

# 中華民國比較病理學會

## Chinese Society of Comparative Pathology

第 54 次比較病理學研討會



School of Veterinary Medicine, National Taiwan University and Taipei Zoo

國立臺灣大學獸醫專業學院 與 台北市立動物園

March 10, 2012 (中華民國 101 年 3 月 10 日)

Chinese Society of Comparative Pathology

中華民國比較病理學會

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10617 臺北市大安區羅斯福路四段 1 號  
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-----中華民國比較病理學會-----

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# 中華民國比較病理學會

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## 中華民國比較病理學會入會申請及會員卡

會籍電腦編號 \_\_\_\_\_

姓名	中文		性別	男 <input type="checkbox"/>	出生	民國	年	月	日	出生地	省
	英文		女 <input type="checkbox"/>	身分證字號							縣市
			會員身份: <input type="checkbox"/> 一般 <input type="checkbox"/> 學生 <input type="checkbox"/> 贊助								
學歷	(1)				稱謂(請圈選) 先生 小姐 醫師 獸醫師						
					研究員 博士 教授 主任 其他: _____						
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	(3)					(2)					
(4)				(3)							
主要經歷	機關名稱			職務		起			止		
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現職						年	月	年	月		
通訊地址: 現在 電話: 傳真: 永久 電話: 傳真: 電子郵遞(E-mail)地址:											
茲 贊 同 貴會宗旨擬加入為會員嗣後並願遵守一切規章共圖發展 此 致 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										審核結果	

# SCHEDULE

## 54TH MEETING OF COMPARATIVE PATHOLOGY

中華民國比較病理學會第 54 次比較病理學研討會

Date: March 10, 2012 (Sat) 08:30~17:00

時間：101 年 3 月 10 日(星期六) 08:30~17:00

Location: Lecture Hall of Education Center, Taipei Zoo

地點：台北市立動物園行政大樓(教育中心)演講廳

Address: No.30 Sec.2 Xinguang Rd., Taipei City 11656, Taiwan (R.O.C.)

地址：11656 臺北市新光路二段 30 號

Telephone: 02-33663868

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Time(時間)	Schedule(議程)		Moderator(主持)
08:30~09:00	Registration (報到)		
09:00~09:10	Opening Ceremony (致詞)		
09:10~10:10	專題演講	Dr. Feng-Yee Chang (張峰義 疾病管制局 局長) 新興傳染病：從人畜共通傳染病談起	Dr. C. W. Shih 施洽雯 主任
10:10~10:30	Coffee Break		
10:30~11:00	Case 381	Chia-Wen Shih (施洽雯 醫師) Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院)	Dr. F. J. Leu 呂福江 主任
11:00~11:30	Case 382	L.F. Wang (王玲芳 獸醫師) Department of veterinary pathology, NPUST (國立屏東科技大學獸醫教學醫院病理科)	
11:30~12:00	Case 383	Jing-Lan Liu (劉淨蘭 醫師) St. Martin De Porres Hospital (聖馬爾定醫院病理科)	
12:00~13:30	Lunch, and Board Meeting (中華民國比較病理學會會員大會暨理監事會議)		
13:30~14:00	Case 384	S.J. Wu (吳詩柔 獸醫師) Department of Veterinary Medicine, National Chung Hsing University (中興大學獸醫學系)	Dr. Y. H. Hsu 許永祥 主任
14:00~14:30	Case 385	Too-Yuan Tsai (蔡斗元 醫師) Buddhist Tzu Chi General Hospital and University, Taiwan (佛教慈濟綜合醫院暨慈濟大學病理科)	
14:30~14:50	Coffee Break		
14:50~15:20	Case 386	陳憲全 獸醫師 Animal Technology Institute Taiwan (台灣動物科技研究所)	Dr. C. H. Liu 劉振軒 院長
15:20~15:50	Case 387	Mu-Tsung Tsai (蔡睦宗 獸醫師) Pingtung County Livestock Disease Control Center (屏東縣家畜疾病防治所)	
15:50~16:20	Case 388	Y.C. Jian (簡耀君 獸醫師) Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (國立台灣大學分子暨比較病理研究所)	
16:20~17:00	General Discussion (綜合討論)		

