) Tissues from 10-year-old spayed female cat. The cat gradually was losing weight and three days prior to examination by veterinarian became anorexic with occasional vomiting and diarrhea. The rectal temperature on admission was 99.6° F. An abdominal mass was palpated. The WBC was 19,950. Four days later, just prior to euthanasia the WBC was 57,100.

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Note: Missing 31 Jan 68 Conference

(16)

Histories for Wednesday Conference
7 February 1968

Case I 67-493-F Dog with acute pancreatitis. At necropsy elevated circular areas of what appeared to be hemorrhage were present on the surface of the liver and visible on the cut surface.

Case II A-1700-67 Liver from bovine fetus aborted in 8 month of pregnancy.

Case III X-2771 Tissue from 8-year-old poodle.

Case IV Bonus!! An adult male muskrat had been used in Plasmodium berghei studies in the spring of 1966. On 1 December 1966, he was extremely depressed and appeared to have a CNS disturbance. He was found later in the water trough. At necropsy the lung was filled with a serous froth. (Contributed by Captain Doyle Frank, WRAIR.)

CLARK S. PATTON
Captain, VC, USAR

Results of Wednesday Conference
7 February 1968

Case I 67-493-F

The 2 1/2-year-old dog with "hemorrahagic" areas (12) throughout the liver had multiple hemangiomas. No similar lesions were seen in other organs. The dog was hit by a car 3-5 days before onset of acute pancreatitis which Captain Mitten considered to be traumatic.

Case II A-1700-67

The liver from aborted 8-month-old fetus had dilated sinusoids and central veins, chronic peritonitis of the capsule and foci of "multiple cell" infiltrates due to virus of epizootic bovine abortion. Dr. Ward commented that the disease is characterized by RE infiltrate in many viscera. The heart and kidneys may contain white cellular foci seen grossly. The dilated vascular spaces in liver is felt to be due to chronic congestion. It has a characteristic focal nodular gross appearance.

The calves also may be born weak and die soon after birth; some survive. The aborted fetuses usually occur in the eighth month and are well preserved. The disease is only seen in California from July to October. The psittacosis-lymphogranuloma virus also causes enzootic abortion in sheep and is serologically indistinguishable from the psittacosis agent.

Ref: Kennedy, P. C., H. J. Olander and Howarth, J. A., Pathology of Epizootic Bovine Abortion, Cornell Vet 50, 1960, pp 417-429.

Case III X-2771

The tumor in the brain of the 8-year-old spayed female poodle was a glioma (astrocytoma or oligodendroglioma depending on tumor cell count of 51%) at the level of the corpus callosum and caudate nucleus. The neoplasm was approximately 2.5 cm diameter. It was located on the left side but extended to the right of the midline.

The poodle was first examined for some nondescript change in activity. Three weeks later she was examined for incoordination, convulsions and circling to the left.

Captain Johns also said the extensor thrust reflex of the left hind leg was reduced. Treatment was attempted to control convulsions but the dog had an episode of severe convulsions, became comatose, and died.

Case IV--Bonus
A-926-66

The adult male muskrat had Cryptococcus neoformans in the lung and spleen as well as many other viscera. A mucicarmine of the spleen and lung is included this time. This was a spontaneous case in lab animal colony of WRAIR. Apparently, ventilatio.. inlet is a hangout for pigeons. However, cryptococcosis has not been a problem in their colony.

CLARK S. PATTON
Captain, VC, USAR

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Histories for Wednesday Slide Conference
14 February 1968

240 Case I 10

A Canada goose from Flanders Bay, Long Island, New York, 20 mallards, 65 black ducks, and 1 Canada goose died suddenly. The most striking lesion in the black ducks was a massive hemorrhagic enteritis. One black duck had small patches of necrosis in the esophagus. Diagnosis: ?

241 Case II 1777

A 3-year-old male cat was presented to a veterinarian with severe respiratory distress. The symptoms occurred suddenly; no previous signs were noticed by the owner. He died during examination. At necropsy, a small 1.0x1.0 cm pale mass was found adjacent to the trachea just cranial to its bifurcation. No other lesions were noted.

242 Case III 1212858

A 6-year-old male [illegible] had a mass in the left gluteal region.

CLARK S. PATTON
Captain, VC, USAR

(A)

Results of Wednesday Conference
14 February 1968

(240)
Case I 10

The Canada goose had a necrotic, focal, hemorrhagic enteritis due to the herpes virus of Dutch duck plague (duck viral enteritis). The tissue was given to Doctor Lou Locke of Patuxent Wildlife Research Center by Doctor Libovitz of the Long Island Duck Research Laboratory, Long Island, New York.

The disease was first reported in Holland in 1923, China in 1958, and India in 1954. In ducks there is necrosis on ridges of the esophagus, hemorrhage at the junction of the esophagus and proventriculus, focal annular hemorrhage in the small intestine. There is necrosis in the colon and button ulcers in the ileum and colon. The annular hemorrhage occurs where lymphoid follicles are present (our case). According to Doctor Locke, the secondary bacterial invaders cause the extensive destruction.

