Chinese Society of Comparative Pathology

中華民國比較病理學會

第 68 次比較病理學研討會

蟲媒性的傳染病(insect-borne diseases)

主辦單位

CHINESE SOCIETY OF COMPARATIVE PATHOLOGY

中華民國比較病理學會

協辦單位

TAIPEI ZOO

台北市立動物園

December 18, 2016 (中華民國 105 年 12 月 18 日)

SCHEDULE

68th MEETING OF COMPARATIVE PATHOLOGY

中華民國比較病理學會 第 68 次比較病理學研討會

時間：105 年 12 月 18 日(星期日)　　地點：台北市立動物園熊貓館國際會議廳

地址：臺北市 11656 新光路二段 30 號　電話：(02) 29382300

Time (時間)	Schedule(議程)		Moderator (主持)
08:30~09:20	Registration (報到)		
09:20~09:30	Opening Ceremony (致詞) 金仕謙 園長、廖俊旺 理事長		
09:30~10:30	專題演講	Topic: Updates of Zika virus infection Hsin-I Huang (黃馨頤), MD. Centers for disease control, ministry of health and welfare, Taiwan (衛生福利部疾病管制署)	金仕謙 園長
10:30-11:00	Coffee Break (拍團體照)		
11:00~11:25	Case 468	Dr. Ji-Hang Yin (殷際航 獸醫師) Animal Disease Diagnostic Center, National Chung Hsing University (中興大學獸醫學院動物疾病診斷中心)	金仕謙 園長
11:20~11:45	Case 469	Dr. Yu-Chieh Yang (楊雨潔 醫師) Department of Pathology, Buddhist Tzu-Chi General Hospital and University (佛教慈濟綜合醫院暨慈濟大學病理科)	劉振軒 常務理事
11:50~13:20	Lunch, and Board Meeting (中華民國比較病理學會理監事會議)		
13:20~13:45	Case 470	Dr. Cheng-Hsin Shih (施正心 獸醫師) Animal Disease Diagnostic Center, National Chung Hsing University (中興大學獸醫學院動物疾病診斷中心)	劉振軒 常務理事
13:45~14:10	Case 471	Dr. Shanny Hsuan Kuo (郭 軒 獸醫師) Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (台灣大學獸醫專業學院分子暨比較病理生物學研究所)	許永祥 常務理事
14:10~14:35	Case 472	Dr. Po-Wei Chen (陳柏瑋 獸醫師) Graduate Institution of Veterinary Pathobiology, National Chung Hsing University (中興大學獸醫病理生物學研究所)	
14:35~15:00	Coffee Break		
15:00~15:25	Case 473	Dr. Po-Yi Lue (呂柏毅 獸醫師) Graduate Institution of Veterinary Pathobiology, National Chung Hsing University (中興大學獸醫病理生物學研究所)	施洽雯 常務理事
15:25~15:50	Case 474	Dr. Hsin-Yu Kuo (郭欣瑜 獸醫師) Graduate Institution of Veterinary Pathobiology, National Chung Hsing University (中興大學獸醫學系)	
15:50~16:20	General Discussion (綜合討論)		

臺北市立動物園園區地圖

目　錄

Special Lecture

(專題演講)

Updates of Zika Virus Infection

Hsin-I Huang (黃馨頤), MD.
Centers for Disease Control, Ministry of Health and Welfare, Taiwan
(衛生福利部疾病管制署)

Zika virus infection can be prenatally passed from a pregnant woman to her fetus. There is sufficient evidence to conclude that intrauterine Zika virus infection is a cause of microcephaly and serious brain anomalies.

Zika virus was first discovered in the Zika Forest of Uganda in 1947 following blood analyses of sentinel rhesus monkeys. Until the twentieth century, the African and Asian lineages of the virus did not cause meaningful infections in humans. Before 2007, at least 14 human cases of Zika had been documented, although other cases were likely to have occurred and were not reported. In 2007, vectored by *Aedes aegypti* mosquitoes, ZIKV caused the first noteworthy epidemic on Yap Island in Micronesia. From 2013 to 2015, the Asian lineage of the virus caused further massive outbreaks in New Caledonia and French Polynesia. In 2013, Zika virus reached Brazil, later spreading to other countries in South and Central America. Because the symptoms of Zika are similar to those of many other diseases, many cases may not have been recognized.

Many people infected with Zika virus won't have symptoms or will only have mild symptoms. The sickness is usually mild with symptoms lasting for several days to a week. The most common symptoms of Zika virus disease are fever, rash, joint pain, and conjunctivitis (red eyes). Other symptoms include muscle pain and headache. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. Cases of sexually transmitted Zika virus infection had been reported.

Zika virus became the first major infectious disease linked to human birth defects to be discovered in more than half a century and created such global alarm that the World Health Organization declared a Public Health Emergency of International Concern.

We review the current understanding of the epidemiology, transmission, clinical characteristics, and diagnosis of Zika virus infection.

MEETING OF COMPARATIVE PATHOLOGY

December 18, 2016

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CASE DIAGNOSIS

Case No.	Presenter	Slide No.	Diagnosis
Case 468	殷際航	CW16-088G	Avian poxvirus in a Crested Serpent eagle (*Spilornis cheela*) http://www.ivp.nchu.edu.tw/slide_view.php?id=1140
Case 469	楊雨潔	S2015-13688	Scrub typhus in a women http://www.ivp.nchu.edu.tw/slide_view.php?id=1143
Case 470	施正心	CP16-0403D	Leucocytozoonosis in chickens http://www.ivp.nchu.edu.tw/slide_view.php?id=1144
Case 471	郭 軒	NTU 2015-2435A NTU 2015-2435B	Haemosporidian parasite infection in a female Nicobar pigeon (*Caloenas nicobarica*) http://www.ivp.nchu.edu.tw/slide_view.php?id=1141 http://www.ivp.nchu.edu.tw/slide_view.php?id=1142
Case 472	陳柏瑋	CW16-057B	Suspected viral infection with secondary aspergillosis in an African grey parrot http://www.ivp.nchu.edu.tw/slide_view.php?id=1145
Case 473	呂柏毅	CO16-374	Simple mammary gland adenocarcinoma in a male guinea pig http://www.ivp.nchu.edu.tw/slide_view.php?id=1138
Case 474	郭欣瑜	CW16-081A	Parastrongyliaisis (Previously called Angiostrongyliasis) in a Pallas's squirrel (*Callosciurus erythraeus*) http://www.ivp.nchu.edu.tw/slide_view.php?id=1139

Case Number: 468
Slide No.: CW16-088G
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1140

Ji-Hang Yin (殷際航), DVM, MS.[1]; Yun-Chieh Tuan (段雲傑), DVM[2]; Yi-Hui Su (蘇浥慧), DVM[3]. Fun-Rewn Chang (張芳綸) DVM. [4], Fang-Tse Chan (詹芳澤) DVM, Ph.D.[4], Wen-Fa Zhang (張文發), DVM, Ph.D. [1] Jiunn-Wang Liao (廖俊旺), DVM, Ph. D. [1, 2, 4]

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[3] Department of Veterinary Medicine, National Chung Hsing University（國立中興大學獸醫系）
[4] Endemic Species Research Institute, Council of Agriculture（農委會特有生物研究保育中心）

CASE HISTORY

Signalment: An adult female crested serpent eagle (*Spilornis cheela*)

Clinical History:

A female crested serpent eagle was found weakness and was then sent to Endemic Species Research Institute for treatment in 2014. Long-term rescue shelter stays has been made owing to the finding of abnormality at the right wing. Multifocal, firm, elevated, yellow-tan to black nodules and crusts were found at both eyelids, facial skin, the corner of mouth and foot skin along with large amount of oral secretions was also observed on November 11th, 2016. Oral swab had been made and submitted for molecular diagnosis for detecting Avipoxvirus, and the results presented as positive signals. The crested serpent eagle was humane euthanized because of cachexia and was sent to National Chung Hsing University for pathological diagnosis.

Gross Findings:

Nonfeathered skin including bilateral eyelids, facial skin, corner of the mouth and feet presented yellow to tan, reddish and black, elevated, multiple, irregular nodules and crusts. Within the oral cavity, the nodules were yellow to tan, and accompanied with sticky oral secretions. A 1 cm in diameter surgical site with 2 stitches located on the skin at the ventral side of proximal radius and a 0.1 x 0.1 cm tan, firm nodular presented on the right wing web. A 1x 0.8 cm, tan, soft mass with multifocal slightly ulcerated on the surface on the left wing web and attached on the skin. A 4 x 2 cm elevated mass was found at medial side of tarsal joint with the reddish appearance on the cut section. Diffusely, on the mucosal layer of started from the base of tongue, laryngeal mound and esophagus were elevated, nodular-like, tan, irregular sized nodules.

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CASE RESULT

Histopathologic Findings:

There were locally extensive, mild epidermal hyperplasia of the facial and feet skin. Affected regions were characterized by variable degrees of extensive ulceration and serocelluar crust containing abundant necrotic cellular debris, eosinophilic exudate, fibrins admixed with bacterial clumps. Focal area of keratinocytes contained cytoplasmic vacuolation (ballooning degeneration) and eosinophilic intracytoplasmic inclusion bodies. Within the dermis were abundant multifocal to coalescing aggregated to a nodule or islet formation containing lymphocytes, macrophages and heterophils.

Morphological diagnosis:

Epidermitis and dermatitis, necrotizing, multifocal, severe, chronic active, with epithelial ballooning degeneration and intracytoplasmic inclusion bodies, etiology consistent with avian poxvirus, non-feathered skin

Differential Diagnosis:

1. Trichomoniasis
2. *Capillaria* spp. infection
3. Candidiasis
4. Bacterial infection (*Pseudomonas* spp.)
5. Vitamin A deficiency

Diagnosis:

Avian poxvirus in a crested serpent eagle (*Spilornis cheela*)

Discussion:

Avian pox is a universal infectious disease contributing to a mild-to-severe, slow developing disease in birds. In addition, this known large virus, avian pox, belongs to the genus *Avipoxvirus* of the family *Poxviridae*, which has exhibited several similar viral strains—some strains have the ability to infect several groups or species of birds, but others would present species-specific [(1)]. Regarding the transmission, mechanical route has been considered as a crucial pathway for the avian pox infection into the injured or lacerated skin. Mechanical insect vectors such as *Aedes* spp., *Culex* spp., sticktight flea and mites have been reported recently[(2)]. In terms of the pathogenesis, first of all, ballooning degeneration is formed after avian pox virus infection, eosinophilic intracytoplasmic inclusion bodies deposit and expand the keratinocytes subsequently. Following the stage development, epidermal hyperplasia and inflammatory cells migration toward the epidermal

layer develop. With the disease progresses, macules, papules, vesicles, pustules and crusts could be presented[3-4].

Approximately 60 free-living bird species representing 20 families have been reported with avian pox including eagle and the first case report concerning avian pox virus infection in eagle was a bald eagle in 1979. Two types of characteristic forms have been confirmed, cutaneous type (dry pox) and diphtheritic form[5]. Cutaneous type of avian pox infection locates on unfeathered skin in particular, such as facial skin, eyelid, corner of mouth and foot. This form of disease is often self-limiting and would regress and leave minor scars. Secondary bacterial and other pathogenic infections are as well in common. The other type, diphtheritic form, has been occasionally reported in wild birds, since it is less observable than cutaneous form. Besides, the more severe consequence of mortality and morbidity leading to death are undoubtedly elevated[6].

In this case study, albeit dominant lesions located on the corresponding areas which are responsible for avian pox virus infection, several common lesions causing the similar lesion should also be considered. For example, trichomoniasis, *Capillaria* spp. infection, candidiasis, *Pseudomonas* spp. and vitamin A deficiency would contribute to the akin situation; nevertheless, none of the suspected pathogenic pathogen or distinct squamous metaplasia were found. Thus, avian pox virus infection was speculated in this case[7].

The interrupt of avian poxvirus transmission is the principle method for diminishing and controlling the disease. As for the prevention, modified live vaccine has been widely used in the poultry industry including chicken, turkey and pigeon; however, the effectiveness and safety has been concerned and should be further discussed when applying on the wild birds. Furthermore, the discrepancy of viral stain, host responses to the different strains and the available vaccination program in the poultry nowadays would be more complicated using in wild birds. Hence, for dwindling the disease outbreak, eliminating the mechanical breeding and resting sites and isolating the infected birds will become more plausible ways to perform[8].

Reference:

1. Kirmse P. Host specificity and pathogenicity of pox viruses from wild birds. Bull Wildl Dis Assoc.5:376–386.1969.
2. Tripathy DN, Reed WM. Pox. In: Y. Saif, H. Barnes, J. Glisson, (Eds.) Diseases of Poultry. (ed 11). Iowa State University Press, Ames, IA;253–265.2003
3. Lawrence L, Petrak ML. Diseases of the digestive system. In: M.L. Petrak (Ed.) Diseases of Cage and Aviary Birds. (ed 2). Lea & Feibiger, Philadelphia PA.432–448.1982.
4. Smits JE, Tella JL, Carret M, An epizootic of avian pox in endemic short-toed larks (*Calandrella rufescens*) and Berthelot's pipits (*Anthus berthelotti*) in the canary Islands. Span Vet Pathol.42:59–65.2005.
5. Bolte AL, Meurer J, Kaleta EF. Avian host spectrum of avipox viruses. Avian Pathol. 28:415–432.1999.
6. Van RC, Hansen RW. Epizootiology and effect of avian pox on Hawaiian forest birds. The Auk.119:929–942.2002.
7. Frederick R, Graham DL, Zenoble RD. Oral Lesions in Passerine and Psittacine Birds: A Differential Diagnosis. Iowa State University Veterinarian 44.1. 1986.
8. Pledger A. Avian pox virus infection in a mourning dove. Can Vet J .46.12.2005.

Case Number: 469
Slide No.: S2015-13688
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1143

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Hualien Tzu-Chi Hospital and Buddhist Tzu-Chi University (佛教慈濟綜合醫院暨慈濟大學)

CASE HISTORY

Signalment: A 53-year-old female, farmer, married.

Clinical History:

The patient was in her usual state until she noticed fever and chills, and went to Fongbin department of Hualien Hospital on October 17, 2015. On October 19, she went to Mennonite Hospital due to low abdominal pain with persistent fever. The patient was diagnosed as UTI and treated with Baktar. However, the symptoms progressed, and she also started to present with poor appetite and diarrhea with green color stool. On October 22 night, she went to Fongbin department again, where physical examination showed rash over trunk and an eschar over left buttock. The patient was disorientated and irritable. Generalized muscle soreness, jaundice, and severe diffused abdominal pain with muscle guarding were also noticed. Lab test revealed leukocytosis, acute kidney injury, pyuria, metabolic acidosis, elevated CRP, and direct hyperbilirubinemia. Abdominal CT disclosed hepatomegaly and splenomegaly. She was admitted to ICU and received treatment of ceftriaxone/ doxycycline and hydration.

On October 23, the patient was transferred to Hualien Tzu-Chi Hospital due to the request of the patient's family. Under the impression of severe sepsis and scrub typhus infection related AKI/ jaundice/ UTI, she was treated with Levofloxacin (Cravit) and Tigecyclin (Tygacil). On October 29, biopsy of the eschar showed necrotizing inflammation and leukocytoclastic vasculitis (LCV), which was later stained with 47kD and diagnosed as scrub typhus. On November 02, serology test confirmed the diagnosis.