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## CASE SIGNALMENT

### 54TH MEETING OF COMPARATIVE PATHOLOGY

March 10, 2012

( 中華民國比較病理學會第 54 次比較病理學研討會 )

Case No.	Presenter	Institution	Slide No.	Signalment
Case 381	施洽雯	Lo-Hsu Foundation, Inc., Lotung Poh-Ai Hospital (羅東博愛醫院)		65-year-old woman.
Case 382	王玲芳	Department of veterinary pathology, National Pingtung University of Science and Technology (國立屏東科技大學獸醫教學醫院病理科)	0T-10696	Kidney tissues, slaughter pigs
Case 383	劉淨蘭	St. Martin De Porres Hospital (聖馬爾定醫院病理科)	S00-6602Y3	48-year-old woman
Case 384	吳詩柔	Department of Veterinary Medicine, National Chung Hsing University (中興大學獸醫學系)	CW11-014C	Leopard Cat, male, 2-3 year-old
Case 385	蔡斗元	Buddhist Tzu Chi General Hospital and University, Taiwan (佛教慈濟綜合醫院暨慈濟大學病理科)	S2011-9609	57-year-old woman
Case 386	陳憲全	Animal Technology Institute Taiwan (台灣動物科技研究所)	S12-597b	19-year-old Chinchila male cat
Case 387	蔡睦宗	Pingtung County Livestock Disease Control Center (屏東縣家畜疾病防治所)	Q100-297	7-month-old, finishing pig, LYD type, Swine
Case 388	簡耀君	Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (國立台灣大學分子暨比較病理研究所)	NP-376F	5-year-old, intact male Maltese

## CASE DIAGNOSIS

### 54TH MEETING OF COMPARATIVE PATHOLOGY

March 10, 2012

( 中華民國比較病理學會第 54 次比較病理學研討會 )

Case No.	Presenter	Institution	Slide No.	Diagnosis
Case 381	施洽雯	Lo-Hsu Foundation, Inc., Lotung Poh-Ai Hospital (羅東博愛醫院)		Polyomavirus infection of urinary tract
Case 382	王玲芳	Department of veterinary pathology, National Pingtung University of Science and Technology (國立屏東科技大學獸醫教學醫院病理科)	OT-10696	Leptospirosis
Case 383	劉淨蘭	St. Martin De Porres Hospital (聖馬爾定醫院病理科)	S00-6602Y3	Langerhans cell histiocytosis
Case 384	吳詩柔	Department of Veterinary Medicine, National Chung Hsing University (中興大學獸醫學系)	CW11-014C	Neisseria Infected Pneumonitis in a Housed Leopard Cat
Case 385	蔡斗元	Buddhist Tzu Chi General Hospital and University, Taiwan (佛教慈濟綜合醫院暨慈濟大學病理科)	S2011-9609	Mycobacteria avian complex dacryocystitis
Case 386	陳憲全	Animal Technology Institute Taiwan (台灣動物科技研究所)	S12-597b	Dermatophytic pseudomycetoma
Case 387	蔡睦宗	Pingtung County Livestock Disease Control Center (屏東縣家畜疾病防治所)	Q100-297	Swine Erysipelas
Case 388	簡耀君	Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (國立台灣大學分子暨比較病理研究所)	NP-376F	Canine protothecosis



Case Number: 381

54th Meeting of Comparative Pathology, March 2012

Shih, C.W (施洽雯), M.D., M.S

Chen, C.T. (陳朱德), M.D.

Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院病理科)

**CASE HISTORY:**

**Signalment:** 65-year-old woman.

**Clinical History:**

A 65 y/o female called Uro OPD with the problem of persistent microhematuria.

General examination did not show any other abnormality. Abdominal echo, KUB and urine routine were performed. Abdomen echo of the right kidney shows mild thickening of renal cortex, mild increased echogenicity. It is compatible with renal parenchymal disease. Abdomen echo of the left kidney also shows mild thickening of renal cortex, mild increased echogenicity. It is compatible with renal parenchymal disease.