This is the first recorded case in a goose. The disease is now present on Long Island in the domestic and wild ducks and has a very real danger of spreading over the country.

References:

Jac. Jansen, Duck Plague (A Concise Survey), Indian Veterinary Journal, 1961, Vol 41, No, 5, pp 309-316.

Jac. Jansen, Duck Plague, British Veterinary Journal, Vol 117, pp 349-356.

241

Case II 1777

The 3-year-old male cat with the sudden onset of respiratory distress had a spindle cell epidermoid carcinoma or carcinosarcoma of the esophagus. The mass was a cross section of the esophagus; necrotic debris and remnants of a lumen were present in the center. The wall of the esophagus was obliterated. Islands of epithelial cells were present within the proliferating spindyloid cells. Several people thought the lesion was purely inflammatory and wanted to see a transition to be convinced (longitudinal section). There was a mild chronic tracheitis, too.

242

Case III 1212858

The 6-year-old male pointer had a mast cell sarcoma. One and one-half years prior to discovery of this mass, a skin tumor was excised over this mass but was not examined. Surgery was attempted to remove the large gluteal mass but upon incision, the mass was not so definitely defined and had invaded the muscle of the thigh. Extensive surgery was performed. The dog recovered from anesthesia, but died later that night (vascular collapse?).

At necropsy a mass was present extending through the femoral canal into the abdomen but no metastases were seen. The tumor apparently spread only by extention in this case.

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Captain, VC, USAR

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Histories for Wednesday Slide Conference
21 February 1968

Case I 1384-66 A rhesus monkey was not eating well and had a loose stool for 2 days prior to death. The monkey had been in the colony for about 1 month.

Case II 38-005 A sexually immature male monkey was used as a subject in a toxicology study and received the test compound at the highest dosage level administered.

All clinical chemistry, hematology and urinary parameters evaluated were within normal limits up to the time terminal values were obtained. The study ran approximately 30 days. No significant gross findings observed at necropsy.

Case III S-334-67-10 A practitioner treated a 1/4-inch diameter donut-shaped furuncle on the left posterior abdomen of a 6-month-old female basset hound with hotpacks, antibiotic ointment, and steroids. After several days it had enlarged slightly and became ulcerated. Much bleeding was encountered upon surgical removal.

Case IV Bonus 1261169 An adult cat had a debilitating downhill course of a disease characterized by anorexia and vomiting. At necropsy the wall of the stomach contained a 4 x 6 x 3 cm mass.

CLARK S. PATTON
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Results of Wednesday Slide Conference
21 February 1968

Case I - 1384-66 - The rhesus had a giant cell pneumonia due to measles (rubella) virus? (Not cultured). Three out of 100 monkeys died 2 weeks after arrival to the colony in a span of 3 days. No more deaths occurred. The inclusion bodies were intranuclear and intracytoplasmic (some very large). Discussion centered around the purulent pneumonia as no bacteria were seen microscopically or isolated from lung tissue at necropsy. Sometimes a prominent pneumonitis is present without the purulent response. The diarrhea frequently seen may do the monkeys in as their death cannot always be explained by the small amount of pneumonia present.

Case II - 38-005 - The immature male monkey given the test toxin at the highest dose level had pancreatic atrophy. Two-three days before termination of experiment, this group developed a diarrhea and the blood glucose fell to 6 to 30 mgm% (normal 80-90). Serum enzyme levels were not determined. The contributor did not know what the compound was other than an identification number.

Case III - S-334-67 - The skin tumor from the 6-month-old female bassett hound was a keratoacanthoma (according to Mac Persing - the contributor). Others felt it was an inverted papilloma due to the prominent collagen supporting the proliferating squamous epithelium. No body was belligerent so take your pick.

✓ Case IV - 1261169 - The cat with the chronic disease characterized by vomiting and anorexia had a sparganum (cestode plerocercoid) in the wall of the stomach. A portion of the gastric mucosa was ulcerated as the mass protruded into the lumen. A teased portion was identified by Mrs. Chitwood at USDA, Beltsville, Maryland, as a proliferationg sparganum,. Calcareous bodies (the concentrically laminated mineral bodies) are one finding that make it a cestode.

CLARK S. PATTON
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Histories for Wednesday Slide Conference
28 February 1968

Case I 67-773

A mass removed from a Sprague-Dawley rat.

neoplasm

Case II H-109-17

Eight-week-old female hamster. One of 8 hamsters in a group of 36 that died within 1 hour after arrival. Most appeared normal until 36 hours prior to death; diarrhea was observed in the terminal stages. The hamsters were not inoculated with any experimental material.

non-specific granuloma?

Case III 1243478

A 4-year-old male dog was treated for heart worms on 3 November 1966. Three months later he suddenly developed grand mal seizures but returned to normal the next day. Eight days later he began circling to the right and was ataxic. The left pupil was not responsive to light. Five days later the circling stopped. For 55 days, his condition remained unchanged; he then again began convulsing and circling to the right. He was euthanized 6 days later or 69 days after the first onset of convulsions.

nematode

Case IV Bonus 1255322

Lesion on the back of a fresh water fish. Etiology?

metacercaria?