Clinical Pathology:

O. tsutsugamushi	**10/23**	**10/31**	**11/02**
PCR	Positive	-	Undetectable
IgM	-	>1:160 Positive	Negative
IgG	-	1:320 Positive	Negative

Gross Findings:

Multiple erythematous macules and patches over the trunk and proximal 4 limbs. There was an eschar on left buttock of the patient.

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CASE RESULT

Histopathologic Findings: Eschar

Microscopically, it showed leukocytoclastic vasculitis (LCV), which is characterized by vascular damage caused by nuclear debris from infiltrating neutrophils. Fibrinoid necrosis and epidermal necrosis are also identified.

Histochemical and Immunohistochemistry stains:

47kD(+)

Serology:

O. tsutsugamushi PCR (+)

O. tsutsugamushi IgM (+)

O. tsutsugamushi IgG (+)

Differential Diagnosis:

Scrub typhus
Malaria
Dengue fever
Leptospirosis
Other rickettsial disease

Diagnosis: Scrub typhus

Discussion:

Scrub typhus is an important cause of acute undifferentiated fever that is endemic mainly in South-East Asia including India, Bangladesh, China, Taiwan, South Korea, Japan and Northern Australia. It is a potential life-threatening infectious disease, with the mortality rate reaching 30% if unrecognized or left untreated. This zoonotic rickettsial illness is caused by *Orientia tsutsugamushi*, which is transmitted by trombiculid mites. The clinical presentation varies, but usually characterized by sudden onset fever with chills, headache, backache and myalgia, vomiting and enlarged lymph nodes. In our patient, she presented mainly with fever, rash, myalgia, conscious disturbance, acute kidney injury and hepatic dysfunction.

The presence of eschar was identified on the left buttock in our patient, which suggested the diagnosis of scrub typhus. The clinical presentation of scrub typhus is easily confused with other undifferentiated acute febrile illness (AFI), including malaria, enteric fever, dengue, leptospirosis, spotted fever rickettsioses and Hanta virus. In the cases of scrub typhus, an eschar is found in 55%

of patients which develop at the site of chigger feeding, usually over axilla, groin and inguinal areas. Presence of and eschar should be carefully looked for, since it is characteristic of scrub typhus.

The pathophysiological hallmark of scrub typhus is disseminated vasculitis, in which infected endothelial cells, monocyte/macrophages and dermal dendritic cells lead to widespread vascular dysfunction involving skin, liver, brain, kidney, meninges and the lung. The organism multiplies at the site of inoculation that progress on to necrosis and evolves into an eschar with regional lymphadenopathy. The pathological picture of eschar and generalized rash predominantly showed a lymphocystic vasculitis. Cutaneous leukocytoclastic vasculitis (LCV) has also been reported in a much lesser frequency, which was identified in our patients. In cases of LCV, the infiltrate progressively changes from a preponderance of neutrophils over lymphocytes to a predominance of lymphocytes, as a continuum process. Since LCV is independently of its etiology, the immunohistochemical stain of 47kD is critical to demonstrate the presence of *O. tsutsugamushi* and support our diagnosis in this patient of scrub typhus.

Treatment should be initiated early in the course of the disease on the basis of a presumptive diagnosis. Patients treated with appropriate antibiotics typically within 48 hours of starting therapy, which may be useful diagnostically. Conventionally, the treatment of scrub typhus involves the use of tetracycline group of antibiotics and chloramphenicol. Levofloxacin and azithromycin also showed efficacy. In our patient, she was treated with levofloxacin, tegecycline and doxycycline. Supporting treatment is given due to organ dysfunction. After treatment, the renal, hepatic and respiratory function improved within two weeks, but the patient remained tetraparesis with dysphagia in rehab OPD. Physical therapy was arranged.

In conclusion, our case presented with features of vasculitis, acute kidney injury, hepatic dysfunction and encephalitis. An eschar was found on left buttock of the patient, which is pathognomonic for scrub typhus. The diagnosis was confirmed by PCR and serology test of IgM/IgG. Skin biopsy of eschar revealed features of LCV, which is rare in scrub typhus. Immunohistological stain of 47kD showed positive in some macrophage. The patient went under treatment of Doxycycline and supporting treatment, and recovered after two weeks.

Reference:

1. Peter JV, Sudarsan TI, Prakash JA, Varghese GM. *Severe scrub typhus infection: Clinical features, diagnostic challenges and management*. WJCCM 2015 August 4; 4(3): 244-250
2. SM Tsdng, YP Hsia, HJ Shih, YH Hsu, JH Yang. *Orientia Tsutsugamushi-Induced Leukocytoclastic Vasculitis- A Case Report*. Dermatol Sinica2007;25:142-6
3. Arinaganahalli Subbanna Praveen Kumar, Anupama Monohar Prasad, Lakshmi Gumpeny, and Revena Siddappa. *Leukocytoclastic vasculitis and polyarthralgia in scrub typhus: An unusual presentation.* Internal Journal of Medicine and Public Health 2013; vol 3;352-4
4. Moron CG, Popov VL, Feng HM, Wear D, Walker DH. *Identification of the Target Cells of Orientia tsutsugamushi in Human Cases of Scrub typhus*. Mod Pathol. 2001 Aug;14(8):752-9.
5. Paris DH, Phetsouvanh R, Tanganuchitcharnchai A, Jones M, Jenjaroen K, Vongsouvath M, Ferguson DP, Blacksell SD, Newton PN, Day NP, Turner GD. *Orientia tsutsugamushi in Human Scrub Typhus Eschars shows Tropism for Dendritic Cells and Monocytes Rather Than Endothelium.* PLoS One 2012 ;6:1-13

Case Number: 470

Slide No.: CP16-0403D

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1144

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CASE HISTORY

Signalment: 27 week-old chickens

Clinical History:

The owner of Taichung layer farm had 200 chickens; he claimed that the number of dead chickens increased in one week since 18th April, 2016. The age of onset was 27-week-old. Accumulative mortality in one week was 5%. Two and five 27-week-old dead chickens were submitted to Animal Disease Diagnostic Center of National Chung Hsing University for pathological examination on 21st and 22nd April, 2016, respectively.

Gross Findings:

These chickens were in fair nutritional state. The average body weight of these chickens was 2.17 kg. On external examination, their combs were pale. There were several red pinpoint lesions on combs, wattles and periocular skin. On necropsy, the chickens showed excessive abdominal fat. Ascites and multifocal petechial hemorrhage were noted on the serosa of small intestines, hepatic surface, mucosa of proventriculus and ovaries. Coagulated blood clots were noted in the abdominal cavity.

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CASE RESULT

Histopathologic Findings:

On the microscopic examination, many megaloschizonts which measured up to 450 μm in diameter were found in various organs examined including the proventriculus, ventriculus, kidney, lung, oviduct, small intestine, pancreas and comb. Megaloschizonts contained numerous basophilic schizonts (100 μm in diameter) in round unilocular structures surrounded by well-defined eosinophilic capsular walls. Released merozoites and defective capsules induced infiltration with lymphocytes, macrophages and foreign-body giant cells around the periphery of the degenerated megaloschizont capsules. In liver, kidney and oviduct, multifocal hemorrhage was observed and some merozoites could be seen in the liver sinusoid. The serosa of small intestine was infiltrated by some hemosiderin-laden macrophages and lymphocytes.

Morphological diagnosis:

1. Protozoal megaloschizonts infection, multifocal, moderate, chronic, multiple organs including comb, proventriculus, ventriculus, oviducts, lung, liver, kidney and pancreas.
2. Granulomatous pneumonia, multifocal, chronic, moderate, lung.
3. Granulomatous ventriculitis, focal, chronic, mild, ventriculus.
4. Granulomatous nephritis, multifocal, chronic, moderate, kidney.
5. Necrosis with hemorrhage, multifocal, acute to subacute, moderate, liver and kidney.
6. Hemosiderin deposition, multifocal, chronic, mild, serosa of intestine.

Differential Diagnosis:

1. Blood protozoan parasites in chicken

Leucocytozoon

Plasmodium

Haemoproteus

2. Nutritional Disease

Fatty liver hemorrhagic syndrome

Diagnosis: Leucocytozoonosis in chickens

Discussion:

Leucocytozoonosis is a vector-borne protozoal disease transmitted by blood-sucking insects that infect many species of domestic and wild birds, especially in open chicken houses of southern and eastern Asia. Young chicks die due to marked hemorrhage, and hens lay fewer eggs in conjunction with anemia and production of soft-shelled eggs, caused economic loss in layer farms.

In Taiwan, *Leucocytozoon caulleryi, Leucocytozoon andrewsi*, and *Leucocytozoon sabrazesi*

have been described and *L. caulleryi* was the most significant pathogen. In this case, characteristic megaloschizonts specific for *L. caulleryi* found in several organs provide definitive diagnosis for leucocytozoonosis. Other differential diagnosis including Plasmodium, Haemoproteus infection and fatty liver hemorrhagic syndrome could be ruled out by histopathological exam and blood smear.

The domestic chicken is the only reported host for *L. caulleryi*, which was transmitted by *Culicoides arakawae*, a blood-sucking vector. Its life cycle requires 2 hosts; sporogony is in insects, schizogony and gametogony are in tissues and blood cells, respectively, of chickens. Therefore, the occurrence of chicken leucocytozoonosis is strongly associated with the insect vector population and distribution. *C. arakawae* is highly host specific for chickens and exist year-round in south central Taiwan, attribute to the warm and humid weather. It has been reported that chicken leucocytozoonosis begins at the end of April and the mortality and morbidity are highest from the end of April to the middle of June. In this case, the layer farm was a windowless house, but still had a mild outbreak at the middle of April, due to the neglect of turning on the bug zapper. The mortality decreased in 2 weeks, since the course of disease is short, chickens died or recovered within a few days.

Chickens affected with leucocytozoonosis may show clinical signs 12-14 days after infection. Those are visibly affected show mild to severe signs of anorexia, weakness, anemia, emaciation and dyspnea. Chickens may die acutely at the time of massive soft tissue hemorrhage caused by 2nd generation megaloschizont rupture. The mortality was high in young chickens and the hens mostly show anemia and the cessation of egg production. In this case, sudden death of hens was noted by the owner. Suspicion of leucocytozoonosis was due to pale combs and soft tissue hemorrhage observed on necropsy.

A diagnosis can be made by the demonstration of gametocytes in blood smears and megaloschizonts in histopathological examination. In this case, different stages of megaloschizonts were observed in various organs. Drug treatment of this disease is usually not effective. Sulfamonomethoxine and ormetoprin combined in the pullet feed can be used for preventive medication until 16-week-old and the withdrawal period is 5 days.

The vaccine which used a recombinant protein from 2nd generation of *L. caulleryi* schizonts can reduce the mortality but not the infection rate. However, the most effective preventing method is elimination the insect vector from the farm, such as using repellents and bug zappers. To prevent the outbreaks and economic loss, biosecurity, environmental sanitation and epidemic prediction should be concerned.

Reference:

1. Lee HR, Koo BS, Jeon EO, Han SM, Min CK, Lee SB, Bae Y, Mo IP. Pathology and molecular characterization of recent *Leucocytozoon caulleryi* cases in layer flocks. J Biomed Res 30(6): 1-8. 2016.
2. Lee DH, Jang JH, Kim BY, Kwon YK, Gomis S, Lee JB, Park SY, Choi IS, Song CS. Diagnosis of *Leucocytozoon caulleryi* infection in commercial broiler breeders in South Korea. Avian Dis 58: 183-186. 2014.
3. Nakamura, K, Ogiso, M, Shibahara, T, Kasuga, H, Isobe, T. Pathogenicity of *Leucocytozoon caulleryi* for Specific Pathogen-Free Laying Hens. J Parasitol 87(5): 1202-1204. 2001.
4. Yu CY, Wang JS, Yeh CC. *Culicoides arakawae* (Diptera: Ceratopogonidae) population succession in relation to leucocytozoonosis prevalence on a chicken farm in Taiwan. Vet Parasitol 93: 113-120. 2000.
5. Yu CY, Wang JS. *Culicoides arakawae* (Diptera: Ceratopogonidae) efficiently blood-fed and infected with *Leucocytozoon caulleryi* through a natural membrane. Vet Parasitol 99: 297-303. 2001.

Case Number: 471

Slide No.: NTU2013-0884A, NTU2013-0884B

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1141
http://www.ivp.nchu.edu.tw/slide_view.php?id=1142

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CASE HISTORY

Signalment: Adult female Nicobar pigeon (*Caloenas nicobarica*)

Clinical History:

Per clinician, the animal presented fairly normal spirit and appetite with no apparent abnormal clinical signs prior to death. Necropsy was routinely performed.

Gross Findings:

The animal was in a relatively reasonable body condition with fair muscle mass of *pectus carinatum* and external and internal fat stores. Both lungs were diffusely flushed in appearance, whereas the kidney and spleen were mildly to moderately enlarged with rounded edges. The gizzard appeared slightly enlarged and firm in consistency, and contained two semi-circular stone-like materials within the gizzard. No remarkable findings were identified in other tissue organs.

Case Number: 471

CASE RESULT

Histopathological Findings:

Microscopically, there is notable schizogony (merogony), featured by oval to round, 13-20 μm thin wall cysts containing numerous, tightly packed, round, elongate to crescentic, and basophilic apicomplexans (merozoites), within endothelial cells in virtually all tissue organs, including the liver, lung, heart, spleen, and kidney.

1. **Liver:** Multifocally distributed throughout the hepatic parenchyma are vasocentric inflammatory cell aggregates comprising primarily small lymphocytes, plasma cells, and some histiocytes with scattered heterophils. Extensively invading the endothelial lining of the central and portal veins as well as the hepatic sinusoids, readily eroding their vascular wall, and even disrupting the adjacent hepatic cords are quite a quantity of schizonts laden with clumps of basophilic merozoites. The affected endothelial cells often appear rounded and markedly swollen, with the pre-existing nuclei being obscured by the heavily colonized schizonts. The nearby hepatocytes, on the other hand, undergo areas of degenerative to necrotic changes characterized by cytoplasmic vacuolation to hypereosinophilia, pyknosis, karyolysis and karyorrhexis. On occasion, golden brown granular pigment is present, either extracellularly or intracellularly, within hepatocytes, erythrocytes and Kupffer cells.
2. **Lung:** There is widespread presence of parasitic schizonts within the endothelial lining of the dilated and congested vasculatures. The capillary endothelial cells are often distended by these schizonts, with the vascular lumen being partially to completely occluded. The schizonts also invade, occupy, and even destroy the alveolar wall, as evidenced by the concomitant relative hypercellularity of the interstitium. Multifocal and mild accumulation of black to brownish carbon dust and infiltration of small crystal-bearing alveolar macrophages are also present.
3. **Kidney:** Intra-endothelial colonization of schizonts just similar to those mentioned-above is also demonstrated in the interstitial tubular capillary network and glomerular capillary tuft.
4. **Spleen:** Likewise, extensive capillary endothelial lesions produced by abovementioned space-occupying schizonts are revealed. Hemosiderin-laden macrophages are also noted.
5. **Heart:** Destructive schizonts similar to those described previously are simultaneously seen in the endothelial cells of the myocardial blood vessels.
6. **Other organs and tissues not depicted:** No remarkable changes are seen, aside from a varying degree of postmortem autolysis.