**Gross Findings:**

Creatinine: 0.7 mg/dL (0.6-1.3 mg/dL), ALT: 18 U/L (5-40 U/L), Cholesterol: 224 mg/dL (125-199 mg/dL). Urine routine shows Color: yellow, PH: 6 (4.5-8.0),

Glu: -, Bil: -, KET: -, Pro: -, Ery: +, RBC: 0-2 (0-2), WBC: 0-2 (0-5).

Shih, C.W (施洽雯), M.D., M.S

Chen, C.T. (陳朱德), M.D.

Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院病理科)

### **CASE RESULT:**

#### **Cytopathologic Findings:**

Some benign transitional epithelial cells with some typical cells were noted. Some of the atypical cells with large homogenous, ground-glass intranuclear bodies. A condensed rim of chromatin is visible under the nuclear membranes may be seen. Some of the atypical cells with vesicular nuclei and a distinct network of coarsely granular and clumped chromatin.

#### **Differential diagnosis:**

1. Adenovirus
2. Herpes simplex virus
3. Cytomegalovirus
4. Carcinoma
5. Polyomavirus

**Diagnosis:** Polyomavirus infection.

#### **Discussion:**

Murine polyomavirus was the first polyomavirus discovered by Ludwik Gross in 1953. Subsequently, many polyomaviruses have been found to infect birds and mammals. The first strain of human polyomaviruses was isolated from the urine in 1971 and named "BK-polyomavirus" strain. Polyomaviruses are DNA-based (double-stranded DNA), small (40-50 nanometers in diameter). Nine polyomaviruses have been found in humans as BK virus (1971), JC virus (1971), KI virus (2007), WU virus (2007), Merckel cell polyomavirus (2008), TSV (2010), HPyV6 (2010), HPyV7 (2010), HPyV9 (2011).

The name polyoma refers to the viruses' ability to produce multiple (poly-) tumors (-oma). It has been report that BKV was found in fibrosarcomas, papillary ependymomas, insulinomas of the pancreas, choroids plexus papillomas and osteosarcomas. The JCV was found in neruoblasoma, retinoblastoma, colon cancer, malignant gliomas and breast cancer. JC virus can infect the respiratory sysyem, kidneys, or brain (sometimes causing the progressive multifocal leukoencephalopathy, PML). BK virus produces a mild respiratory infection and can affect the kidneys of immunosuppressed transplant patients. Polyomaviruses of the BK- and JC-strains often remain latent within the transitional cell layer of the bladder, ureters and the renal pelvis as well as

in tubular epithelial cells of the kidney.

All the polyomaviruses are highly common childhood and young adult infections.

BK and JC viruses are very widespread: approximately 80% of the adult population in the United States has antibodies to BK and JC. Most of these infections appear to persist as latent infections and cause little or no symptoms. They are potentially oncogenic and produce tumors in a host of a different species. In 2008, Merkel cell polyomavirus, was described and shown to cause most Merkel skin cancer. Diseases caused by human polyomavirus infections are most common among persons who become immunosuppressed by AIDS, old age or after transplantation.

There are three main diagnostic techniques used for the diagnosis of polyomavirus infection of urinary tract: 1. Urine cytology. 2. Quantification of the viral load in both urine and blood. 3. Renal biopsy.

In 1992, Koss and colleagues described polyomavirus inclusion bearing cells for the first time in urine cytology specimens. They coined the term “decoy cells”.

The reactivation of polyomavirus in the kidneys and urinary tract causes the shedding of infected cells (decoy cells) in the urine. The name “decoy cell” is a descriptive term for epithelial cells with intranuclear viral inclusion bodies that can have different phenotypes (types 1-4) depending upon the state of viral replication and maturation as well as the state of cellular preservation. Type 1: Large homogenous, ground-glass intranuclear inclusion bodies. A condensed rim of chromatin is visible under the nuclear membranes and /or with eccentric “comet-like” cytoplasm. Type 2 : “CMV-like” decoy cells showing central, intranuclear viral inclusion bodies surrounded by nuclear halo. The nuclear membranes are easily discernible and/or with a “comet-like” cytoplasm. Type 3: decoy cells showing a granular chromatin pattern and multinucleation. Type 4: decoy cells with vesicular nuclei and a distinct network of coarsely granular and clumped chromatin.