CLARK S. PATTON
Captain, VC, USAR

Results of Wednesday Conference
28 February 1968

Case I - 67-773 - The Sprgaue-Dawley rat had a rabdomyosarcoma of the hind leg. The mass was about as large as the rat itself. MAJ Stookey got wind of the tumor from one of the members of his car pool and insisted that he himself examine it. Now I have ratted on him!

Case II - M-109-17 - The 8-week-old female hamster with diarrhea had an ileitis characterized by plasma cell, lymphocytic and histiocytic infiltrates and connective tissue proliferation. The tunica muscularis was interrupted.

(H) M-141-34 - This section of ileum is from a 16-week-old female hamster from the same group as H-109-17. She was found dead in the cage; no prior illness was noted. This healing ileitis produced an intestinal obstruction. There were false diverticula extending through the tunica muscularis. Doctors Boothe and Cheville contributed these cases.
Ref.: Boothe, A. D. and Cheville, N. F. The Pathology of Proliferative Ileitis of the Golden Syrian Hamster, Path. Vet., Vol. 4, 31-44, 1967.

Case III - 1243478 - The 4-year-old male dog had encephalomalacia of the right cerebral cortex due to thrombosis of the anterior cerebral artery and Dirofilaria immitus occluding branches of the right middle cerebral artery. At necropsy, a live non-gravid female heart worm was removed from the right anterior communicating artery. The outer rim of gray matter survived due to collateral circulation of the meninges. Most of the malacic area consisted of gitter cells and cholesterol clefts (in some areas).

Case IV - 1255322 - The lesion on the back of the fresh water fish was a granulomatous myositis due to protozoan Myxosporidia of either the genus Myxosoma or Myxobolus. Myxosporidia are common pathogens of fish. The forms present were spores within the lumen of collapsed cysts and within the tissue. The columnar cells lining the irregular cavities were part of the cyst wall. The spores were small translucent bodies containing 2 pear-shaped bodies and a single nucleus. They are better demonstrated with PAS or GMS. The Myxosporidia were identified by G. L. Hoffman, Ph.D. of the Eastern Fish Disease Lab, Kearneysville, West Virginia.
Ref.: Davis, H. S. Culture and Diseases of Game Fishes, Univ. of Calif. Press ($6.50), Berkeley and Los Angeles, 1967, 237-240.

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Histories for Wednesday Slide Conference
6 March 1968

250

Case I - 66-711 - Incidental finding in a mouse used in an experiment.

Case II - P59 - A 4-year-old Columbia ewe that was very late in gestation
251
became "toxic", went down and was unable to rise. A caesarean section produced two live, healthy lambs. The following day, she was moribund; she did not respond to dextrose or propylene glycol therapy.

Case III - 17452 - Tissue from a dog. Identify tissue and cite a possible cause of this condition.

252 A+B
A= prostate
B= testicle

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Histories for Wednesday Slide Conference
13 March 1968

253 A+B
Case I - 66-910 and 66-911 - Two of a group of guinea pigs which died suddenly a few days after arriving from England.

254
Case II - A-1701-67 - Lung taken from a feeder lamb presented in extremis. Other lambs in flock were found dead.

255
Case III - G-829 - Incidental finding in a goat.

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252B
CASE IV - 17452-1 Testicular enlargement (Sertoli Cell Tumor)

(A)

Results of Wednesday Conference
13 March 1968

Case I 66-910 and 66-911

253 +6

The guinea pigs had a chronic purulent cervical lymphadenitis and acute meningoencephalitis due to a hemolytic Streptococcus. The organisms were easily seen in both the lymph node and brain; there were no other microscopic lesions seen.

At AFIP, Streptococcus fecalis has been isolated in several outbreaks. In a few animals the inguinal nodes were also involved. Apparently, meningoencephalitis is an unusual sequella to cervical adenitis.

Case II A-1701-67

254

The lung taken from the feeder lamb in extremis had focal atelectasis, congestion, septal edema, recent thrombi in some arterioles and bacterial colonies in alveolar septae. The lack of inflammation is characteristic of pasteurellosis in lambs, as well as the lack of any extensive necrosis. According to Dr. Ward, this lesion is typical of a rather common condition in California.

Ref: Biberstein, E. L. and P. C. Kennedy, Septicemic Pasteurellosis in Lambs, Amer. Jour. Vet. Res. 20, No 74, pp 94-101, Jan 1959.

Case III G-829

255

The adrenal glands from the adult (8 yrs?) castrated male goat contained bilateral adrenal cortical adenomas. The chronic inflammation along one portion of the capsule was due to the experimental procedure according to Captain Altman. Chromaffin reaction was not done.