Morphological diagnosis:

1. Hepatitis, lymphohistiocytic, subacute, multifocal, mild to moderate, with numerous intra-endothelial hemoprotozoal schizonts, liver.
2. Congestion, diffuse, marked, with anthracosis and intra-endothelial hemoprotozoal schizonts,

lungs.

3. Colonization of intra-endothelial hemoprotozoal schizonts, kidney, spleen, and heart.

Differential Diagnosis:

1. Haemosporidiosis (*Haemoproteus* infection)
2. Avian Malaria (*Plasmodium* infection)
3. Leucocytozoonosis (*Leukocytozoon* infection)

Final Diagnosis:

Haemosporidian parasite infection, most likely haemosporidiosis, with parasitemia and systemic involvement of the lung, kidney, liver, heart, and spleen, Nicobar pigeon

Discussion:

Hemoparasitism in birds typically encompasses 3 genera of Apicomplexan parasites in the family Plasmodiidae, including *Haemoproteus*, *Plasmodium*, and *Leukocytozoon*. Species of these parasite genera share several characters with human malaria parasites, and all 3 (but most often only *Plasmodium* spp.) are referred to as avian malaria. All of them are transmitted by a variety of biting insect vectors, which vary based upon the specific parasite, geographic location, and distribution. They are known to infect and inhabit red blood cells, in the case of Leucocytozoon spp., also white blood cells, as well as other tissue organs within the vertebrate hosts. These protozoa can cause diverse clinical manifestations that range from serious, clinically significant illness to asymptomatic infection. In general, Plasmodium and Leucocytozoon species are capable of bringing about more severe disease, while species of Haemoproteus are generally considered less pathogenic. Infections with most Haemoproteus species appear to produce subclinical infections and are often viewed as asymptomatic carriers, mainly causing chronic parasitaemia. By contrast, Leucocytozoon and Plasmodium infection in birds is often associated with progressive weakness such as anemia, reduced food consumption, and activity levels.

For differential diagnosis, hepatomegaly and splenomegaly may be seen in infection with all three genera, but Plasmodium and Haemoproteus infection appears to result in production of hemozoin pigment from digestion of hemoglobin, hence giving a black or brown appearance to the organs in gross. Leucocytozoon infection, on the other hand, does not result in production of hemozoin pigment, so organs generally won’t show the dark chocolate-brown discoloration. Clinically, a presumptive diagnosis can be made based on microscopic examination of a blood smear, and the appearance of the parasite in erythrocytes. Leucocytozoon often causes the most dramatic change in RBC structure and will severely distort host cells, with vivid enlargement of RBCs and formation of hornlike extensions at each end of the cells. With Haemoproteus and Plasmodium, less dramatic changes are seen and include slight enlargement of the cells, lateral displacement of the nucleus, hemozoin pigment, and the presence of gametocyte nuclei. Histopathologically, megaloschizonts are frequently present in tissues in cases of leucocytozoonosis

and with infection of some species of Haemoproteus, but are never a characteristic feature of *Plasmodium* spp. However, since the different hemoprotozoa can still cause similar overlapping lesions, both grossly as well as histologically, molecular diagnostic tool like polymerase chain reaction (PCR) is often required in order to reach a definitive etiological diagnosis.

Haemoproteus and Plasmodium are distributed worldwide with high species diversity. Haemoproteus spp. is the most common blood parasite in birds, with more than 120 reported species, among which pigeons, doves, and raptors are frequently infected. The typical life cycle of Haemoproteus begins with gametocyte development in host circulating erythrocytes, which are later taken up by blood-sucking vectors. Biting flies, characteristically louse flies (*Hippoboscidae*) and biting midges (*Ceratopogonidae*) are capable of transmitting the protozoa. The ingested parasite undergoes several stages of development within the insect host to become sporozoites that are harbored within the insect's salivary gland. These sporozoites are injected into a new susceptible host when the insect feeds on other animals. The sporozoites then enter the bird's endothelial cells and tissues (such as lung, liver, bone marrow, and spleen), undergo schizogony, and may form large round cysts (called megaloschizonts) containing multinucleated bodies (cytomeres) that in turn produce numerous merozoites. The merozoites eventually escape into the bloodstream and get into intravascular red blood cells to become gametocytes (macrogametes and microgametes). Clinical disease of Haemoproteus infection is typically associated with anemia due to erythrocytic parasitism, often seen in a compromised or immunocompromised individual. Besides, few species of Haemoproteus are reported to induce clinical disease, including *H. meleagridis* in turkeys, *H. mettionis* in ducks and geese, and *H. columbae* in pigeons and doves.

In the present case, the etiology is speculated as Hemoproteous infection based on the clinical manifestation and histopathological findings. Still, there is another possible pathogen, namely Plasmodium, which cannot be fully precluded, as both hemoparasites may share similar morphological features in blood smears and histopathology. Further molecular test is proposed to clarify the exact causative agent in this case.

Reference:

1. Atkinson CT. Haemoproteus. In: Thomas NJ, Hundter DB, eds. Parasitic Diseases of Wild Birds. Ames, Iowa: Blackwell Publishing. 13-34, 2008.
2. Atkinson CT, Greiner EC, Forrester DJ. Pre-erythrocytic development and associated host responses to Haemoproteus meleagridis (haemosporina: Haemoproteidae) in experimentally infected domestic turkeys. J Protozool (33): 375-381, 1986.
3. Bensch S, Stjernman M, Hasselquist D, Ostman O, Hansson B, Westerdahl H, Pinheiro RT. Host specificity in avian blood parasites: a study of Plasmodium and Haemoproteus mitochondrial DNA amplified from birds. Proceedings of the Royal Society of London, B: Biological Sciences (267): 1583-1589, 2000.
4. Bermudez AJ. Miscellaneous and sporadic protozoal infections. In: Calnek BW, ed. Diseases of Poultry, 11th ed. Ames, Iowa: Iowa State Press. 1010-1015. 2003.
5. Bueno MG, Lopez RP, de Menezes RM, Costa-Nascimento Mde J, Lima GF, et al. Identification of Plasmodium relictum causing mortality in penguins (Spheniscus magellanicus) from São Paulo Zoo, Brazil. Vet Parasitol (11). 123-127, 2010.
6. Ferrel ST, Snowden K, Marlar AB, Garner M, Lung NP. Fatal hemoprotozoal infections in multiple avian species in a zoological park. J Zoo Wildl Med (38): 309-316, 2007.
7. Gardiner CH, Fayer R, Dubey JP. Apicomplexa: Haemoproteus and Haemosporozoa of undetermined taxonomic status. In: Washington DC, ed. An Atlas of Protozoan Parasites in Animal Tissues, 2nd ed. Armed Forces Institute of Pathology, American Registry of Pathology. 74-75. 1998.
8. Peirce, MA. Hematozoa. In: Samour J ed. Avian Medicine. Mosby, Elsevier Science Limited, Philadelphia, PA. 247-248. 2003.
9. Vanstreels RE, Kolesnikovas CK, Sandri S, Silveira P, Belo NO, Ferreira Junior FC, et al. Outbreak of avian malaria associated to multiple species of Plasmodium in magellanic penguins undergoing rehabilitation in southern Brazil. PLoS One (9). e94994, 2014.

Case Number: 472
Slide No.: CW16-057B
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1145

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CASE HISTORY

Signalment: The patient was a four-month-old male African grey parrot.

Clinical history:

On April 14th 2016, the egg was smuggled in through Kinmen. Two months after hatching, the bird was sent to the local Wildlife Rescue Center. On July 28th 2016, the patient showed depression, choked easily and wheezing sounds could be heard. Lung auscultation revealed respiratory sounds, vomiting occurred easily when force feeding was attempted and delayed crop emptying was observed in the clinic. Radiological examination showed enlargement of the liver and kidneys. Viral infection was suspected at that time. Thus, the breeder sent blood and fecal samples for PCR testing. The results showed a positive reaction for BFDV in the feces and APV in the blood. On the morning of August 5th, 2016, the patient was found dead and submitted to the Animal Disease Diagnostic Center for pathological examination.

Molecular Biological Examination:

The feces were positive for the virus of beak and feather disease and the blood sample was positive for avian polyomavirus which were detected by PCR method.

Gross Findings:

Organs were adhered with numerous yellow-white necrotic matters mainly in the lungs. Ascites was also found in body cavity. Liver was enlarged and mottled with yellow necrotic lesions. Spleen was enlarged and mottled, too. Kidney was enlarged and pale. The ratio between the glandular stomach and muscular stomach was 2: 1. Multiple ulcers were found on the surface of muscular stomach.

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CASE RESULT

Histopathologic Findings:

Diffuse, moderate, necrosis with lymphocytic depletion was noted in the spleen. Liver presented multiple to diffuse necrosis and/or massive necrosis of hepatocytes with numerous debris and few lymphocytes. Suspected basophilic intranuclear inclusion bodies were found in the liver. There was multiple necrosis with numerous debris and few lymphocytes infiltrating in the kidneys. Edema and infiltration of hemorrhage, fibrin, inflammatory cells and mycelium was observed upon the air sac. Focal hemorrhage was also found in the myocardium. There was loss of normal structure and perivascular edema in the lung. Pulmonary interstitial spaces, secondary bronchi, and parabronchi were infiltrated by inflammatory cells, mycelium and hemorrhage. Other regions of lung included septate hyphaes and swollen vesicular conidiophore vesicles in the air space area with heterophilic and macrophagic infiltration could be found under either H&E or PAS stains.

Microbiological Examination:

The sample taken from the lung, liver and kidney were smeared to MacConkey agar and blood agar. Mold colony gained on blood agar. It was cultivated on Sabouraud Dextrose agar. The feature of fungi was grey-green colony, transparent hyphae and goblet-shaped conidiophore vesicles.

Molecular Biological Examination:

The brain was negative for the avian Bornavirus using RT-PCR.

Differential Diagnosis:

Aspergillosis,
Bacterial infection,
PBFDV infection,
APV infection, Candidiasis

Diagnosis:

Suspected viral infection with secondary aspergillosis in an African grey parrot

Discussion:

Polyomavirus infection was first described in Budgerigars (Budgerigar fledgling disease) but it has been found in other parrots, especially lovebirds, macaws and eclectus parrots[(3)]. The pathogen is very stable in the environment and is spread through persistent shedding from latently infected adult birds (mainly Budgerigars) and via fomites. The virus is excreted in feces as well as skin and feather dust and can be transferred vertically. Latently infected adult birds transmit the virus to their immunoincompetent[(5)]. Polyomaviruses typically reside in a latent state and infections become

patent following periods of excessive stress[4].

Psittacine beak and feather disease (PBFD) is caused by a very small circovirus and is one of the most common and most important viral diseases of psittacine birds. The pathogen is very stable in the environment and it is suggested that it remains infectious for years. The disease is common in newly purchased hand-reared parrots, especially Grey Parrots. The virus prefers dividing cells. The target organs for the virus are primarily replicating immune tissue (cloacal bursa and thymus), but also skin and feather follicles as well as esophagus and crop cells and bone marrow. Therefore, in addition to feather loss and malformation, PBFD can also be a fatal systemic problem featuring severe immunodeficiency. The disease shows signs of anemia and various secondary infections, especially aspergillosis[5].

The APV- and PBFDV-positive rates for birds showing clinical signs of infection were not significantly different from those for birds appearing healthy. Approximately one third of the birds examined were African Grey Parrots (Psittacus erithacus); the APV- and PBFDV-positive rate for these birds were 9.3% and 50%, respectively. The second most common species was Sulphur-crested Cockatoo (Cacatus galerita), for which the APV- and PBFDV-positive rates were 5.9% and 82.4%, respectively. The third most common was the Budgerigar (Melopsisttacus undulates), for which the APV- and PBFDV-positive rates were 6.3% and 18.8%, respectively[2].

Inhalation is considered the main infection route for *A. fumigatus* in birds and because *A. fumigatus* spores are too small to be trapped completely in the nasal cavity or trachea, some are able to reach the lungs and air sacs. The air sacs are usually the primary infection sites, since inhaled air reaches the posterior thoracic and abdominal air sacs prior to contacting epithelial surfaces in the lungs. Clinical manifestations depend on the infective dose, the spore distribution, pre-existing diseases, and the immune response of the host. Avian aspergillosis is often classified as acute or chronic. Acute aspergillosis is thought to be the result of inhaling an overwhelming number of spores, while chronic aspergillosis is generally associated with immune suppression. Although aspergillosis is predominantly a disease of the respiratory tract, any organ can be infected. The signs of aspergillosis are non-specific, making diagnosis difficult. Moreover, no single test provides certainty. On necropsy, the yellow, green or white granulomatous foci can be noted in chronic aspergillosis patients. Acute aspergillosis causes numerous miliary granulomatous foci. Definitive diagnosis requires demonstration of the presence of the organism by cytology or histopathology and its identification by culture[1].

Reference:

1. Beernaert LA, Pasmans F, Waeyenberghe LV, Haesebrouck F, Martel A. Aspergillus infections in birds: a review. *Avian Pathol* **39**: 325-331, 2010.
2. Hsu CM, Ko CY, Tsai HJ. Detection and sequence analysis of avian polyomavirus and psittacine beak and feather disease virus from psittacine birds in Taiwan. *Avian Dis* **50**: 348-353, 2006.
3. Johne R., Muller H, Avian polymavirus in wild birds: genome analysis of isolates from falconiformes and psittaciformes. *Arch Virol* **143**: 1501-1512, 1998.
4. Ramis A, Latimer KS, Gibert X, Campagnoli R. A concurrent outbreak of psittacine beak and feather disease virus, and avian polyomavirus infection in budgerigars (Melopsittacus undulatus). *Avian Pathol* **27**: 43-50, 1998.
5. Michael L. Systemic infectious disease. In: Nigel HB, John C. eds. BSAVA Manual of Psittacine Birds. 2nd ed. British Small Animal Veterinary Association, Gloucester, 157-160, 2005.

Case Number: 473
Slide No.: CO16-374
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1138

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CASE HISTORY

Signalment: A five-year-old intact male guinea pig.

Clinical History:

The patient was a five-year-old intact male guinea pig. Swelling and abnormal discharge were noticed in the left side of the mammary gland 4 months ago. The patient was taken to Veterinary Medical Teaching Hospital of National Chung Hsing University on May 27th, 2016. In clinical examination, a small wound was found on the swollen mammary gland. In palpation, a firm mass which was relatively cold and painless was noticed in the left testicle of mammary gland area The tentative diagnosis was made as left side mammary gland mass. Mammaectomy was performed on June 7th. The surgically removed mass was 5×2×2 cm in size and 7.6 g in weight, and yellowish nodular structures could be found on cross section. The mass was sent to Animal Disease Diagnostic Center of National Chung Hsing University for pathological examination.

Gross Findings:

The mass was white to yellowish, about 5×2×2 cm in size, and 7.6 g in weight. Most of mass was distinguished with normal tissue by capsule. A part of mass was directly attached on skin without capsule. Yellowish nodular structures with partial hemorrhage could be found on cross section.

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CASE RESULT

Histopathologic Findings:

Part of the tissue boundaries was not obvious with a low magnification. The tumor cells arranged in tubular structure with lots of eosinophilic secretion inside, another part of the tumor cells arranged solid. Part of melanocytes were arranged with the tubular form tumor cells. The tumor has a high mitotic index, averaging 3-5 mitotic figures per 400× field with pleomorphic and vacuolar nuclei. The secretion inside the tubular-form tumor cells showed positive for PAS (periodic acid-Schiff) stain.