Based on the detection of decoy cells in the urine, transient and asymptomatic reactivation of polyomaviruses can be seen in 0.5-0.6% of all urine cytology specimens. The sensitivity and specificity of decoy cells for diagnosing BKN is 99% and 95% respectively. A high prevalence of decoy cell shedding is found in pregnant women (3%), patients suffering from cancer (13%), and diabetes mellitus (3%), as well as in healthy renal allograft (23%) and pancreas transplant (11%) recipients. Renal biopsy can also be used in the diagnosis of polyomavirus infection. The polyomavirus inclusion in the nucleus of the renal cells can be seen under light microscopy. Immunohistochemically, a monoclonal antibody against polyomavirus antigen shows utility in the diagnosis of polyomavirus. PCR and EM analyses of urine samples have also been used to evaluate the activation of polyomaviruses.

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Wang, L.F.(王玲芳), Chang, T.C.(張聰洲), Chang, C.D.(張清棟), Wang, H.C.(汪鴻展), Chiou, M.T. (邱明堂)

Department of veterinary pathology, National Pingtung University of Science and Technology (國立屏東科技大學獸醫教學醫院病理科)

**CASE HISTORY:**

**Signalment:** Kidney tissues, slaughter pigs.

**Clinical history:**

Seven condemned kidney tissues from 7 different pigs were sent to the pathology laboratory of National Pingtung University of Science and Technology for examinations and necropsy.

**Gross findings:**

The grading for gross examination were based on the macroscopic criteria proposed by Baker et al.(1989). Kidneys were pathologically classified from 0 to 3 grades. The grading criteria were as follows: grade 0 (no gross lesions), grade 1 (less than 10 whitish foci between 2–5 mm in diameter), grade 2 (more than 10 whitish foci, or the presence of one white stain, or more, measuring less than 1 cm in diameter), grade 3 (renal cortical tissue completely covered by whitish foci or stains). Among the 7 kidneys with macroscopic white foci, 3 were classified as grade 1(No.693-694), 3 were classified as grade 2(No.692, 696), and 1 was classified as grade 3(No.698).

Wang, L.F.(王玲芳), Chang, T.C.(張聰洲), Chang, C.D.(張清棟), Wang, H.C.(汪鴻展), Chiou, M.T. (邱明堂)

Department of veterinary pathology, National Pingtung University of Science and Technology (國立屏東科技大學獸醫教學醫院病理科)

### **CASE RESULT:**

#### **Histopathological finding:**

Kidneys showed interstitial nephritis characterized by several peritubular and perivascular lymphoplasmocytic inflammatory foci associated with few neutrophils. Part of lumen of the collecting ducts of the medulla had coagulative necrosis.

#### **Laboratory results:**

Silver Staining : 5 of seven kidney tissues were Silver Staining positive. The black, spiral leptospirae were found in the lymphoid follicles lesion in cortex.

#### **Differential diagnosis:**

1. Porcine circovirus type 2
2. Porcine Reproductive and Respiratory Syndrome

#### **Diagnosis:** Leptospirosis

#### **Discussion:**

Leptospirosis has been reported all around the world and it usually takes place after rainy season or flood. According to the data from Center for Disease Control, there were several cases happening in Taiwan recently. In September 2001, Typhoon Nali hit northern Taiwan and caused severe flooding. The flood was followed by an outbreak of leptospirosis in October 2001 with 16 cases confirmed. The onset of this outbreak was compatible with the flooding for incubation time and contact history. Leptospirosis is a significant public health concern because of its global distribution, the risk of epidemics, and the potentially high case-fatality rates when left untreated. (WHO, No. 6, 2011). In Taiwan, reported cases of leptospirosis have been investigated by the Centers for Disease Control since 2001. During 2001–2006, of 7,733 suspected human cases of leptospirosis, 291 cases were confirmed. The major serotype identified was *L. santarosai* serovar Shermani. (Guy Boivin, Vol. 14, No. 5, May 2008). Although leptospirosis is not a major public health problem in many countries, endemic and epidemic outbreak of this disease with considerable morbidity and mortality has been reported. Therefore clinical or laboratory manifestations are

helpful in making diagnosis of leptospirosis.