Of 2,500 pairs of goat adrenal glands examined at Edgewood Arsenal, 500 adrenal cortical adenomas were found. No other type of adrenal neoplasm was found. These were differentiated from cortical hyperplasia based on the presence of compression, loss of polarity, and abnormal size, shape, and tinctorial quality in the tumor cells. Only 18 of the 500 had the pleomorphism of G-829. There were 397 well differentiated adenomas; 59 were a mixture of spindle cells and typical cortical cells; and 26 were comprised of spindle cells.

A couple "troublemakers" emphasized the importance of the chromaffin reaction to differentiate pheochromocytoma as one of them. (Major Di Paoli) has seen a pheochromocytoma in a horse similar to this tumor. Captain Altman stated that the last 100 tumors have been fixed properly to examine for chromaffin cells and they have not been present. Castration may influence the high incidence in these aged goats.

CLARK S. PATTON
Captain, VC, USAR

Histories for Wednesday Conference
27 March 1968

Case I 10069

Mature female chicken in fair condition. Liver and spleen were noted to be very pale and mottled. All other tissues appeared grossly normal.

Case II 1250871

Tissue from a Syrian golden hamster--incidental finding.

Case III 1544-1

A 2 1/2-year-old female Norwegian elkhound had shown increasing weight loss, vomiting, icterus and anemia over a 4-month period. There was an intermittent low grade fever. At necropsy there was marked hepatosplenomegaly and lymphadenopathy.

CLARK S. PATTON
Captain, USAR, VC

(A)

Results of Wednesday Conference
27 March 1968

Case I 10069

256

The mature female chicken in fair condition had myelocytomas of the liver (and spleen). They were green. Doctor Langheinrich translated the first reference which appeared in Pathologica Veterinaria.

Reference: Loliger, H. CH. and Schubert, H. J., Report of the Transmissibility of Avian Myelocytomas, Path. Vet., Vol 3, No 5, 1966, pp 492-505.

Sevoian and Chamberlain, Avian Lymphomatosis, IV Pathogenesis, Avian Diseases, Vol. 8, 1964, pp 281-310.

Report of the AAAP-Sponsored Leukosis Workshop, Avian Diseases, Vol 11, No 4, Nov 1967, pp 694-702.

At a recent conference at AFIP on hemic neoplasms of man and animals, Doctor Helmboldt stated that of all the solid neoplasms in chickens, astrocytoma, nephroma, and perhaps melanoma cannot be produced by the RPL 12 (Rif +) virus.

Case II G-9-67 (1250871)

257

The Syrian golden hamster had cirrhosis of unknown etiology. Doctor Ward felt the foci of coagulation necrosis may have been related to ischemia and not due to the primary cause of the cirrhosis. This condition was found in many hamsters euthanized by Doctor Dungworth (California). These hamsters were about 3 years old. (I think this case is from his colony.) There is nothing we have found on this condition in hamsters in the literature.

We all tend to have a concept of cirrhosis which varies from the truth. The Fifth Pan American Congress of Gastroenterology held in Havana, Cuba, in 1956, decided on five anatomic criteria for cirrhosis:

a. All parts of the liver are involved, without necessarily affecting each lobule.

b. Cellular necrosis is present at some stage of the disease.

c. Nodular parenchymal regeneration (there may be collecting sinuses but there are no central veins).

d. Diffuse fibrosis.

e. Disorganization of the lobular architecture with connective tissue bands uniting centrolobular zones with the portal tracts.

Case III 1544-1

258

The 2 1/2-year-old female Norwegian elkhound with weight loss, vomiting, and icterus had histoplasmosis (easily seen with our silver stained slide). There was also histologic involvement of the lungs, kidneys, spleen, and lymph nodes. We agree with Doctor Squire when he says that this case shows the severe neoplastic-like proliferation of histiocytic cells occasionally seen in dogs with histoplasmosis.

After the etiology was disclosed, some wondered about the possibility of a myelogenous neoplasm and a concurrent fungal infection. Most felt the large spaces were dilated sinusoids.

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P. S. The April 17th conference has been moved up to April 10. There will be no conference on April 17 (Easter vacation).

Histories for Wednesday Slide Conference
3 April 1968

259 Case I - 36-453 - An incidental finding from a rat. This rat died while on study.

260 Case II - 2967-46 - A 9-year-old male mongrel dog was presented for surgical removal of a subcutaneous swelling on the right thorax.

261 262 Case III - 1261858 (2 slides) - Rectal biopsy from an 11-year-old male hound dog.

CLARK S. PATTON
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Veterinary Pathology Division

1 EM
1 Filing
3 JP Slides to PCS

(A)

Results of Wednesday Conference
3 April 1968

Case I 36-453
259

The incidental finding from a rat was an embryonal nephroma. The mass was attached to the left kidney, pink, and appeared to extend from the capsular surface through the cortex and into the medulla. It measured 1.5 x 2.0 x 3.0 cm; the left adrenal was not involved. The other organs appeared grossly normal.