Immunohistochemistry Findings:

Immunohistochemistry results showed strong positive reaction of AE1/AE3 and weak positive reaction of HER-2/neu (human epidermal growth factor receptor 2). In Melan-A, ER (estrogen receptor), and PR (progesterone receptor) IHC stain, negative reaction were noticed.'=

Differential Diagnosis:

1. Simple mammary gland adenocarcinoma
2. Melanoma
3. Sebaceous adenoma

Diagnosis:

Simple mammary gland adenocarcinoma

Discussion:

Guinea pig (*Cavia porcellus*) is a small herbivore mammal from South America. In Taiwan, it is bred as laboratory animal or pet. Most common pet guinea pigs are America, Abyssinian, and Peruvian guinea pigs. The male guinea pig is 700-1200 g in weight and males are bigger than females. The average life span of guinea pig is 5-7 years.

The incidence of primary tumors in guinea pigs is relatively low. Most of primary tumor cases were found in guinea pigs older than three years old and the morbidity was about 30%. The most common primary tumors are bronchogenic papillary neoplasia, trichofolliculoma, leiomyoma, and mammary gland tumor. In elder guinea pigs, the incidence of mammary gland tumor in male and female have no significantly difference. In the cases of mammary gland tumor in guinea pigs, 70% of them were benign fibroadenomas, only a few proportion were malignant mammary gland tumor. The pathogenesis of mammary gland tumor in guinea pig was still unclear. Some reference surmised that the mammary gland tumor may be induced by hormone, environment, or oncovirus

infection.

In this case, swollen and alopecia were observed around the left mammary gland. In palpation, the mass was firm, without pain or warmth. According to the palpation, the differential diagnosis of abscess was ruled out. The tentative diagnosis was mammary gland mass. In histopathologic examination, the incomplete capsulation and ambiguous boundary of the tumor was noticed. As result, the tumor was invasive. The tumor arranged in tubular structure with lots of eosinophilic secretion inside. In another parts of the tumor, it was arranged in solid. Some melanocytes were observed in the dermis and parts of the tumor, and some of them arranged in tubular. The tumor has a high mitotic index, averaging 3-5 mitotic figures per 400X field with pleomorphic and vacuolar nuclei. Base on the high mitotic index, solid arrangement, incomplete capsulation, and ambiguous boundary, the tumor shall be malignant.

The differential diagnosis of mammary gland tumor, sebaceous adenocarcinoma, and melanoma were made. To identify the eosinophilic secretion in the tubular structure, the PAS stain was made. The result of PAS stain was positive in the eosinophilic secretion, which strongly implied that it was milk. The immunohistochemistry stain of AE1/AE3, Mela-A, ER, PR, Her2/neu, and AE1/AE3 were made. Strong positive staining was observed in the AE1/AE3 stain. The positive result in AE1/AE3 indicated that the tumor was epithelial origin. The ER and PR stain were negative in the tumor and normal mammary gland tissue. Therefore, the staining result might be false negative. In the Her2/neu stain was weak positive in the cell membrane of tumor cells. The positive staining of Her2/neu and PAS stain might indicate that the tumor was mammary gland origin and rule out the sebaceous adenocarcinoma. The result of Mela-A stain was negative in the tumor cells without melanin. The negative result of Mela-A stain ruled out melanoma. The melanosis in the subcutaneous and tumor might due to the stimulation of tumor. Base on all the IHC stain results, the mammary gland origin of the tumor was confirmed.

The malignant mammary gland tumors were distinguished to many different types such as complex carcinoma, simple carcinoma, spindle cell carcinoma, squamous cell carcinoma, and lipid-rich carcinoma, etc. In this case, the arrangements of tumor cells were tubular and solid. The luminal epithelial cells were observed, but the myoepithelial cells were not found. As a result, the diagnosis of simple mammary gland adenocarcinoma was made.

Reference:

1. Amorim I, Faria F, Rema A, Gärtner F. Immunohistochemical Characterization of a Mammary Carcinoma in a Male Guinea Pig (Cavia porcellus). J Comp Pathol 141:279, 2009.
2. Harkness JE, Turner PV, VandeWoude S, Wheler CL. Clinical signs and differential diagnoses. In: Harkness and Wagner's Biology and Medicine of Rabbits and Rodents. 8 John Wiley & Sons, Iowa, 208-218, 2013.
3. Hawkins MG, Bishop CR. Disease problems of guinea pigs. In: Quesenberry KE, Carpenter JW, eds. Ferrets, Rabbits, and Rodents: Clinical Medicine and Surgery, 3rd ed. Elsevier Health Sciences, St. Louis, 295-310, 2012.
4. Misdorp W. Tumors of the mammary gland. In: Meuten DJ, ed. Tumors in domestic animals, 4th ed. Blackwell publishing company, Iowa State, 575-606, 2002.
5. Rosenthal KL. Small mammals. In: Rosenthal KL, Forbes N, Frye FL, Lewbart GA, eds. Rapid Review of Exotic Animal Medicine and Husbandry: Pet Mammals, Birds, Reptiles, Amphibians and Fish. Manson publishing, Boca Raton, 73, 2008.
6. Riggs SM. Guinea pig. In: Mitchell MA, Tully TN, eds. Manual of Exotic Pet Practice. Elsevier Health Sciences, London, 456-473, 2009.

Case Number: 474

Slide No.: CW14-081A

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=1139

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CASE HISTORY

Signalment: The patient was 107 grams, unknown age intact male Pallas's squirrel

Clinical History:

The patient was an intact male Pallas's squirrel (*Callosciurus erythraeus*) of unknown age. On October 6th, 2016, a civilian found the patient unable to move under a tree in an elementary school of the county of Miaoli, thus sent it to the Endemic Species Research Institute, Council of Agriculture (wildlife rescue center). Its spirit and appetite were poor. After a few days of fluid therapy and feeding, it was moved to a larger place with perches. At first, it showed signs of improvement. The patient was able to climb up the perch and lick the feed on its own, and it gained some weight on October 11th. However, on October 16th, the patient was found in lateral recumbency with weak hind limbs, while the spirit and appetite were still normal. Meloxicam was given to relieve its symptoms daily, afterwards. On the following 5 days, weakness of the hind limbs was getting worse, and even the fore limbs started to lose strength. The patient was constantly in lateral recumbency, depressed, and gradually lost the ability to swallow. It was then forced fed with the soft tube of a butterfly needle. Trimeprazine and sulfa BID were added to the prescription on October 18th for treatment. On October 20th, the patient was found dead, and was transmitted to National Chung Hsing University for pathological examination

Gross Findings:

The patient was 107 grams, and no significant trauma was found. In the abdomen, the stomach was enlarged, the surface was yellowish, and the lumen was filled with liquid. At the root of the tongue, mild hemorrhage was found, and petechial hemorrhage was also spotted in the tonsils. In the laryngeal trachea, bubbles and mucus were noticed. On the liver surface, multifocal dark-red

spots were found, while some parts were pale. In the section of these pale parts, small round lesions with pale color could be seen. Splenic atrophy was suspected because it was smaller than usual, and one end was pale. On the cross section of the kidney, mild striped hemorrhagic lesions were noted on the border of the cortex and medulla. Severe diffuse hyperemia and hemorrhage was found in the brain, and mild hyperemia was found on the surface of the spinal cord.

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CASE RESULT

Histopathologic Findings:

The gyrus was distended and severely infiltrated by inflammatory cells. Hyperemia in the blood vessels of meninges and cross sections of parasites were observed in both the meninges and the gyrus of cerebrum. Focal necrosis with inflammatory cell infiltration was also found in the parenchyma that might be caused by migration of the larvae. On the high power field, the inflammatory cells infiltrated in the meninges and parenchymas were identified as mainly eosinophils and neutrophils. In the folium and the parenchyma of cerebellum, cross section of parasites, and accompanied with severely eosinophilic and neutrophilic infiltration were also found, too. The nematodes had eosinophilic, hyalinized, anisotropic and smooth cuticle lined by coelomyarian-polymyarian musculature. These nematodes expressed the characters of *Parastrongylus* sp. (*Angiostrongylus* sp.).

Focal emphysema, hyperemic and hemorrhagic lesions were found in the parenchyma of lungs. Cross section of parasites was found around some of the bronchus, which was surrounded by a great amount of eosinophils. Multifocal fatty change of hepatocytes was found around the portal vein area of liver. Focal demyelination was found in some parts of the white matter in the spinal cord. Around the spinal cord, focal hemorrhagic lesions and eosinophilic infiltration were also noticed. In other organs, such as the heart, the spleen, the kidneys and the digestive system, no significant lesions are found.

Stamp smear:

In the stamp smear of the brain, filiform body and pointed tail was found. The esophagus was transparent and even in width. The intestine was wide, thin-walled and much longer than the esophagus. The head was smoothly rounded without lips or buccal cavity. The vulva and anus could be seen and there were also two premature uterine tubules. It matched the morphology of the fourth stage female larva of *Angiostrongylus*.

Histochemical staining:

The pseudocoelom contained an intestinal tract with paired excretory glands were pinkly stained by PAS staining.

Morphological diagnosis:

1. Parasitic meningoencephalitis, diffuse, severe, acute to subacute, with eosinophilic infiltration, brain.
2. Parasitic interstitial pneumonia, focal, moderate, acute to subacute, with emphysema and eosinophilic infiltration, lung.

3. Fatty change, focal, mild, subacute, liver.

Differential Diagnosis:

1. Bacterial meningoencephalitis (Salmonellosis, Streptococcosis)
2. Viral meningoencephalitis (Rabies, Lymphocytic choriomeningitis)
3. Protozoa infection (Toxoplasmosis)
4. Accidental trauma

Etiological diagnosis: Parastrongyliasis (Previously called Angiostrongyliasis)

Discussion:

In this case, *Angiostrongylus cantonensis* caused severe diffuse eosinophilic meningitis, which led to the patient's death. *A. cantonensis* is the most common cause of eosinophilic meningitis (*Angiostrongylus* eosinophilic meningitis, AEM). It is distributed globally and mainly in the eastern hemisphere. Eosinophilic meningitis is a relatively rare pathologic phenomenon, and the definition is the presence of 10 or more eosinophils/μL in the cerebrospinal fluid (CSF), or a CSF eosinophilia of at least 10% [(12)]. Eosinophilic meningitis can be seen as an indication of CNS damage, especially by parasitic pathogens.

The most common route of *A. cantonensis* infection is through direct ingestion of a raw or undercooked intermediate host, such as a terrestrial or freshwater mollusc. Although Pallas's squirrels are omnivores, the chances of consuming snails are still low as they mostly feed on fruits and nuts. Therefore, in this case, the most possible route of infection may be ingestion of infected planarians on the fruits or vegetables [(5)]. The less possible route of infection is by ingesting food polluted by secretions from infected snails or slugs [(13, 14)].

Despite the parasites being unable to complete its life cycle in incidental hosts most of the time, the host would still be severely affected and might even die when a large amount of worms are involved [(4)]. *A. cantonensis* can be found in the lung in this case, which indicates that L5 larvae are present. As a result, the day post infection should be at least 25 days (25 dpi) [(9)]. According to the history as well as the incubation period of the disease (depending on the number of the larvae consumed, the range is from 1 day to several months, with a median of 11 days following ingestion), the patient was most likely infected before being hospitalized.

A. cantonensis is a zoonotic pathogen, but humans are dead-end hosts (meaning an infected person can't transmit the parasite). If a person is infected, the migration of larvae can cause several clinical signs. Hepatomegaly, coughing, rhinorrhea, sore throat, malaise and fever are all possible clinical manifestations. When larvae enter the CNS, eosinophilic meningitis and eosinophilic pleocytosis often occurs. Sometimes the larvae will enter the ocular chamber leading to visual disturbances. Diplopia and strabismus are common results [(8)].

Golden standard for diagnosis is through the detection of *A. cantonensis* (larvae or adults) in CSF or the ocular chamber. However, the sensitivity of these methods is low (approximately 2-11%)

[6]. Furthermore, the cause of death was not thought to be parasites when the autopsy was performed, so such examinations did not proceed. The final diagnosis was based on histopathology. As for humans, presumptive diagnosis is often made when the patients (1) show signs of meningitis (severe headache, stiff neck, nausea with or without vomiting, confusion, lethargy, photophobia, paresthesia or hyperesthesia), (2) lives or recently travels to endemic areas and (3) has a history of consuming intermediate or paratenic hosts. MRI usually reveals the location of the lesions, thus can be used to improve the recognition of the disease [3]. Abnormalities are commonly seen in the cerebral parenchyma, the meninges and the spinal cord. Although molecular examinations were not performed in this case due to the lack of diagnostic tools in Taiwan, several examinations are performed in other countries. For example, PCR [13, 14], immune-mediated PCR [10], LAMP examination [7] or FOXO/Acan-DAF-16 detection [2] are now available for the diagnosis of *A. cantonensis*.

In mild cases, self-rehabilitation is possible. Severe cases, on the other hand, might result in permanent neurological damage and can even progress to coma or death. While there is no treatment consensus, supportive therapy is often provided instead. Anthelmintics such as albendazole, mebendazole and ivermectin are usually not recommended for the treatment of *A. cantonensis* because a granulomatous inflammatory reaction in the CNS is often a complication caused by dead worms. However, a recent study on larvae migration induced immunosuppression has shown positive response to anthelmintics treatments. When using albendazole from 7 to 14 dpi to deter the entry of larvae to the brain, no parasite migration-based brain injury was detected [1]. In another study, after corticosteroid treatments, some patients' symptoms were relieved (headache remarkably resolved) [11]. In conclusion, when it comes to AEM, supportive treatment should be the initial choice, and anthelmintic therapy can be considered but should be progressed with caution.

Reference:

1. Ash LR. Observations on the role of mollusks and planarians in the transmission of *Angiostrongylus cantonensis* infection to man in New Caledonia. *Rev Biol trop*. 24(1): 163-174, 1976.
2. Chen AL, Sun X, Wang W, Liu JF, Zeng X, Qiu JF, Liu XJ and Wang Y. Activation of the hypothalamic-pituitary-adrenal (HPA) axis contributes to the immunosuppression of mice infected with *Angiostrongylus cantonensis*. J Neuroinflamm. 13: 266-279, 2016.
3. Cross JH and Chen ER. Angiostrongyliasis. In: K. Darwin Murrell and Bernard Fried, eds. Food-borne parasitic zoonoses: fish and plant-borne parasites. 3rd ed. Springer US, 263-290, 2010.
4. Jin E, Ma D., Liang Y, Ji A. and Gan S. MRI findings of eosinophilic myelomeningoencephalitis due to *Angiostrongylus cantonensis*. Clin Radiol. 60: 242-250, 2005.
5. Rui Chen, QunBo Tong, Yi Zhang, Di Lou, QingMing Kong, Shan Lv, MingMing Zhuo, LiYong Wen and ShaoHong Lu. Loop-mediated isothermal amplification: rapid detection of *Angiostrongylus cantonensis* infection in *Pomacea canaliculata*. Parasite Vector. 4: 204-210,

2011.