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Jing-Lan Liu (劉淨蘭), M.D; Pei-Yi Chu (朱旆億), M.D.

Department of Pathology, St. Martin de Porres Hospital. (聖馬爾定醫院病理科)

### **CASE HISTORY:**

**Signalment:** 48-year-old woman

#### **Clinical history:**

This 48-year-old woman suffered from swelling over right side face for one week. She complained of absence of menstrual period after delivery of a twin at 20 years ago. She also felt thirst easily and needed to drink large amounts of water; the urine output was marked increased during the past 20 years. She has visited a local hospital for evaluation at 2 years ago. Diabetes insipidus and Sheehan syndrome were suspected. However, she decided not to receive any treatment.

This time, she had received tooth extraction on right side lower ridge about one month ago. After extraction, she felt poorly healing of wound and swelling over her right side face since one week ago. Due to jaw pain while chewing, she came to our hospital for evaluation and management.

The physical examination revealed right face swelling extending to submandibular area and atrophy of lingual side of right mandibule. Some itching papules over scalp were noted. The neck computed tomography showed bony destruction over right mandibular ramus and body. Under the impression of infectious process or tumor, incisional biopsy followed by excision of the lesion was done

#### **Clinical Pathology:**

RBC:  $4.72 \times 10^6 / \mu\text{L}$  (3.79-4.99 $\times 10^6 / \mu\text{L}$ ), Hb: 12.5 gm/dL (11.0-15.6 gm/dL), Hct: 38.4% (35.6-45.4%), WBC: 10750/ $\mu\text{L}$  (3800-9800/ $\mu\text{L}$ ), Lymphocyte: 40.8% (16.0-45.0%), Neutrophil: 51.9% (44.0-79.0%), Monocyte: 4.7% (2.0-13.0%), Plt:  $45.2 \times 10^4 / \text{dL}$  (11.8-39.6 $\times 10^4 / \text{dL}$ )

BUN: 6 mg/dL (5-23 mg/dL), Creatinine: 0.93 mg/dL (0.44-1.03 mg/dL), AST: 50 IU/L (14-39 IU/L), ALT: 11 IU/L (10-43 IU/L), Glucose: 224 mg/dL (74-106 mg/dL), Na: 129 mmol/L (136-144 mmol/L), K: 4.2 mmol/L (3.6-5.1 mmol/L), Cl: 131 mmol/L (101-111 mmol/L), Ca: 8.1 mg/dL (8.9-10.3 mg/dL), HbA1c: 10.9% (4-6%)

FSH: 5.7 mIU/ml, LH: 1.22 mIU/ml, Estradiol: 10.1 pg/ml, Prolactin: 10.4 ng/ml (<20.0 ng/ml)

Urine osmolality: 86 mosm/kg (50-1200 mosm/kg), Serum osmolality: 296 mosm/kg (279-295 mosm/kg), Urine specific gravity: 1.000

#### **Gross findings:**

The specimen consisted of one fragment of right partial mandible with adhered muscle and soft tissue, measuring 8.5 x 8.0 x 2.0 cm in size. The mandibular bone measured 8.0 x 7.7 x 1.4 cm in size. Grossly, an ill-defined, gray-brown and firm tumor measuring 2.0 x 2.0 x 1.0 cm in size located at body and ramus of mandibular bone was seen. The tumor destructed the bony structure. The



surrounding soft tissue and muscle revealed fibrosis. The right submandibular gland and several neck lymph nodes were also submitted and revealed unremarkable change.

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### **CASE RESULT:**

#### **Histopathological finding:**

Microscopically, the mandibular bone and surrounding soft tissue are infiltrated by sheets of tumor cells. The tumor cells are ovoid with grooved, folded, lobulated or irregular nuclei. The cytoplasm is moderately abundant and clear to slightly eosinophilic. No cellular atypia is seen. Mitotic figures are not found. The background reveals eosinophilic, lymphocytic and neutrophilic infiltration. The soft tissue near the lesion reveals fibrosis. The submandibular gland and neck lymph nodes are not involved by the tumor.