Case II 2967-46
260

The tumor from the right thorax of the 9-year-old male mongrel dog was a hemangiosarcoma. It was felt at first to be a hematoma, so a hypodermic needle was stuck into it; it bled very profusely. Soon after, more nodules appeared in the subcutis around the original tumor. Surgery was then attempted, but all of the tumor could not be removed. The condition continued to worsen and he was killed. Extensive metastases were found at necropsy, including the cerebrum, heart, lung, kidneys, urinary bladder, and small intestine. The primary site was not determined.

Case IV 1261858
261 + 262
(HE) (Giemsa)

The rectal biopsy from the 11-year-old male hound dog was a plasma cell tumor. Some felt strongly in favor of mast cell tumor. The cells did not contain distinct granules; some mast cells were present in association with the supportive stroma.

This biopsy was a recurrence; the original tumor involved 3 cm of the rectal wall about 3 cm from the mucocutaneous junction. Eleven months later the tumor extended for a distance of 8-9 cm. We had a section from this recurrence. We have asked for a followup, but have none at this time.

CLARK S. PATTON
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Histories for Wednesday Conference
10 April 1968

263 Case I 67-D-151 — A cat with a debilitating condition approximately 1 month duration. Morphologic diagnosis?

264 Case II 66328 — A 4-year-old wire hair fox terrier was presented with symptoms of respiratory distress. The dog was in poor condition. A 1.5 cm diameter cutaneous ulcer was present in the lumbar area. Multiple opacities were present in a radiograph of the lungs. A diagnosis was made; at necropsy multiple firm white foci were present in all lobes of the lungs.

265 Case III 23577 — A 6-year-old king cobra snake (originally from Thailand) was found dead.

CLARK S. PATTON
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(A)

Results of Wednesday Conference for 10 April '68

(263)

Case I 67-P-151

The eye from the cat with a debilitating condition of 1-month's duration had a pyogranulomatous endophthalmitis according to the contributor, Doctor Valerio. There was also anterior synechia and degeneration in retina as well as to detachment. Proteinaceous fluid in vitreous body was not explained, but eye was handled routinely (and roughly). Both eyes were involved. The brain was not examined.

The debilitating condition was apparently due to feline infectious peritonitis. The abdominal viscera were covered by a fibrinous exudate which contained some neocapillaries and fibroblasts; inflammatory cells were primarily plasma cells and histiocytes. No organisms were evident with a Gram stain. Many small blood vessels in the lung were infiltrated and surrounded by histiocytes. Doctor Valerio felt that the "agent" responsible for the eye lesion was also responsible for the peritonitis.

(264)

Case III 66328

The 4-year-old wire haired fox terrier had a granulomatous pneumonia and bronchial lymphadenitis due to Blastomyces dermatiditis. Doctor Cysewski of NADL contributed the case. The organism was cultured from the skin lesion and lung lesions. The dog's serum contained anti-Blastomyces complement fixing antibodies. A Gridley fungus stain is included this time.

265

Case III 23577

The 6-year-old king cobra snake had a granulomatous necrotic hepatitis due to Endamoeba sp. Many organisms were present in the sinusoids as well as associated with the lesions. The dissemination was felt to be hematogenous.

Multiple gastric ulcers were present grossly. Similar organisms were present in these ulcers. When amoeba are present in lesions in the GI tract, they may or may not be pathogens. Ingestion of RBC's can be demonstrated nicely by the Gridley amoeba stain; this is the most important finding to determine if Endamoeba are pathogenic or not. A few amoeba in this case in the gastric ulcers contained RBC's.

CLARK S. PATTON
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Results of Wednesday Conference
24 April 1968

Case I - The 12-year-old springer spaniel had a mast-cell tumor of the right front foot. The slide was a Giemsa stained section. Some tumor cells had fine metachromatic granules in the cytoplasm. Eosinophils were present but not numerous. We have no follow-up as of this time.

Case II - P-56 - The 4-year-old Schnauzer bitch had a granulomatous colitis due to Histoplasma capsulatum. There was invasion of the mucosa, submucosa and muscular layers by histiocytes and plasm cells. A GMS stain demonstrated intracytoplasmic spherical budding yeast-like organisms compatible with Histoplasma.

The organisms were also demonstrated in lesions in the mesenteric lymph node and ileum. The organisms were difficult to see on H&E and not numerous with the GMS.

Case III - 174-52 - The 14-year-old Boston terrier had an oligodendroglioma of the thalamus.

The non-encapsulated neoplasm measured .5 x 1.5 cm and was present in the thalamus ventral to the right lateral ventricle. It did not invade the ventricle.

Histologically, the tumor was composed of round basophilic nuclei and indistinct cytoplasm. Some of these cells had a halo around the nucleus (basket cells). A few mitotic figures were present and numerous microcysts were present. Hortega's silver impregnation method revealed short, stubby processes on the neoplastic cells, interspersed with a few astrocystes according to CPT Taylor.

Histories for Wednesday Slide Conference
24 April 1968

266 Case I - A 12-year-old springer spaniel dog was limping in the right front leg and was licking the paw for several weeks. The foot was swollen and the pad surface was raw. IM streptomycin and a topical drying powder failed to produce any results.