6. Sawanyawisuth K, Kitthaweesin K, Limpawattana P, Intapan PM, Tiamkao S, Jitpimolmard S, Chotmongkol V. Intraocular angiostrongyliasis: clinical findings, treatments and outcomes. *T Roy Soc Trop Med H*. 101: 497-501, 2007.
7. Silvana Carvalho Thiengo, Raquel de Oliveira Simões, Monica Ammon Fernandez and Arnaldo Maldonado Júnior. *Angiostrongylus cantonensis* and rat lungworm disease in Brazil. Hawaii Med J. 72: 18-22, 2013.
8. Soi-Moi Chye, Shiu-Ru Lin, Ya-Lei Chen, Lee-Yi Chung and Chuan-Min Yen. Immuno-PCR for detection of antigen to *Angiostrongylus cantonensis* circulating fifth-stage worms. Clin Chem. 50: 51-57, 2014.
9. Trevor J. Slom, Margaret M. Cortese, Susan I. Gerber, Roderick C. Jones, Timothy H. Holtz, Adriana S. Lopez, Carlos H. Zambrano, Robert L. Sufit, Yuwaporn Sakolvaree, Wanpen Chaicumpa, Barbara L. Herwaldt and Stuart Johnson. An outbreak of eosinophilic meningitis caused by *Angiostrongylus cantonensis* in travelers returning from the Caribbean. New Engl J Med. 346: 668-675, 2002.
10. Vincent Lo Re III and Stephen J. Gluckman. Eosinophilic meningitis. Am J Med. 114 217-223, 2003.
11. Wang QP, Lai DH, Zhu XQ, Chen XG and Lun ZR. Human angiostrongyliasis. Lancet Infect Dis. 8: 621-630, 2008.
12. Yan B, Sun WW, Yan LZ, Zhang LL, Zheng Y, Zeng YH, Huang HC and Liang SH. Structural and functional characterisation of FOXO/Acan-DAF-16 from the parasitic nematode *Angiostrongylus cantonensis*. Acta Trop. 164: 125-136, 2016.
13. Yvonne Qvarnstrom, Ana Cristina Aramburu da Silva, John L. Teem, Robert Hollingsworth, Henry Bishop, Carlos Graeff-Teixeira and Alexandre J. da Silva. Improved molecular detection of *Angiostrongylus cantonensis* in mollusks and other environmental samples with a species-specific internal transcribed spacer 1-based TaqMan assay. Appl Environ Microb. 76: 5287-5289, 2010.
14. Yvonne Qvarnstrom, James J. Sullivan, Henry S. Bishop, Robert Hollingsworth and Alexandre J. da Silva. PCR-based detection of *Angiostrongylus cantonensis* in tissue and mucus secretions from molluscan hosts. Appl Environ Microb. 73: 1415-1419, 2007.

中華民國比較病理學會章程

第一章　總則

第一條　本會定名為中華民國比較病理學會，英文名稱為 Chinese Society of Comparative Pathology (CSCP) (以下簡稱本會)。

第二條　本會依內政部人民團體法設立，為非營利目的之社會團體，以結合人類醫學與動物醫學資源，提倡比較病理學之研究與發展，交換研究教學心得，聯絡會員友誼及促進國際間比較醫學之交流為宗旨。

第三條　本會以全國行政區域為組織區域，會址設於主管機關所在地區，並得報經主管機關核准設主分支機構。前項分支機構組織簡則由理事會擬訂，報請主管機關核准後行之。會址及分支機構之地址於設置及變更時應報請主管機關核備。

第四條　本會之任務如左：

一、　提倡比較病理學之研究與發展。

二、　舉辦學術演講會、研討會及相關訓練課程。

三、　建立國內比較醫學相關資料庫。

四、　發行比較病理學相關刊物。

五、　促進國內、外比較醫學之交流。

六、　其他有關比較病埋學術發展之事項。

第五條　本會之主管機關為內政部。目的事業主管機關依章程所訂之宗旨與任務，主要為行政院衛生署及農業委員會，其目的事業應受各該事業主管機關之指導與監督。

第二章　會員

第六條　本會會員申請資格如下：

一、　一般會員：贊同本會宗旨，年滿二十歲，具有國內外大專院校(或同等學歷)生命科學及其它相關科系畢業資格或高職畢業從事生命科學相關工作滿兩年者。

二、　學生會員：贊同本會宗旨，在國內、外大專院校生命科學或其它相關科系肄業者 (檢附學生身份證明)。

三、　贊助會員：贊助本會工作之團體或個人。

四、　榮譽會員：凡對比較病理學術或會務之推展有特殊貢獻，經理事會提名並經會員大會通過者。

前項一、二、三項會員申請時應填具入會申請書，經一般會員二人之推薦，經理事會通過，並繳納會費。學生會員身份改變成一般會員時，得再補繳一般會員入會費之差額後，即成為一般會員，榮譽會員免繳入會費與常年會費。

第七條　一般會員有表決權、選舉權、被選舉與罷免權，每一會員為一權。贊助會員、

學生會員與榮譽會員無前項權利。

第八條　會員有遵守本會章程、決議及繳納會費之義務。

第九條　會員有違反法令、章程或不遵守會員大會決議時，得經理事會決議，予以警告或停權處分，其危害團體情節重大者，得經會員大會決議予以除名。

第十條　會員喪失會員資格或經會員大會決議除名者，即為出會。

第十一條　會員得以書面敘明理由向本會聲明退會。但入會費與當年所應繳納的常年會費不得申請退費。

第三章　組織及職員

第十二條　本會以會員大會為最高權力機構。

第十三條　會員大會之職權如下：

一、　訂定與變更章程。

二、　選舉及罷免理事、監事。

三、　議決入會費、常年會費、事業費及會員捐款之方式。

四、　議決年度工作計畫、報告、預算及決算。

五、　議決會員之除名處置。

六、　議決財產之處分。

七、　議決本會之解散。

八、　議決與會員權利義務有關之其他重大事項。

前項第八款重大事項之範圍由理事會訂定之。

第十四條　本會置理事十五人，監事五人，由會員選舉之，分別成立理事會、監事會。

選舉前項理事、監事時，依計票情形得同時選出候補理事五人，候補監事一人，遇理事或監事出缺時，分別依序遞補之。

本屆理事會得提出下屆理事及監事候選人參考名單。

第十五條　理事會之職權如下：

一、　審定會員之資格。

二、　選舉及罷免常務理事及理事長。

三、　議決理事、常務理事及理事長之辭職。

四、　聘免工作人員。

五、　擬訂年度工作計畫、報告、預算及決算。

六、　其他應執行事項。

第十六條　理監事置常務理事五人，由理事互選之，並由理事就常務理事中選舉一人為理事長。

理事長對內綜理監督會議，對外代表本會，並擔任會員大會、理事會主席。

理事長因事不能執行職務時，應指定常務理事一人代理之，未指定或不能指定時，由常務理事互推一人代理之。

理事長或常務理事出缺時，應於一個月內補選之。

第十七條　　監事會之職權如左：
一、監察理事會工作之執行。
二、審核年度決算。
三、選舉及罷免常務監事。
四、議決監事及常務監事之辭職。
五、其他應監察事項。

第十八條　　監事會置常務監事一人，由監事互選之，監察日常會務，並擔任監事會主席。
常務監事因事不能執行職務時，應指定監事一人代理之，未指定或不能指定時，由監事互推一人代理之。監事會主席（常務監事）出缺時，應於一個月內補選之。

第十九條　　理事、監事均為無給職，任期三年，連選得連任。理事長之連任以一次為限。

第二十條　　理事、監事有下列情事之一者，應即解任：
一、喪失會員資格。
二、因故辭職經理事會或監事會決議通過者。
三、被罷免或撤免者。
四、受停權處分期間逾任期二分之一者。

第二十一條　　本會置祕書長一人，承理事長之命處理本會事務，令置其他工作人員若干人，由理事長提名經理事會通過後聘免之，並報主管機關備查。但祕書長之解聘應先報主管機關核備。
前項工作人員不得由選任之職員（理監事）擔任。
工作人員權責及分層負責事項由理事會令另定之。

第二十二條　　本會得設各種委員會、小組或其它內部作業組織，其組織簡則由理事會擬定，報經主機關核備後施行，變更時亦同。

第二十三條　　本會得由理事會聘請無給顧問若干人，其聘期與理事、監事之任期同。

第四章　　會議

第二十四條　會員大會分定期會議與臨時會議兩種，由理事長召集，召集時除緊急事故之臨時會議外應於十五日前以書面通知之。定期會議每年召開一次，臨時會議於理事會過半數認為必要，或經會員五分之一以上之請，或監事會半數函請召集時召開之。

第二十五條　會員不能親自出席會員大會時，得以書面委託其他會員代理，每一會員以代理一人為限。

第二十六條　會員大會之決議，以出席人數過半之同意行之。但章程之訂定與變更、會員之除名、理事及監事之罷免、財產之處置、本會之解散及其他與會權利義務有關之重大事項應有出席人數三分之二以上同意。但本會如果辦理法人登後，

章程之變更應以出席人數四分之三以上之同或全體會員三分之二以上書面之同意行之。

第二十七條　理事會及監事會至少每六個月各舉行會議一次，必要時得召開聯席會議或臨時會議。

前項會議召集時除臨時會議外。應於七日以以書面通知，會議之決議各以理事、監事過半數之出席，出席人較多數之同意行之。

第二十八條　理事應出席理事會議，監事應出席監事會議，不得委託出席；理事、監事連續二次無故缺席理事會、監事會者，視同辭職。

第五章　經費及會計

第二十九條　本會經費來源如下：

一、入會費：一般會員新台幣壹仟元，學生會員壹佰元，贊助會員伍仟元，於入會時繳納。

二、常年會費：一般會員新台幣壹仟元，學生會員壹佰元。

三、事業費。

四、會員捐款。

五、委託收益。

六、基金及其孳息。

七、其他收入。

第三十條　本會會計年度以國曆年為準，自每年一月一日起至十二月三十一日止。

第三十一條　本會每年於會計年度開始前二個月由理事會編造年度工作計劃、收支預算表、員工待遇表，提會員大會通過（會員大會因故未能如期召開者，先提理監事聯席會議通過），於會計年度開始前報主管機關核備，並於會計年度終了後二個月內由理事會編造年度工作報告、收支決算表、現金出納表、資產負債表、財產目錄及基金收支表，送監事會審核後，造具審核意見書送還理事會，提會員大會通過，於三月底前報主管機關核備（會員大會未能如期召開者，需先報主管機關備查）。

第三十二條　本會解散後，剩餘財產歸屬所在地之地方自治團體或主管機關指定之機關團體所有。

第三十三條　本章程未規定事項，悉依有關法令規定辦理。

第三十四條　本章程經大會通過，報經主管機關核備後施行，變更時亦同。

第三十五條　本章程經本會民國八十五年二月四日第一屆第一次會員大會通過，並報經內政部 85 年 3 月 14 日台(85)內社字第 8507009 號函准予備查。

中華民國比較病理學會第七屆理監事名單簡歷冊

職別	姓名	性別	學歷	經歷	現任本職	通訊住址	電話	傳真	email
理事長	廖俊旺	男	國立台灣大學獸醫學研究所博士	農業藥物毒物試驗所應用毒理組副研究員	國立中興大學獸醫病理生物學研究所教授	402 台中市南區國光路 250 號 獸病所	0937-285958 04-22840894 #406	04-22862073	jwliao@dragon.nchu.edu.tw
秘書長	朱旆億	男	國立台灣大學醫學系	聖馬爾丁醫院、彰化基督教醫院病理科	彰化秀傳紀念醫院病理科主任	彰化縣彰化市埔西街 32 巷 22 號	05-5512383		chu.peiyi@msa.hinet.ne
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3.Choose the slide images (e.g. 63rd CSCP)

4. Pick any case you'd like to read (e.g. case 435-440)

比較病理研討會病例分類一覽表

中華民國比較病理學會
第一次至第六十六次比較病理學研討會病例分類一覽表

分類	病例編號	會議場次	診斷	動物別	提供單位
腫瘤	1.	1	Myxoma	Dog	美國紐約動物醫學中心
	2.	1	Chordoma	Ferret	美國紐約動物醫學中心
	3.	1	Ependymoblastoma	Human	長庚紀念醫院
	8.	2	Synovial sarcoma	Pigeon	美國紐約動物醫學中心
	18.	3	Malignant lymphoma	Human	長庚紀念醫院
	19.	3	Malignant lymphoma	Wistar rat	國家實驗動物繁殖及研究中心
	24.	3	Metastatic thyroid carcinoma	Human	省立新竹醫院
	25.	3	Chordoma	Human	新光吳火獅紀念醫院
	34.	4	Interstitial cell tumor	Dog	中興大學獸醫學系
	35.	4	Carcinoid tumor	Human	長庚紀念醫院
	36.	4	Hepatic carcinoid	Siamese cat	美國紐約動物醫學中心
	38.	6	Pheochromocytoma	Ferret	美國紐約動物醫學中心
	39.	6	Extra adrenal pheochromocytoma	Human	新光吳火獅紀念醫院
	40.	6	Mammary gland fibroadenoma	Rat	國家實驗動物繁殖及研究中心
	41.	6	Fibroadenoma	Human	省立豐原醫院
	42.	6	Canine benign mixed type mammary gland tumor	Pointer bitch	中興大學獸醫學系
	43.	6	Phyllodes tumor	Human	台中榮民總醫院
	44.	6	Canine oral papilloma	Dog	台灣大學獸醫學系
	45.	6	Squamous cell papilloma	Human	中國醫藥學院
	47.	7	1. Lung: metastatic carcinoma associated with cryptococcal infection. 2. Liver: metastatic carcinoma. 3. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院
	56.	8	Gastrointestinal stromal tumor	Human	台中榮民總醫院
	59.	8	Colonic adenocarcinoma	Dog	美國紐約動物醫學中心
	62.	8	Submucosal leiomyoma of stomach	Human	頭份為恭紀念醫院
	64.	8	1. Adenocarcinoma of sigmoid colon 2. Old schistosomiasis of rectum	Human	省立新竹醫院
	71.	9	Myelolipoma	Human	台北耕莘醫院
腫瘤	72.	9	Reticulum cell sarcoma	Mouse	國家實驗動物繁殖及研究中心
	73.	9	Hepatocellular carcinoma	Human	新光吳火獅紀念醫院
	74.	9	Hepatocellular carcinoma induced by aflatoxin B1	Wistar rats	台灣省農業藥物毒物試驗所
	81.	10	Angiomyolipoma	Human	羅東博愛醫院
	82.	10	Inverted papilloma of prostatic urethra	Human	省立新竹醫院
	84.	10	Nephrogenic adenoma	Human	國泰醫院
	86.	10	Multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院
	87.	10	Squamous cell carcinoma of renal pelvis and calyces with extension to the ureter	Human	台北病理中心
	88.	10	Fibroepithelial polyp of the ureter	Human	台北耕莘醫院
	90.	10	Clear cell sarcoma of kidney	Human	台北醫學院