#### **Immunohistochemistry:**

The tumor cells express CD1a and S100 protein.

**Diagnosis:** Langerhans cell histiocytosis

#### **Diagnostic criteria:**

1. Histopathology: oval tumor cells, about 10-15  $\mu\text{m}$ , characterized by grooved, folded or lobulated nuclei and slightly eosinophilic cytoplasm
2. Immunohistochemistry: positivity of CD1a and/or Langerin (CD207)

#### **Discussion:**

Langerhans cell histiocytosis (LCH) is a clonal proliferation of Langerhans cells (LC). LC was first discovered by Paul Langerhans in 1868. Due to the dendritic process of the cell, it was initially mistaken for a neuronal cell. LC is a bone marrow-derived dendritic cell which can be found at skin, mucosa and lymph nodes. LCH was formerly designated as "Histiocytosis X", which including a disease spectrum of eosinophilic granuloma, Schüller–Christian disease and Letterer–Siwe disease. Recent researches revealed the "Birbeck granules" in normal LCs and lesional histiocytes from histiocytosis X were identical, and the term Histiocytosis X was gradually replaced by LCH.

LCH is a rare disease which occurred most frequently in childhood. The features of the disease are not fully defined in adult. Child and adult patients share many identical features. LCH can be presented as solitary lesion, multifocal unisystem disease or multisystem disease. The common involved sites are bone, skin, lung, liver, spleen, bone marrow, lymph nodes and the hypothalamic-pituitary region. Involvement of bone marrow, liver, spleen and lungs is associated with poor prognosis.

The clinical features of LCH depend on the site of involvement. In this case, the patient had symptoms of central type diabetes insipidus and gonadotropin deficiency since 20 years ago. These symptoms can be the first presentation of LCH, since hypothalamic-pituitary region is a frequently involved site. Diabetes insipidus and gonadotropin deficiency are considered to be permanent in patient with LCH. The mandibular bone lesion may also exist for a long period and gradually grow in size to cause bony destruction.

The clinical course is related to the extent of the disease at presentation. We considered this patient is a multifocal unisystem disease involving bone and adjacent tissue. Curettage is sufficient for patient with localized bone lesions, and topical steroid or low dose radiotherapy may be beneficial. However, the experience in adult patient is limited, and the standard therapeutic approach is still need to be defined.

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### **CASE HISTORY:**

**Signalment:** 2-3-year-old, intact male Leopard cat (*Prionailurus bengalensis*)

### **Clinical history:**

The Leopard cat was the second generation of artificial propagation, housed with another male for 1 year. According to the owner, this patient had shown signs of emaciation and presented anorexia for two days. It became tachypnea and unwilling to move and was sent to Endemic Species Research Institute (ESRI) for therapy.

In clinic, this patient was seriously emaciated and weighed only 3.1 kg (normal male leopard cat's weight is 4-5 kg). Firstly, it was hospitalized and then was treated with LRS 60 ml/kg/day by IV-infusion, and Enrofloxacin 5 mg/kg, B-complex 1 ml, and dexamethasone 1 mg/kg by IM-injection. Then, the patient was rested in the oxygen box, but still showed tachypnea. It was found dead next morning.

### **Image finding:**

#### **Chest X ray:**

Locally extensive, cloud shadows with increase of intensity of lungs were found in the left lobes. The right lobe had numerous lower opacity areas.

### **Clinical Pathology:**

#### **Hematology:**

The hematological examination was determined using an automated hematology analyzer and parameters of patient are listed as follow: RBC:  $5.97 \times 10^{12}/L$  ( $5-11 \times 10^{12}/L$ ), Hb: 9.9 g/dL (8-15 g/dL), Hct: 29.1 % (25-45 %), MCV: 48.8 fl (39-50 fl), MCH: 16.6 pg (12.5-17.5 pg), MCHC: 34.1 g/dL

(31-38.5 g/dL), WBC:  $7.1 \times 10^9/L$  ( $5.5-19.5 \times 10^9/L$ ), Plt:  $76 \times 10^9/L$  ( $200-500 \times 10^9/L$ ), Lymphocyte:  $0.4 \times 10^9/L$  ( $1.8-7 \times 10^9/L$ ), Granulocyte (Neutrophil):  $6.4 \times 10^9/L$  ( $2.8-13 \times 10^9/L$ ), MID cell (Monocyte, eosinophil and basophil):  $0.3 \times 10^9/L$  ( $0.2-1 \times 10^9/L$ ), respectively. Normal ranges of CBC are cited from domestic cats.