267 Case II - P56 - Section from a 4-year-old Schnauzer bitch. The clinical diagnosis was chronic enterocolitis of "nervous" origin. Later a diagnosis of granulomatous colitis was considered.

264 Case III - 174-52 - A 14-year-old male Boston bull terrier had a history of listlessness, ataxia, circling, nystagmus, partial blindness and a right head tilt. The dog had normal hopping and placing reflexes.

CLARK S. PATTON
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Veterinary Pathology Division

A few felt the tumor was an ependymoma as the microcysts were lined by cuboidal cells. Oligodendrogliomas contain such ependymal structures according to W.A.D. Anderson's pathology text.

This dog was the same case given on 6 March 1968 with squamous metaplasia of prostate and Sertoli cell tumor in a retained testis.

Ref. Davis, C. L. and Neubuerger, K. "Oligodendroglioma in a Dog". J.A.V.M.A., Nov. 1940.

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(28)

Histories for Wednesday Conference
1 May 1968

269 Case I 68-0363 — A dead rhesus was brought to Major Hildebrandt for examination.

270 Case II X3196 — Tissue from a diamond python.

271 Case III 67-1365F — A 14-year-old male English pointer which did not respond to therapy for congestive heart failure.

272 Case IV - Bonus 1058160 — A cottonmouth moccasin (Agkistrodon piscivorous), in good health, was killed in a manner similar to that which befell Marie Antoinette. The snake was included in a study on the incidence of amoebiasis.

Results of Wednesday Conference
1 May 1968

269 Case I 68-0363

The dead rhesus brought to Major Hildebrandt had miliary tuberculosis and focal hemorrhage in the brain. The large area of necrosis and abscess formation contained numerous acid-fast bacili. Similar lesions were present in many lymph nodes, all of one testis and throughout the lung. The skin near the umbilicus had a 1x3 cm long raised area which was partially ulcerated.

This is one rhesus out of several used in a high altitude test. The monkeys are kept at 17,000 feet except once a day when cages are cleaned. All of the monkeys so far under this test have developed CNS signs after 2 weeks. Major Hildebrandt felt the CNS hemorrhage present in our case (and in the other monkeys) is due to thrombosus of vessels secondary to vasculitis (present in our section). He has also seen this lesion in the spinal cord.

270 Case II X3196

The adult female diamond python had granulomas of the stomach and small intestine due to ascarids (either Ophidascaris sp. or Polydelphis sp.). Early the lesion is granulomatous, but later there is a marked desmoplastic reaction too. Some ova were present in the mineralized foci. Mice serve as the intermediate host for Ophidascaris baylesi and amphibians for Polydelphis sp. Although the snake was from Southeast Asia, sne may have acquired the infestation on this side of the Pacific.

Actually, the snake was one of two pythons killed because they had necrotic stomatitis, due to Pseudomonas, which was not responding to therapy. The stomach lesions were felt to be incidental findings. This snake also had a clear fluid-filled cyst in the liver and fecal impaction of the distal colon.

Reference: Journal of Parasitology, Vol 49, 1963, pp 765-770.

27 Case III 67-1365F The 14-year-old male English pointer had multiple metastases of a heart base tumor in the lung or a nonchromaffin paraganglioma.

The dog was originally presented with a cough which became progressively worse. Examination revealed lung congestion and irregular, muffled heart sounds. A radiograph revealed an enlarged, round heart. The dog did not respond to digitalis and he was killed.

At necropsy there was a mass between the aorta and the pulmonary artery. A slide of this tumor is included this time (67-1365F5). The lung contained numerous nodules.

27 Case IV - Bonus The tissue from the cottonmouth moccasin was the venom gland. It is located in the skeletal muscle just posterior to the mandible.

Reference: Kochva, E. and Gans, C. Histology and Histochemistry of Venom Glands of Some Crotalline Snakes. Copeia, 1966, pp 506-515.

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(27)

Histories for Wednesday Slide Conference
8 May 1968

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Case I - 1780-4 - A 3 1/2-year-old castrated male cat with a 4 month history of listlessness, anorexia and an abdominal mass. A biopsy of this mass was diagnosed as lymphoma. Treatment with Azium apparently alleviated signs for about a month; they then progressed rapidly and euthanasia was requested.

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Case II - 18825 - A 1 1/2-year-old heifer in good condition had numerous circumscribed lesions throughout the lung. There were no gross changes in the liver, kidney or the lymph nodes.