腫瘤	93.	11	Mammary gland adenocarcinoma, complex type , with chondromucinous differentiation	Dog	台灣大學獸醫學系
	94.	11	1. Breast, left, modified radical mastectomy, showing papillary carcinoma, invasive 2. Nipple, left, modified radical mastectomy, papillary carcinoma, invasive 3. Lymph node, axillary, left, lymphadenectomy, palillary carcinoma, metaststic	Human	羅東聖母醫院
	95.	11	Transmissible venereal tumor	Dog	中興大學獸醫學系
	96.	11	Malignant lymphoma, large cell type, diffuse, B-cell phenotype	Human	彰化基督教醫院
	97.	11	Carcinosarcomas	Tiger	台灣養豬科學研究所
	98.	11	Mucinous carcinoma with intraductal carcinoma	Human	省立豐原醫院
	99.	11	Mammary gland adenocarcinoma, type B, with pulmonary metastasis, BALB/cBYJ mouse	Mouse	國家實驗動物繁殖及研究中心
	100.	11	Malignant fibrous histiocytoma and paraffinoma	Human	中國醫藥學院
	102.	11	Pleomorphic adenoma (benign mixed tumor)	Human	佛教慈濟綜合醫院
	103.	13	Atypical central neurocytoma	Human	新光吳火獅紀念醫院
	104.	13	Cardiac schwannoma	SD rat	國家實驗動物繁殖及研究中心
	109.	13	Desmoplastic infantile ganglioglioma	Human	高雄醫學院
	107.	13	1.Primary cerebral malignant lymphoma 2.Acquired immune deficiency syndrome	Human	台北市立仁愛醫院
	111.	13	Schwannoma	Human	三軍總醫院
	114.	13	Osteosarcoma	Dog	美國紐約動物醫學中心
	115.	14	Mixed germ-cell stromal tumor, mixed sertoli cell and seminoma-like cell tumor	Dog	美國紐約動物醫學中心
	116.	14	Krukenberg’s Tumor	Human	台北病理中心
	117.	14	Primary insular carcinoid tumor arising from cystic teratoma of ovary.	Human	花蓮慈濟綜合醫院
	119.	14	Polypoid adenomyoma	Human	大甲李綜合醫院
	120.	14	Gonadal stromal tumor	Human	耕莘醫院
	122.	14	Gestational choriocarcinoma	Human	彰化基督教醫院
	123.	14	Ovarian granulosa cell tumor	Horse	中興大學獸醫學系
	129.	15	Kaposi’s sarcoma	Human	華濟醫院
	131.	15	Basal cell carcinoma (BCC)	Human	羅東聖母醫院
	132.	15	Transmissible venereal tumor	Dog	臺灣大學獸醫學系
	137	17	Canine Glioblastoma Multiforme in Cerebellopontine Angle	Dog	中興大學獸醫病理研究所
	143	18	Osteosarcoma associated with metallic implants	Dog	紐約動物醫學中心
	144	18	Radiation-induced osteogenic sarcoma	Human	花蓮慈濟綜合醫院
	145	18	Osteosarcoma, osteogenic	Dog	臺灣大學獸醫學系
	146	18	Pleomorphic rhabdomyosarcoma	Human	行政院衛生署新竹醫院
	147	18	Papillary Mesothelioma of pericardium	Leopard	屏東科大學獸醫學系
	148	18	Cystic ameloblastoma	Human	台北醫學院
	149	18	Giant cell tumor of bone	Canine	中興大學獸醫學院
	150	18	Desmoplastic small round cell tumor (DSRCT)	Human	華濟醫院
	152	18	Hepatocellular carcinoma	Human	羅東聖母醫院
	158	20	Hemangiopericytoma	Human	羅東聖母醫院
	160	20	Cardiac fibroma	Human	高雄醫學大學病理學科

腫瘤	166	21	Nephroblastoma	Rabbit	紐約動物醫學中心
	168	21	Nephroblastoma	Pig	台灣動物科技研究所
	169	21	Nephroblastoma with rhabdomyoblastic differentiation	Human	高雄醫學大學病理科
	172	21	Spindle cell sarcoma	Human	羅東聖母醫院
	174	21	Juxtaglomerular cell tumor	Human	新光醫院病理檢驗科
	190	27	Angiosarcoma	Human	高雄醫學大學病理學科
	192	27	Cardiac myxoma	Human	彰化基督教醫院病理科
	194	27	Kasabach-Merrit syndrome	Human	慈濟醫院病理科
	195	27	Metastatic hepatocellular carcinoma, right atrium	Human	新光醫院病理科
	197	27	Papillary fibroelastoma of aortic valve	Human	新光醫院病理科
	198	27	Extraplacental chorioangioma	Human	耕莘醫院病理科
	208	30	Granulocytic sarcoma (Chloroma) of uterine cervix	Human	高雄醫學大學病理學科
	210	30	Primary non-Hodgkin's lymphoma of bone, diffuse large B cell, right humerus	Human	彰化基督教醫院病理科
	213	30	Lymphoma, multi-centric type	Dog	中興大學獸醫系
	214	30	CD30 (Ki-1)-postitive anaplastic large cell lymphoma (ALCL)	Human	新光醫院病理科
	215	30	Lymphoma, mixed type	Koala	台灣大學獸醫學系
	217	30	Mucosal associated lymphoid tissue (MALT) lymphoma, small intestine	Cat	臺灣大學獸醫學研究所
	218	31	Nasal type NK/T cell lymphoma	Human	高雄醫學大學病理科
	222	31	Acquired immunodeficiency syndrome (AIDS)with disseminated Kaposi's sarcoma	Human	慈濟醫院病理科
	224	32	Epithelioid sarcoma	Human	彰化基督教醫院病理科
	226	32	Cutaneous B cell lymphoma , eyelid , bilateral	Human	羅東聖母醫院病理科
	227	32	Extramammary Paget's disease (EMPD) of the scrotum	Human	萬芳北醫皮膚科病理科
	228	32	Skin, back, excision, CD30+diffuse large B cell lymphoma, Soft tissue, leg , side not stated, excision, vascular leiomyoma	Human	高雄醫學大學附設醫院病理科
	231	34	Malignant melanoma, metastasis to intra-abdominal cavity	Human	財團法人天主教耕莘醫院病理科
腫瘤	232	34	Vaccine-associated rhabdomyosarcoma	Cat	台灣大學獸醫學系
	233	34	1. Pleura: fibrous plaque 2. Lung: adenocarcinoma 3. Brain: metastatic adenocarcinoma	Human	高雄醫學大學附設 中和醫院病理科
	235	34	1. Neurofibromatosis, type I 2. Malignant peripheral nerve sheath tumor (MPNST)	Human	花蓮慈濟醫院病理科
	239	35	Glioblastoma multiforme	Human	羅東聖母醫院
	240	35	Pineoblastoma	Wistar rat	綠色四季
	241	35	Chordoid meningioma	Human	高醫病理科
	243	35	Infiltrating lobular carcinoma of left breast with meningeal carcinomatosis and brain metastasis	Human	花蓮慈濟醫院病理科
	245	35	Microcystic Meningioma.	Human	耕莘醫院病理科
	247	36	Well-differentiated fetal adenocarcinoma without lymph node metastasis	Human	新光吳火獅紀念醫院
	249	36	Adenocarcinoma of lung.	Human	羅東聖母醫院
	252	36	Renal cell carcinoma	Canine	國立台灣大學獸醫學系獸醫學研究所
	253	36	Clear cell variant of squamous cell carcinoma, lung	Human	高雄醫學大學附設中和醫院病理科

腫瘤	256	37	Metastatic adrenal cortical carcinoma	Human	耕莘醫院病理科
	258	37	Hashimoto's thyroiditis with diffuse large B cell lymphoma and papillary carcinoma	Human	高雄醫學大學附設中和醫院病理科
	262	38	Medullar thyroid carcinoma	Canine	臺灣大學獸醫學系
	264	39	Merkel cell carcinoma	Human	羅東博愛醫院
	266	39	Cholangiocarcinoma	Human	耕莘醫院病理科
	268	39	Sarcomatoid carcinoma of renal pelvis	Human	花蓮慈濟醫院病理科
	269	39	Mammary Carcinoma	Canine	中興大學獸醫學系
	270	39	Metastatic prostatic adenocarcinoma	Human	耕莘醫院病理科
	271	39	Malignant canine peripheral nerve sheath tumors	Canine	臺灣大學獸醫學系
	272	39	Sarcomatoid carcinoma, lung	Human	羅東聖母醫院
	273	40	Vertebra,T12,laminectomy, metastatic adenoid cystic carcinoma	Human	彰化基督教醫院
	274	40	rhabdomyosarcoma	Canine	臺灣大學獸醫學系
	275	40	Fetal rhabdomyosarcoma	SD Rat	中興大學獸醫學系
	276	40	Adenocarcinoma, metastatic, iris, eye	Human	高雄醫學大學
	277	40	Axillary lymph node metastasis from an occult breast cancer	Human	羅東博愛醫院
	278	40	Hepatocellular carcinoma	Human	國軍桃園總醫院
	279	40	Feline diffuse iris melanoma	Faline	中興大學獸醫學系
	280	40	Metastatic malignant melanoma in the brain and inguinal lymph node	Human	花蓮慈濟醫院病理科
	281	41	Tonsil Angiosarcoma	Human	羅東博愛醫院
	282	41	Malignant mixed mullerian tumor	Human	耕莘醫院病理科
	283	41	Renal cell tumor	Rat	中興大學獸醫學系
	284	41	Multiple Myeloma	Human	花蓮慈濟醫院病理科
	285	41	Myopericytoma	Human	新光吳火獅紀念醫院
	287	41	Extramedullary plasmacytoma with amyloidosis	Canine	臺灣大學獸醫學系
	288	42	Metastatic follicular carcinoma	Human	羅東聖母醫院病理科
	289	42	Primitive neuroectodermal tumor (PNET), T-spine.	Human	羅東博愛醫院病理科
	292	42	Hemangioendothelioma of bone	Human	花蓮慈濟醫院病理科
	293	42	Malignant tumor with perivascular epithelioid differentiation, favored malignant PEComa	Human	彰化基督教醫院
	297	43	Mucin-producing cholangiocarcinoma	Human	基隆長庚醫院
	300	43	Cutaneous epitheliotropic lymphoma	Canine	臺灣大學獸醫專業學院
	301	43	Cholangiocarcinoma	Felis Lynx	臺灣大學獸醫專業學院
	302	43	Lymphoma	Canine	臺灣大學獸醫專業學院
	303	43	Solitary fibrous tumor	Human	彰化基督教醫院
	304	43	Multiple sarcoma	Canine	臺灣大學獸醫專業學院
	306	44	Malignant solitary fibrous tumor of pleura	Human	佛教慈濟綜合醫院暨慈濟大學
	307	44	Ectopic thymic carcinoma	Human	彰濱秀傳紀念醫院病理科
	308	44	Medullary carcinoma of the right lobe of thyroid	Human	彰化基督教醫院病理科
	309	44	Thyroid carcinosarcoma with cartilage and osteoid formation	Canine	臺灣大學獸醫專業學院
	312	44	Lymphocytic leukemia/lymphoma	Koala	臺灣大學獸醫專業學院
	313	45	Neuroendocrine carcinoma of liver	Human	佛教慈濟綜合醫院暨慈濟大學
	314	45	Parachordoma	Human	羅東博愛醫院病理科
腫瘤	315	45	Carcinoma expleomorphic adenoma, submandibular gland	Human	天主教耕莘醫院病理科

腫瘤	316	45	Melanoma, tongue	Canine	國立臺灣大學獸醫專業學院
	317	45	Renal cell carcinoma, papillary type	Canine	國立臺灣大學 獸醫專業學院
	323	46	Metastatic papillary serous cystadenocarcinoma, abdomen	Human	國軍桃園總醫院
	324	46	Malignant gastrointestinal stromal tumor	Human	天主教耕莘醫院
	329	47	Sclerosing stromal tumor	Human	彰化基督教醫院
	330	47	Pheochromocytoma	Human	天主教耕莘醫院
	334	48	Metastatic infiltrating ductal carcinoma, liver	Human	佛教慈濟綜合醫院
	335	48	Adenoid cystic carcinoma, grade II, Rt breast	Human	天主教耕莘醫院
	336	48	Malignant lymphoma, diffuse, large B-cell, right neck	Human	林新醫院
	337	48	Pulmonary carcinoma, multicentric	Dog	國立臺灣大學 獸醫專業學院
	338	48	Malignant melanoma, multiple organs metastasis	Rabbit	國立中興大學獸醫學院
	340	49	Mucinous-producing urothelial-type adenocarcinoma of prostate	Human	天主教耕莘醫院
	342	49	Plexiform fibromyxoma	Human	彰化基督教醫院
	343	49	Malignant epithelioid trophoblastic tumor	Human	佛教慈濟綜合醫院
	344	49	Epithelioid sarcoma	Human	林新醫院
	346	49	Transmissible venereal tumor	Dog	國立臺灣大學獸醫專業學院
	347	50	Ewing's sarcoma (PNET/ES tumor)	Human	天主教耕莘醫院病理科
	348	50	Malignant peripheral nerve sheath tumor, epithelioid type	Human	林新醫院病理科
	349	50	Low grade fibromyxoid sarcoma	Human	高雄醫學大學附設 中和紀念醫院病理科
	351	50	Orbital embryonal rhabdomyosarcoma	Dog	Gifu University, Japan (岐阜大学)
	354	50	Granular cell tumor	Dog	國立臺灣大學 獸醫專業學院
	356	50	Malignant neoplasm of unknown origin, cerebrum	Dog	國立臺灣大學 獸醫專業學院
	357	51	Small cell Carcinoma, Urinary bladder	Human	天主教耕莘醫院
	364	51	Perivascular epithelioid cell tumor, in favor of lymphangiomyomatosi	Human	高雄醫學大學附設中和紀念醫院病理科
	365	52	Angiosarcoma, skin (mastectomy)	Human	天主教耕莘醫院病理科
	366	52	Rhabdomyoma (Purkinjeoma), heart	Swine	屏東縣家畜疾病防治所
	368	52	Langerhans cell sarcoma, lung	Human	高雄醫學大學附設中和紀念醫院病理科
	369	52	Biliary cystadenocarcinoma, liver	Camel	國立屏東科技大學獸醫教學醫院病理科
	371	52	Malignant melanoma, nasal cavity	Human	羅東博愛醫院病理科
	373	53	Malignant giant cell tumor of tendon sheath	Human	天主教耕莘醫院病理科
	376	53	Malignant mesothelioma of tunica vaginalis	Golden hamster	中興大學獸醫病理生物學研究所
	377	53	Perivascular Epithelioid Cell Tumor (PEComa) of the uterus	Human	彰化基督教醫院病理部
	378	53	Medullary carcinoma	Human	高雄醫學大學病理部
	389	55	Mantle cell lymphoma involving ascending colon, cecum, ileum, appendix and regional lymph nodes with hemorrhagic necrosis in the colon and leukemic change.	Human	奇美醫院病理部
	390	55	Pulmonary Squamous Cells Carcinoma of a Canine	Dog	國立屏東科技大學 獸醫教學醫院病理科
	391	55	Squamous cell carcinoma, lymphoepithelioma-like type	Human	高醫附設醫院病理科