#### Serum biochemistry:

Enzymatic activity was conducted from serum during it was hospitalized Sera were analyzed by enzymatic methods using an automatic analyzer. The serum parameters of patient as follow: Glucose: 126 mg/dL (70-110 mg/dL), T-Cholesterol: 125 mg/dL (95-130 mg/dL), T-Bilirubin: 4.6 mg/dL (0.02-0.2 mg/dL), BUN: 48 mg/dL (20-30 mg/dL), AST/GOT: 83 IU/L (6-43 IU/L), ALT/GPT: 18 IU/L (10-80 IU/L), T-protein: 6.9 g/dL (5-7.6 g/dL), Albumin: 1.5 g/dL (2.1-7.3 g/dL), Triglyceride: 118 mg/dL (21-155 mg/dL), Uric acid: 1.0 mg/dL (0.1-1.5 mg/dL), LDH: 1179 IU/L (16-69 IU/L), ALP: 10 IU/L (2-27 IU/L), CK: 813 IU/L (7-29 IU/L), Creatinine: 2.2 mg/dL (1-2 mg/dL), and  $Ca^{2+}$ : 11.4 mg/dL (8.6-11 mg/dL), respectively. Normal ranges of serum biochemistry are cited from domestic cats.

#### **Gross findings:**

The carcass of patient was expired on the next day and sent to Animal Disease Diagnostic Center for necropsy. The appearance was showed emaciated and has hemorrhagic exudate around snout. There were extensive in the right lobe, and multifocal, distinct marginal and yellow-to-white nodular or abscess lesions, 2 x 2 x 3 cm, in diameters in the left lobe of lungs. The thoracic cavity was full of bloody and cloudy fluid. Other organs were normal, except, head was preserved for the specimen of wildlife in ESRI.

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## **CASE RESULT:**

### **Histopathological finding:**

Lung: The affected lungs showed focal to extensive, severe, acute to subacute, suppurative pneumonia. Bronchioles and alveoli were mainly infiltrated with macrophages, neutrophils, and monocytes in the alveolar spaces with sporadic basophilic bacteria microcolonies. Within the nodules, there was extensive necrosis of pulmonary tissue, fibrin and inflammatory cells.

Lymph node: Moderate lymphoid depletion.

### **Histochemistry Examination:**

The bacteria in the pulmonary nodules were gram-negative using Gram stain, and the Periodic acid-Schiff (PAS) stain was also positive with pink staining. Furthermore, the Acid-fast stain was negative in bacteria.

### **Laboratory results:**

#### **Bacteria isolation:**

The specimen was collected from the lung and incubated on blood agar (BA) overnight at 37 °C. The colonies on BA were uniform type. The bacterial smear appeared red following a Gram stain procedure and coccal in morphology. Then those were cultured on Cystine tryptic agar (CTA) to determine if organisms can ferment various carbohydrates, though result was negative. Finally, *Neisseria species* was identified by BBL Crystal™ *Neisseria/ Haemophilus* (N/H) Identification Systems.

The identification of cultural colonies was done blind for double check by the other microbiological laboratory; however, the result was *Klebsiella pneumoniae*.

### Pleural fluid smear:

By Diff-Quick stain, numerous basophilic cytoplasmic inclusion organisms were observed in monocytes and were diagnosed to be monocytic *Ehrlichia* infection.

### Molecular biology:

Canine distemper virus was detected by RT-PCR with lung tissue and *Ehrlichia canis* was assayed by PCR with blood were all negative reactions.