Case III - 39-67 - A splenectomized rhesus was artificially infected with malaria

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CLARK S. PATTON
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Results of Wednesday Conference
8 May 1968

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Case I - 1780-4 - The 3-1/2-year-old castrated male cat had a granulomatous spl
due to acid-fast bacilli. The histiocytes contained numerous acid-fast organisms.
Squire felt it was possibly tuberculosis. Similar histiocytes had infiltrated the po
areas of the liver and were found in moderate numbers throughout the lungs. The
abdominal mass, a mesenteric lymph node, was composed almost entirely of thes
cells.
LTC Garner wanted me to pass along this reference since we only see (under the sc
what we know: Lawrence, W.E. and Wickham, N. Cat Leprosy: Infection by a
Bacillus Resembling Mycobacterium lepraemurium, Aust. Vet. Jour., Vol. 39, O
1963, 390-393. The disease is characterized by cutaneous ulcers and some super
lymph node involvement. The inflammation is almost entirely histiocytic, similar
what we had in this case, however, there is no systemic involvement in cat leprosy

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Case II - 18825 - The 1-1/2-year-old heifer had multiple adenomas of bronchial or
mucinous type. Dr. Imes has only seen two case in 2 years. Dr. Migaki has also
seen several cases. All of them have been in cattle 1-1/2 - 2 years old. Monlux
they may be in the category of a developmental anomaly or hamartoma. In one sec
from our case, the tumor appeared to be arising from the bronchial epithelium.
Reference: Monlux, A.W., et. al. Adenocarcinoma of the Uterus of the Cow - Di
ferentiation of its Pulmonry Metastasis from Primary Lung Tumors, Amer. Jour.
Res., 17, 45-73, 1956.

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Case III - The splenectomized rhesus with malaria had dry gangrene of the foot an
distal part of the leg. Morphological diagnoses were many: how about necrotic
cellulitis, vascular thrombosis, coagulation necrosis and degenerating skeletal mu
CPT Conran does not know the cause of the condition. It occurred in about 5 out of
rhesian monkeys infected with Plasmodium cynomologi. Sometimes the hands were
volved and not the feet; one had a necrotic phalynx only. The necrosis occurred w
3-5 days after experimental infection. The monkeys were uremic but so were othe
that did not develop the lesion. Many other monkeys kept in the same vivarium hav
not developed this lesion; it has not been reported as a lesion of malaria in man.

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Histories for Wednesday Conference
15 May 1968

Case I - 1271751 - Subcutaneous mass from the back of a dog.

Case II - 35-629 - This rhesus was a TB reactor and had been receiving an antibiotic orally. Grossly, the lungs had variably-sized cavities and considerable consolidation of one lobe. Multiple caseous nodules were observed within the spleen; these were well circumscribed and gray.

Case III - Herp 67-1 - Banded water snake (Natrix sipedon); incidental necropsy finding.

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RESULTS OF WEDNESDAY CONFERENCE
15 MAY 1968

Case I - The mass from the back of a dog was a liposarcoma. The finding was incidental in a laboratory dog euthanized at the end of an experiment. Two adjacent subcutaneous masses had been noted for sometime prior to euthanasia. There were no metastases found at necropsy.

Case II - 35-629 - The TB reactor rhesus had a foreign body pneumonia believed to be due to furacin medication. With polarized light, numerous crystals were easily seen in the histiocytes. Apparently none of the infiltrate was due to tubercle bacilli. The monkey also had granulomas in the spleen due to TB.

Case III - Herp 67-1 - The banded water snake (Natrix sipedon) had pneumonitis due to an unidentified trematode according to Dr. Marcus. Other tissues on the slide were a normal adrenal, ovum, and oviduct. CPT Shive mentioned that the trematode ova are similar to those found in pseudophyllidean cestodes.

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Histories for Wednesday Slide Conference
22 May 1968

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Case I - 67-2596 - Tissue from a golden Syrian hamster.

Case II - 67248 - Metacarpal bone from a 4-year-old Holstein cow with symptoms of severe lameness and emaciation. This animal was from a herd of 82 cows and heifers located adjacent to a fertilizer plant producing di-calcium phosphate and polyphosphate. Symptoms appeared shortly after production of polyphosphate began. Much dust from the plant was noticed to settle on the forage.

Hemoglobin - 9.66 Gm%
Hct - 26.5%
WBC - 13,150
Eosinophils - 4%
Seg Neut - 67%
Band - 2%
Monocytes - 1%
Lymphocytes - 26%

Serum Calcium - 10.5 mgr
Serum Phosphate - 4.4 mg
Serum Magnesium - 2.25 r
Total Blood Phosphate - 23

2568

Case III - (2 slides) - A-53-68 - A young spayed domestic short-haired cat was hospitalized by a local vet with history of lethargy and difficulty breathing for several hours before admission. Physical exam revealed rectal temperature of 99°F and pale mucous membranes. When palpated the skin and hair sloughed off the head and extremities. Treatment was given but she died 6 hours later.

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Results of Wednesday Conference
22 May 1968

Case I - 67-2596 - The tissue from the golden Syrian hamster was the ovary, of course, oviduct and the vessels in the broad ligament. The hamster was pregnant; this explains multiple corpora lutea and trophoblast cells within some of the vessels. A chronic arteritis in some arteries was also present.

Dr. Valerio said trophoblasts were fairly common here in pregnant hamsters in her experience. They may be found in the lung. She has not seen them in mice. Dr. Shalkop mentioned they were commonly found in pregnant chinchillas.