腫瘤	393	55	Malignant peripheral nerve sheath tumor (MPNST), subcutis, canine.	Dog	中興大學獸醫學系
	394	55	Desmoplastic malignant melanoma (mimic malignant peripheral nerve sheath tumor)	Human	中山醫學大學醫學系病理學科暨附設醫院病理科
	397	56	Atypical meningioma	Human	奇美醫院病理科
	401	57	Lymph nodes, excision - Hodgkin's lymphoma, mixed cellularity	Human	天主教耕莘醫院
	402	57	1. Leukemia, nonlymphoid, granulocytic, involving bone marrow, spleen, liver, heart, lungs, lymph nodes, kidney, hardian gland, duodenum and pancreas. 2. Pinworm infestation, moderate, large intestines. 3. Fibrosis, focal, myocardium.	Mouse	國家實驗動物中心
	403	57	Non-secretory multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	404	57	1. Hepatocellular adenocarcinoma, multifocal, severe, liver 2. Hemorrhage, moderate, acute, body cavity 3. Bumble foot, focal, mild, chronic, food pad 4. cyst and atherosclerosis, chronic, testis	Goose	國立中興大學獸醫病理生物學研究所
	406	57	Castleman’s disease	Human	羅東博愛醫院
	407	58	Hepatoid adenocarcinoma of colon with multiple liver metastases	Human	羅東博愛醫院
	408	58	Cardiac and pulmonary melanoma	Pig	國立中興大學獸醫病理生物學研究所
	409	58	Double Tumors: (1) small cell carcinoma of lung (2) Hodgkin’s lymphoma, mixed cellularity type. Acrokeratosis paraneoplastica	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	410	58	Von Hippel–Lindau disease	Human	奇美醫院病理部
	411	58	Multiple neoplasia	Tiger	國立屏東科技大學獸醫教學醫院病理科
	412	58	Hepatocellular carcinoma and multiple myeloma	Human	中山醫學大學醫學系病理學科暨附設醫院病理科
	413	59	DEN plus AAF carcinogens induced hepatic tumor in male rats	Rat	中興大學獸醫病理生物學研究所
	417	59	Alveolar soft part sarcoma	Human	高雄醫學大學附設 中和紀念醫院病理科
	418	60	Seminoma associated with supernumerary testicles	Human	羅東博愛醫院
	422	61	Retinoblastoma in a baby girl	Human	彰化基督教醫院
	423	61	Colloid goiter in a female Radiated tortoise (*Astrochelys radiata*)	Tortoise	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	424	61	Lymphoepithelial carcinoma in a women	Human	羅東博愛醫院
	425	61	Histiocytic sarcoma in a SJL/J mouse	mouse	國家實驗動物中心
	428	62	Maligant lymphoma, diffuse large B-cell (DLBCL) in a women	Human	國軍桃園總醫院病理檢驗部
	429	62	Immune reconstitution inflammatory syndrome (IRIS)-associated Kaposi’s sarcoma in a man	Human	花蓮慈濟醫院
	430	62	Mammary adenocarcinoma, tubular form in a female feline	Cat	中興大學獸醫病理生物學研究所
	433	62	Rhabdomyosarcoma, retroperitoneal cavity in a female mouse	Mouse	國家實驗動物中心
	434	62	Malignant pheochromocytoma with pleural metastasis in a man	Human	天主教聖馬爾定醫院病理科
	436	63	Primary non-Hodgkins lymphoma of terminal ileum	Human	國軍桃園總醫院病理檢驗部
	438	63	Ectopic thyroid gland tumor	Beagle	台灣大學獸醫專業學院分子暨比較病理生物學研究所

	440	63	Hepatocellular cell carcinoma Squamous cell carcinoma	Human	天主教聖馬爾定醫院口腔顎面外科
	442	64	Large B cell lymphoma in a man	Human	羅東博愛醫院
	444	64	Olfactory neuroblastoma in a female cat	Cat	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	445	64	Oligodendroglioma in a man	Human	國軍桃園總醫院病理檢驗部
	447	64	Ameloblastoma of mandible in a man	Human	天主教聖馬爾定醫院口腔顎面外科
	448	65	EBV associated extranodal NK / T-cell lymphoma, nasal type	Human	羅東博愛醫院
	451	65	Mouse, subcutaneously mass – exocrine pancreatic adenocarcinoma, AsPC-1 cells, human origin, heterotopical model	Mouse	國家實驗動物中心
	452	65	1. Extranodal NK/T-cell lymphoma, nasal type 2. Regional lymph nodes and omentum are involved.	Human	台中醫院
	457	66	Metastatic squamous cell carcinoma (SCC)	Horse	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	459	66	Squamous intraepithelial lesion (SIL)	Human	高雄醫學大學附設醫院病理部
	460	66	Subcutaneous liposarcoma and uterine endometrial stromal sarcoma	African hedgehog	中興大學獸醫病理生物學研究所
	463	67	Splenic undifferentiated pleomorphic sarcoma in a Djungarian hamster	Hamster	國立中興大學獸醫教學醫院鳥禽與野生動物科
	465	67	Plasmacytoid urothelial carcinoma	Dog	國立台灣大學獸醫專業學院分子暨比較病理生物學研究所
	467	67	1.Poorly differentiated hemangiosarcoma in face 2.Squamous cell carcinoma in ear	Civet	農委會特有生物研究保育中心
細菌	6.	1	Tuberculosis	Monkey	臺灣大學獸醫學系
	7.	1	Tuberculosis	Human	省立新竹醫院
	12.	2	H. pylori-induced gastritis	Human	台北病理中心
	13.	2	Pseudomembranous colitis	Human	省立新竹醫院
	26.	3	Swine salmonellosis	Pig	中興大學獸醫學系
	27.	3	Vegetative valvular endocarditis	Pig	台灣養豬科學研究所
	28.	4	Nocardiosis	Human	台灣省立新竹醫院
	29.	4	Nocardiosis	Largemouth bass	屏東縣家畜疾病防治所
	32.	4	Actinomycosis	Human	台灣省立豐原醫院
	33.	4	Tuberculosis	Human	苗栗頭份 為恭紀念醫院
	53.	7	Intracavitary aspergilloma and cavitary tuberculosis, lung.	Human	羅東聖母醫院
	54.	7	Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM.	Human	林口長庚紀念醫院
	58.	7	Tuberculous enteritis with perforation	Human	佛教慈濟綜合醫院
	61.	8	Spirochetosis	Goose	國立嘉義農專獸醫科
	63.	8	Proliferative enteritis (*Lawsonia intracellularis* infection)	Porcine	屏東縣家畜疾病防治所
	68.	9	Liver abscess (Klebsillae pneumoniae)	Human	台北醫學院
	77.	10	Xanthogranulomatous inflammation with nephrolithiasis, kidney, right. Ureteral stone, right.	Human	羅東聖母醫院
	79.	10	Emphysematous pyelonephritis	Human	彰化基督教醫院

細菌	89.	10	Severe visceral gout due to kidney damaged Infectious serositis	Goose	中興大學獸醫學系
	108.	13	Listeric encephalitis	Lamb	屏東縣家畜疾病防治所
	113.	13	Tuberculous meningitis	Human	羅東聖母醫院
	134.	16	Swine salmonellosis with meningitis	Swine	中興大學獸醫學系
	135.	16	Meningoencephalitis, fibrinopurulent and lymphocytic, diffuse, subacute, moderate, cerebrum, cerebellum and brain stem, caused by Streptococcus spp. infection	Swine	國家實驗動物繁殖及研究中心
	140	17	Coliform septicemia of newborn calf	Calf	屏東縣家畜疾病防治所
	161	20	Porcine polyserositis and arthritis（Glasser's disease）	Pig	中興大學獸醫學院
	162	20	Mycotic aneurysm of jejunal artery secondary to infective endocarditis	Human	慈濟醫院病理科
	170	21	Chronic nephritis caused by Leptospira spp	Pig	中興大學獸醫學院
	173	21	Ureteropyelitis and cystitis	Pig	中國化學製藥公司
	254	36	Pulmonary actinomycosis.	Human	耕莘醫院病理科
	259	37	Tuberculous peritonitis	Human	彰化基督教醫院病理科
	260	38	Septicemic salmonellosis	Piglet	屏東科技大學獸醫系
	261	38	Leptospirosis	Human	慈濟醫院病理科
	267	39	Mycobacteriosis	Soft turtles	屏東科技大學獸醫系
	290	42	*Staphylococcus* spp. infection	Formosa Macaque	中興大學獸醫病理學研究所
	291	42	Leptospirosis	Dog	台灣大學獸醫學系
	296	43	Leptospirosis	Human	花蓮慈濟醫院
	305	43	Cryptococcus and Tuberculosis	Human	彰濱秀傳紀念醫院
	319	46	Placentitis, Coxiella burnetii	Goat	台灣動物科技研究所
	321	46	Pneumonia, Buirkholderia pseudomallei	Goat	屏東縣家畜疾病防治所
	339	48	Mycoplasmosis	Rat	國家實驗動物中心
	352	50	Chromobacterium violaceum Septicemia	Gibbon	Bogor Agricultural University, Indonesia
	353	50	Salmonellosis	Pig	國立中興大學獸醫學院
	367	52	Melioidosis (Burkholderia pseudomallei), lung	Human	花蓮慈濟醫院
	370	52	Suppurative bronchopneumonia (*Bordetellae trematum)* with *Trichosomoides crassicauda* infestation	Rat	國立中興大學獸醫學院
	374	53	Pulmonary coccidiodomycosis	Human	彰化基督教醫院
	375	53	Paratuberculosis in Macaca cyclopis	Macaca cyclopis	國立屏東科技大學獸醫學院
	379	53	Bovine Johne's disease (BJD) or paratuberculosis of cattle	Dairy cow	屏東縣家畜疾病防治所
	380	53	NTB, Mycobacterium abscessus	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	382	54	Leptospirosis	Pig	國立屏東科技大學獸醫學院
	384	54	Neisseria Infected Pneumonitis	Cat	中興大學獸醫學系
	385	54	Mycobacteria avian complex dacryocyctitis	Human	花蓮佛教慈濟綜合醫院
	387	54	Swine Erysipelas	Pig	屏東縣家畜疾病防治所
	396	56	Suppurative meningitis caused by Streptococcus spp in pigs	Pig	國立中興大學獸醫病理生物學研究所
	399	56	Listeric encephalitis in dairy goats	Goat	屏東縣家畜疾病防治所
	435	63	Tuberculosis	Human	花蓮佛教慈濟綜合醫院
	438	63	Porcine proliferative enteritis (PPE)	Pig	國立中興大學獸醫病理生物

					學研究所
	446	64	Actinomycosis (lumpy jaw) in a dairy cattle	Cattle	國立中興大學獸醫病理生物學研究所
	450	65	*Mycobacterium avium* infection	Human	花蓮佛教慈濟綜合醫院
	464	67	Ulcerative actinomycotic squamous plaque with focal (basal) severe dysplasia, mucosa, gingivobuccal junction, right lower gingiva in a man	Human	嘉義聖馬爾定醫院
病毒	21.	3	Newcastle disease	Chicken	台灣大學獸醫學系
	22.	3	Herpesvirus infection	Goldfish	台灣大學獸醫學系
	30.	4	Demyelinating canine distemper encephalitis	Dog	台灣養豬科學研究所
	31.	4	Adenovirus infection	Malayan sun bears	台灣大學獸醫學系
	50.	7	Porcine cytomegalovirus infection	Piglet	台灣省家畜衛生試驗所
	55.	7	Infectious laryngo-tracheitis (Herpesvirus infection)	Broilers	國立屏東技術學院獸醫學系
	69.	9	Pseudorabies (Herpesvirus infection)	Pig	台灣養豬科學研究所
	78.	10	Marek's disease in native chicken	Chicken	屏東縣家畜疾病防治所
	92.	11	Foot- and- mouth disease (FMD)	Pig	屏東縣家畜疾病防治所
	101.	11	Swine pox	Pig	屏東科技大學獸醫學系
	110.	13	Pseduorabies	Piglet	國立屏東科技大學
	112.	13	Avian encephalomyelitis	Chicken	國立中興大學
	128.	15	Contagious pustular dermatitis	Goat	屏東縣&台東縣家畜疾病防治所
	130.	15	Fowl pox and Marek's disease	Chicken	中興大學獸醫學系
	133.	16	Japanese encephalitis	Human	花蓮佛教慈濟綜合醫院
	136	17	Viral encephalitis, polymavirus infection	Lory	美國紐約動物醫學中心
	138	17	1. Aspergillus spp. encephalitis and myocarditis 2. Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
	153	19	Enterovirus 71 infection	Human	彰化基督教醫院
	154	19	Ebola virus infection	African Green monkey	行政院國家科學委員會實驗動物中心
	155	19	Rabies	Longhorn Steer	台灣大學獸醫學系
	163	20	Parvoviral myocarditis	Goose	屏東科技大學獸醫學系
	199	28	SARS	Human	台大醫院病理科
	200	28	TGE virus	swine	臺灣動物科技研究所
	201	28	Feline infectious peritonitis(FIP)	Feline	台灣大學獸醫學系
	209	30	Chicken Infectious Anemia (CIA)	Layer	屏東防治所
病毒	219	31	1. Lymph node:Lymphdenitis, with lymphocytic depletion and intrahistiocytic basophilic cytoplasmic inclusion bodies. Etiology consistent with Porcine Circovirus (PCV)infection. 2. Lung: Bronchointerstitial pneumonia, moderate, lymphoplasmacytic, subacute.	Pig	臺灣動物科技研究所
	220	31	Cytomegalovirus colitis	Human	彰化基督教醫院病理科
	221	31	Canine distemper virus Canine adenovirus type ll co-infection	Canine	國家實驗動物繁殖及研究中心
	223	32	1. Skin, mucocutaneous junction (lip): Cheilitis, subacute, diffuse, sever, with epidermal pustules, ballooning degeneration, proliferation, and eosinophilic intracytoplasmic inclusion bodies, Saanen goat. 2. Haired skin: Dermatitis, proliferative,	Goat	台灣動物科技研究所

			lymphoplasmacytic, subacute, diffuse, sever, with marked epidermal pustules, ballooning degeneration, acanthosis, hyperkeratosis, and eosinophilic intracytoplasmic inclusion bodies.		
	238	35	Hydranencephaly	Cattle	國立屏東科技大學獸醫學系
	248	36	Porcine Cytomegalovirus (PCMV) infection	Swine	國立屏東科技大學獸醫學系
	250	36	Porcine respiratory disease complex (PRDC) and polyserositis, caused by co-infection with pseudorabies (PR) virus, porcine circovirus type 2 (PCV 2), porcine reproductive and respiratory syndrome (PRRS) virus and *Salmonella typhimurium*.	Swine	屏東縣家畜疾病防所
病毒	255	37	Vaccine-induced canine distemper	gray foxes	國立台灣大學獸醫學系
	265	39	Bronchointerstitial pneumonia (PCV II infection)	Swine	台灣大學獸醫學系
	295	42	Feline infectious peritonitis (FIP)	Cat	中興大學獸醫病理所
	362	51	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
	381	54	Polyomavirus infection of urinary tract	Human	羅東博愛醫院
	405	57	Porcine circovirus-associated lymphadenitis	Swine	國立屏東科技大學 獸醫教學醫院病理科
	414	59	Rabies virus infection	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	415	59	Canine distemper virus infection	Dog	台灣大學獸醫專業學院 分子暨比較病理生物學研究所
	420	60	Respiratory syncytial virus infection	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	421	60	Porcine epidemic diarrhea (PED)	Piglet	國立中興大學獸醫病理生物學研究所
	455	66	Goose Haemorrhagic Polyomaviruses (GHPV)	Goose	農委會家畜衛生試驗所
	456	66	HPV associated small cell neuroendocrine carcinoma of uterine cervix	Human	羅東博愛醫院病理科
	458	66	Roventricular dilatation disease (PDD)	Cacatuini	國立中興大學獸醫病理生物學研究所
	23.	3	Chromomycosis	Human	台北病理中心
黴菌	47.	7	Lung: metastatic carcinoma associated with cryptococcal infection. Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院
	48.	7	Adiaspiromycosis	Wild rodents	台灣大學獸醫學系
	52.	7	Aspergillosis	Goslings	屏東縣家畜疾病防治所
	53.	7	Intracavitary aspergilloma and cavitary tuberculosis, lung.	Human	羅東聖母醫院
	54.	7	Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM.	Human	林口長庚紀念醫院
	105.	13	Mucormycosis Diabetes mellitus	Human	花蓮佛教慈濟綜合醫院
	127.	15	Eumycotic mycetoma	Human	花蓮佛教慈濟綜合醫院
	138	17	1. Aspergillus spp. encephalitis and myocarditis 2. Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
黴	298	43	Systemic Candidiasis	Tortoise	中興大學獸醫學院

菌	318	45	Alfatoxicosis in dogs	Canine	國立臺灣大學 獸醫專業學院
	322	46	Allergic fungal sinusitis	Human	羅東博愛醫院
	326	46	Meningoencephalitis, Aspergillus flavus	Cat	國立臺灣大學 獸醫專業學院
	331	47	Histoplasmosis	Human	花蓮慈濟醫院病理科
	332	47	Pulmonary Blastomycosis	Rat	中興大學獸醫學院
	355	50	Encephalitozoonosis	Rabbit	國立中興大學獸醫學院
	356	50	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	386	54	Dermatophytic pseudomycetoma	Cat	台灣動物科技研究所
	395	56	Systemic Cryptococcus neoformans infection in a Golden Retriever	Dog	國立台灣大學分子暨比較病理生物學研究所
	441	63	Protothecosis	Dog	國家實驗動物繁殖及研究中心
	449	65	Porcine epidemic diarrhea (PED)	Piglet	國立台灣大學分子暨比較病理生物學研究所
寄生蟲	14.	2	Dirofilariasis	Dog	台灣省家畜衛生試驗所
	15.	2	Pulmonary dirofilariasis	Human	台北榮民總醫院
	20.	3	Sparganosis	Human	台北榮民總醫院
	46.	7	Feline dirofilariasis	Cat	美國紐約動物醫學中心
	49.	7	Echinococcosis	Human	台北榮民總醫院
	60.	8	Intestinal capillariasis	Human	台北馬偕醫院
	64.	8	Adenocarcinoma of sigmoid colon Old schistosomiasis of rectum	Human	省立新竹醫院
	66.	8	Echinococcosis	Chapman's zebra	台灣大學獸醫學系
	67.	9	Hepatic ascariasis and cholelithiasis	Human	彰化基督教醫院
	106.	13	Parasitic meningoencephalitis, caused by Toxocara canis larvae migration	Dog	臺灣養豬科學研究所
	139	17	Disseminated strongyloidiasis	Human	花蓮佛教慈濟綜合醫院
	141	17	Eosinophilic meningitis caused by Angiostrongylus cantonensis	Human	台北榮民總醫院 病理檢驗部
	156	19	Parastrongylus cantonensis infection	Formosan gem-faced civet	中興大學獸醫學院
	157	19	Capillaria hepatica, Angiostongylus cantonensis	Norway Rat	行政院農業委員會 農業藥物毒物試驗所
	202	29	Colnorchiasis	Human	高雄醫學院附設醫院
	203	29	Trichuriasis	Human	彰化基督教醫院
	204	29	Psoroptes cuniculi infection (Ear mite)	Rabbit	農業藥物毒物試驗所
	205	29	Pulmonary dirofilariasis	Human	和信治癌中心醫院
	206	29	Capillaries philippinesis	Human	和信治癌中心醫院
	207	29	Adenocarcinoma with schistosomiasis	Human	花蓮佛教慈濟綜合醫院
	286	41	Etiology- consistent with *Spironucleus* (*Hexamita*) *muris*	Rat	國家實驗動物繁殖及研究中心
	327	46	Dermatitis, mange infestation	Serow	中興大學獸醫學院
	328	46	Trichosomoides crassicauda, urinary bladder	Rat	國家實驗動物中心
	362	51	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
	370	52	Suppurative bronchopneumonia (*Bordetellae trematum)* with *Trichosomoides crassicauda* infestation	Rat	國立中興大學獸醫學院
	416	59	Toxoplasmosis in a finless porpoise	Finless porpoise	國立屏東科技大學獸醫教學

					醫院病理科
		63	Liver milk spots in pig	Pig	中興大學獸醫病理生物學研究所
	453	66	Liver fluke infection	Buffalo	中興大學獸醫病理生物學研究所
原蟲	4.	1	Cryptosporidiosis	Goat	台灣養豬科學研究所
	15.	2	Amoebiasis	Lemur fulvus	台灣養豬科學研究所
	16.	2	Toxoplasmosis	Squirrel	台灣養豬科學研究所
	17.	2	Toxoplasmosis	Pig	屏東技術學院 獸醫學系
	51.	7	Pneumocystis carinii pneumonia	Human	台北病理中心
	57.	8	Cecal coccidiosis	Chicken	中興大學獸醫學系
	65.	8	Cryptosporidiosis	Carprine	台灣養豬科學研究所
	211	30	Avian malaria, African black-footed penguin	Avian	臺灣動物科技研究所
	242	35	Neosporosis	Cow	國立屏東科技大學 獸醫學系
	263	38	Intestinal amebiasis	Human	彰化基督教醫院病理科
	320	46	Cutaneous leishmaniasis	Human	佛教慈濟綜合醫院
	325	46	Myocarditis/encephalitis, Toxoplasma gondii	Wallaby	國立臺灣大學獸醫專業學院
	443	65	Brain toxoplasmosis in a man	Human	佛教慈濟綜合醫院病理科
	462	67	Toxoplasmosis	Human	佛教慈濟綜合醫院病理科
立克次體	229	32	Necrotizing inflammation due to scrub typhus	Human	佛教慈濟醫院病理科
	251	36	Scrub typhus with diffuse alveolar damage in bilateral lungs.	Human	佛教慈濟醫院病理科
皮膚	216	30	Cytophagic histiocytic panniculitis with terminal hemophagocytic syndrome	Human	佛教慈濟綜合醫院病理科
	359	51	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	360	51	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
其它	9.	2	Perinephric pseudocyst	Cat	台灣大學獸醫學系
	10.	2	Choledochocyst	Human	長庚紀念醫院
	11.	2	Bile duct ligation	Rat	中興大學獸醫學系
	37.	4	Myositis ossificans	Human	台北醫學院
	75.	9	Acute yellow phosphorus intoxication	Rabbits	中興大學獸醫學系
	76.	10	Polycystic kidney bilateral and renal failure	Cat	美國紐約動物醫學中心
	80.	10	Glomerular sclerosis and hyalinosis, segmental, focal, chronic, moderate Benign hypertension	SHR rat	國防醫學院 & 國家實驗動物繁殖及研究中心
	83.	10	Phagolysosome-overload nephropathy	SD rats	國家實驗動物繁殖及研究中心 心
	85.	10	Renal amyloidosis	Dog	台灣養豬科學研究所
	89.	10	Severe visceral gout due to kidney damaged infectious serositis	Goose	中興大學獸醫學系
	91.	10	Hypervitaminosis D	Orange-rumped agoutis	台灣大學獸醫學系
	118.	14	Cystic endometrical hyperplasia	Dog	臺灣養豬科學研究所
	121.	14	Cystic subsurface epithelial structure (SES)	Dog	國科會實驗動物中心
	124.	15	Superficial necrolytic dermatitis	Dog	美國紐約動物醫學中心
	125.	15	Solitary congenital self-healing histiocytosis	Human	羅東博愛醫院

其它	126.	15	Alopecia areata	Mouse	國家實驗動物繁殖及研究中心
	142	17	Avian encephalomalacia (Vitamin E deficiency)	Chicken	國立屏東科技大學獸醫學系
	151	18	Osteodystrophia fibrosa	Goat	台灣養豬科學研究所&台東縣家畜疾病防治所
	159	20	Hypertrophic cardiomyopathy	Pig	台灣大學獸醫學系
	165	21	Chinese herb nephropathy	Human	三軍總醫院病理部及腎臟科
	167	21	Acute pancreatitis with rhabdomyolysis	Human	慈濟醫院病理科
	171	21	Malakoplakia	Human	彰化基督教醫院
	183	25	Darier's disease	Human	高雄醫學大學病理科
	191	27	1. Polyarteritis nodosa 2. Hypertrophic Cardiomyopathy	Feline	台灣大學獸醫學系
	193	27	Norepinephrin cardiotoxicity	Cat	台中榮總
	196	27	Cardiomyopathy (Experimental)	Mice	綠色四季
	212	30	Kikuchi disease (histiocytic necrotizing lymphandenitis)	Lymphandenitis	耕莘醫院病理科
	225	32	Calcinosis circumscripta, soft tissue of the right thigh, dog	Dog	台灣大學獸醫所
	230	34	Hemochromatosis, liver, bird	Bird	台灣大學獸醫學系
	234	34	Congenital hyperplastic goiter	Holstein calves	屏東縣家畜疾病防治所
	236	34	Hepatic lipidosis (fatty liver)	Rats	中興大學獸醫學病理學研究所
	237	35	Arteriovenous malformation (AVM) of cerebrum	Human	耕莘醫院病理科
	244	35	Organophosphate induced delayed neurotoxicity in hens	Hens	中興大學獸醫學病理學研究所
	257	37	Severe lung fibrosis after chemotherapy in a child with Ataxia- Telangiectasia	Human	慈濟醫院病理科
	294	42	Arteriovenous malformation of the left hindlimb	Dog	台灣大學獸醫學系
	299	43	Polioencephalomalacia	Goat kid	屏東家畜疾病防治所
	310	44	Hyperplastic goiter	Piglet	屏東家畜疾病防治所
	311	44	Melamine and cyanuric acid contaminated pet food induced nephrotoxicity	Rat	中興大學獸醫學病理學研究所
	318	45	Alfatoxicosis	Canine	國立臺灣大學獸醫專業學院
	333	47	Lordosis, C6 to C11	Penguin	國立臺灣大學獸醫專業學院
	341	49	Pulmonary placental transmogrification	Human	羅東博愛醫院
	345	49	Acute carbofuran intoxication	Jacana	國立中興大學獸醫學院
	350	50	Malakoplakia, liver	Human	慈濟綜合醫院暨慈濟大學
	351	50	Eosionphilic granuloma, Right suboccipital epidural mass	Human	羅東博愛醫院病理科
	359	51	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	360	51	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
	361	51	Hepatotoxicity of SMA-AgNPs	Mouse	國立中興大學獸醫病理生物學研究所
	363	51	Hypertrophy osteopathy	Cat	國立臺灣大學獸醫專業學院
	372	52	Snake bite suspected, skin and spleen	Monkey (red guenon)	國立臺灣大學獸醫專業學院
其他	383	54	Langerhans cell histiocytosis	Human	聖馬爾定醫院病理科
	388	54	Canine protothecosis	Dog	國立臺灣大學獸醫專業學院
	392	55	Lithium nephrotoxicity	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	398	56	Gamma-knife-radiosurgery-related demyelination	Human	佛教慈濟綜合醫院暨慈濟大學病理科

400	56	Canine Disseminated form Granulomatous Meningoencephalitis (GME)	Dog	國立屏東科技大學獸醫教學醫院病理科
419	60	Mucopolysaccharidosis	Cat	國立中興大學獸醫病理生物學研究所
426	61	Phleboliths in a man	Human	台北醫學大學附設醫院口腔外科口腔病理科
427	61	Visceral gout in a Green iguana (*Iguana iguana*)	Iguana	中興大學獸醫病理生物學研究所
431	62	pulmonary alveolar proteinosis in a man	Human	羅東博愛醫院病理科
432	62	Congenital pulmonary airways malformation, type 2 in a women	Human	高雄醫學大學附設醫院
437	63	Large solitary luteinized follicular cyst of pregnancy and puerperium	Human	羅東博愛醫院病理科
454	66	Eosinophilic granuloma	Human	佛教慈濟綜合醫院暨慈濟大學病理科
461	67	Intestinal emphysema	Pig	中興大學獸醫病理生物學研究所
466	67	Nodular goiter	Human	彰化秀傳醫院病理科
Gross	64	Hydronephrosis in a hog pig	Pig	中興大學獸醫病理生物學研究所
Gross	65	1. Traumatic pericarditis, severe, chronic progressive, diffuse, heart. 2. Hardware disease in a cattle	Cattle	中興大學獸醫病理生物學研究所

會 員 資 料 更 新 服 務

各位會員：

您好！如果您的會員資料有更新或誤刊情形，麻煩您填妥表格後寄回學會秘書處或電話連絡：

中華民國比較病理學會秘書處
國立中興大學 獸醫病理生物學研究所
廖俊旺 教授實驗室
助理 許靜宜
cihsu63@dragon.nchu.edu.tw
04-22840894 轉 122
402 台中市南區興大路 145 號 動物疾病診斷中心 1F102 室

----------中華民國比較病理學會----------

會員資料更改卡

姓　　名：_____　　會員類別：☐一般會員
☐學生會員
☐贊助會員

最高學歷：_____

服務單位：_____職　　稱：_____

永久地址：_____

通訊地址：_____

電　　話：_____傳　　真：_____

E-Mail Address：_____

中 華 民 國 比 較 病 理 學 會

誠摯邀請您加入

入　會　辦　法

一、 本會會員申請資格為：

（一）一般會員：贊同本會宗旨，年滿二十歲，具有國內外大專院校（或同等學歷）生命科學及其它相關科系畢業資格或高職畢業從事生命科學相關工作滿兩年者。

（二）學生會員：贊同本會宗旨，在國內、外大專院校生命科學或其他相關科系肄業者（請檢附學生身份證明）。

（三）贊助會員：贊助本會工作之團體或個人。

（四）榮譽會員：凡對比較病理學術或會務之推廣有特殊貢獻，經理事會提名並經會員大會通過者。

二、 會員：

（一）入 會 費：一般會員新台幣壹仟元，學生會員壹佰元，贊助會員伍仟元，於入會時繳納。

（二）常年會費：一般會員新台幣壹仟元，學生會員壹佰元。

【註：學生會員身份變更為一般會員時，只需繳交一般會員之常年會費】

三、入會費及常年會費繳交方式：以銀行轉帳或匯款（**006 合作金庫銀行、帳號：0190-717-052017、戶名：中華民國比較病理學會**）；並請填妥**入會申請表**連同**銀行轉帳交易明細表**或**匯款單**以郵寄或傳真方式寄回中華民國比較病理學會秘書處收(許靜宜小姐)。地址：402 台中市南區興大路 145 號 動物疾病診斷中心 1F 102 室、電話：04-22840894#122、傳真 04-22852186。

中華民國比較病理學會入會申請及會員卡

會電腦編號

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<tr><td rowspan="2">姓名</td><td>中文</td><td></td><td rowspan="2">姓別</td><td rowspan="2">□ 男
□ 女</td><td>出生</td><td>民國　年　月　日</td><td rowspan="2">出生地</td><td rowspan="2"></td></tr>
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<tr><td rowspan="4">學歷</td><td colspan="3">(1)</td><td colspan="4">稱謂(圈選) 先生 小姐 醫師 獸醫師 教授 博士
研究員 主任 其他:</td></tr>
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中華民國比較病理學會

申請人　　簽章

介紹人　　簽章

介紹人　　簽章

中華民國　　年　　月　　日</td><td>審核結果</td></tr>
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