Case II - 67248 - The section of metacarpal bone from the 4-year-old Holstein cow had an exostosis and thickening of the cortex [illegible] due to chronic fluoride poisoning. Multiple exostoses were present on the long bones and the cortex of the long bones and mandible was thickened. The articular cartilages were eroded and the third incisors on both sides were pitted. Fluoride analysis of long bone: old bone-4,000 pp
new bone-8,000 p
future cross section-6,000 ppm

In addition to the history given with the case, the symptoms of poisoning began as a loss of weight and drop in production of the entire herd. Seven of 82 animals became lame, emaciated and developed brownish discoloration of the teeth.

Dr. Cutlip wanted to acknowledge the assistance of Iowa State University, College of Veterinary Medicine in preparation of the case.

Case III - A-53-68- The young spayed female cat had a pancreatic acinar carcinoma according to Maj. Persing. There were metastases to the visceral and parietal peritoneum, liver and lung. He had no good explanation for the sloughing of skin and hair off the head and extremities.

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Histories for Wednesday Conference
29 May 1968

Case I - 1230849 - An aged male cheetah with two large yellow raised masses in the liver and multiple yellow nodules in the spleen.

Case II - 1199742 - A 1-1/2-year-old Holstein bull had a projectile diarrhea for 3 months. The animal became progressively anorexic, dehydrated and emaciated. Necropsy findings included numerous lungworms in the bronchial tree and numerous small nodules (5mm. diameter) throughout the parenchyma.

Case III - A-13-26-67 - A laboratory cat was treated for a recurrent anemia.

Case IV - Bonus - 3886710 - A dog with pneumonia.

CLARK S. PATTON
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Veterinary Pathology Division

Results of Wednesday Conference
29 May 1968

Case I - 1230849 - The aged male cheetah had a myelolipoma of the liver - also many in the spleen. The hematopoiesis in the liver was apparently limited to the expanding fatty mass but in the spleen it was generalized. According to W.A.D. Anderson's text, in man they occur in the adrenal and may be considered a metaplasia rather than a true neoplasm. They are not necessarily a reaction to anemia. LTC Garner has seen several of these tumors in the spleen and/or liver of zoo cats - mainly cheetah.

Case II - 1199742 - The 1 1/2-year-old Holstein bull with the projectile diarrhea had Hartmonellosis (Acanthamoeba) of the lung which caused multiple foci of necrotizing pneumonia. The protozoan has not been reported in animals but this case will be in the next issue of Pathologica Veterinaria. The organisms would have been better visualized with a Ziegler's hematoxylin and eosin stain according to Capt. McConnell. Two different forms were present - an encyted form and vegitative form. The organism is common in the soil and has become recently discovered as a pathogen for man producing an invariably fatal encephalitis. Capt. McConnell said it had been reported in the American Journal of Clinical Pathology during 1966 and 1967. He did not find an etiology for the diarrhea nor did he find the lungworms described by the prosector.

Case III - A-13-26-67 - The castrated male cat with the recurrent anemia probably had reticuloendotheliosis according to CPT Frank. Six months prior to euthanasia, the cat was presented for icterus; numerous Hemobartonella were seen: 1% of the lymphocytes at this time were atypical with indentations, double nuclei and plasmacytoid forms (Turk and Reider cells). For the next 6 months the anemia recurred without any further detection of the Hemobartonella. Treatment consisted of chloromycetin and blood; the cat would be sent home after 2-3 weeks treatment only to return again in another 2-3 weeks. He was last treated with chloromycetin 14 days prior to necropsy. At necropsy, the liver was enlarged and yellow. The spleen was 4 times normal size and congested. The lymph nodes were enlarged and edematous. Icterus was present. The Hct was 9% and the WBC was 45,500 (corrected) with 93% atypical cells, 2% segs. and 5% lymphs. There were 52 nucleated RBC's per 100 WBC's. The atypical cells were felt to be stem cells.
The spleen and liver contained infiltrates of stem cells as well as many recognizable erythroid series cells. The hematopoiesis was present in the lymph nodes, too. There were small focal infiltrates in the interstititum of the kidney, too, but no recognizable hematopoiesis. The bone marrow consisted of areas of stem cells as well as normal areas of hematopoiesis. Discussion centered around the invasion of some cells through arteries in the spleen. The marked erythropoiesis is compatible with reticuloendotheliosis; the renal infiltrate is not. The crystalline foci in the liver may have been oxalate crystals. (Not a laboratory cat as I said in history).

Ref.: Gilmore et al. Reticuloendotheliosis, a Myeloproliferative Disorder of Cats: A Comparison with Lymphocytic Leukemia, Path. Vet., 1, 161-183, 1964.

Case IV - Bonus - 3886710 - The adult dog with purulent pneumonia had unusual inclusion bodies according to Dr. Ford. Typical inclusions were present in the urinary bladder, intestinal tract, and lung but the herpes-like intranuclear inclusions present in the lung may have indicated a concurrent infection.

This is the last conference for the current season. We will start again in October, so be thinking about 6 good cases. Many people have commented to me on the high quality of the cases during this past year; this is certainly due to the work of all of you. If any of you cannot contribute next year, please let me know.

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