### **Differential diagnosis:**

1. Mycosis infection (Histoplasmosis, Aspergillosis)
2. Tuberculosis

**Diagnosis:** *Neisseria* species infected suppurative pneumonia.

### **Discussion:**

Leopard cats (*Prionailurus bengalensis*) are the endemic species in Taiwan, and listed in the endangered species of wild fauna. Although they look like domestic cats, leopard cats always live alone and have specific white spots on the back of both ears, leopard-like pattern of the fur, and nocturnal habit. Leopard cats are nervous and sensitive by nature, and hard to tame. Their habitat in Taiwan is often at low altitude to 1500 m-high-mountain, around developed farm land.<sup>(14)</sup>

*Neisseria* are gram-negative cocci or rods, represented by more than 15 species. Centers for Disease Control and Prevention (CDC) Group Eugonic Fermenter (EF) 4 is the designation given by the CDC for an as-yet unclassified thought to be of the family *Neisseriaceae*.<sup>(9)</sup> The most pathogenic genus of those are *Neisseriameningitidis* and *N. gonorrhoeae*, which cause bacterial meningitis and gonorrhoea, respectively. Another group of nongonococcal, nonmeningococcal neisseriae is part of the normal respiratory flora and infrequently causes disease. These organisms include *N. lactamica*, *N. mucosa*, *N. sicca*, *N. flavescens*, *N. subflava*, *N. perflava*, *N. flava*, and so on.<sup>(7)</sup>

However, most prior reports of pathogenic infections in felidae have involved fatal necrotizing pneumonia, the multifocal distribution of which suggests haematogenous dissemination<sup>(16)</sup>. This has been reported in 16 cats, as well as a tiger cub, a lion and two Chinese leopard cats.<sup>(4,16)</sup> Other lesions tabulated for cats are keratitis, retrobulbar abscessation, otitis, sinusitis and an infected fracture; the treatment and fate of these cats, however, were not documented.<sup>(4)</sup>

In this case, *Neisseria* species were isolated from the lung. It showed marked increase of LDH 1179 IU/L (normal: 16-69 IU/L), ALP 10 IU/L (normal: 2-27 IU/L), and CK 813 IU/L (normal: 7-29 IU/L) in biochemistry. In addition, the pulmonary nodules showed severe, acute to subacute, suppurative pneumonia. Bronchioles and alveoli were mainly infiltrated with macrophages, neutrophils, and monocytes in the alveolar spaces. Within the nodules, there was extensive necrosis of pulmonary tissue, fibrin and inflammatory cells. The bacterial microcolonies seem coccal and basophilic in H&E stain. The gross lesions of lung were resembled to that of either lung abscesses or tuberculosis.

However, the bacteria in the pulmonary nodules were gram-negative using Gram stain, and the PAS stain was positive on lesion. Otherwise, the Acid-fast stain was negative in bacteria.

Finally, *Neisseria* species was identified by BBLCrystal™ *Neisseria* /*Haemophilus* (N/H) Identification Systems.<sup>(17)</sup> According to the negative result of the CTA test, it excludes *N. meningitides*, *N. gonorrhoeae*, *N. lactamica* and *N. mucosa* from pathogen.<sup>(5,14)</sup> Based on the history, clinical signs, histopathological examination and previous case reports, *N. sicca*, *N. subflava* and *N. canis* are more suspected about.<sup>(8)</sup>

Further studies based on 16S rRNA sequencing and DNA-DNA hybridization are needed to assess whether the CDC group EF-4a subgroups detected represent distinct species and to assess how they relate genetically to the type strains.<sup>(2,7)</sup> Major fatty acids detected was another method. Most non-fermenters required extend characterization by cellular fatty acid profiling, but some minority organisms remained unidentified.<sup>(7, 17)</sup>

Another organism that identified later was *Klebsiella pneumonia*, which causes destructive changes. This patient population is believed to have impaired respiratory host defenses. The organisms gain access after the host aspirates colonizing oropharyngeal microbes into the lower respiratory tract. However, according to morphology in pleural fluid smear and histology by Gram stain, the shape of bacteria is coccal form. So, *Klebsiella pneumonia* might not be a major pathogen in this case.

According to the three paragraphs above, predisposing factors to bacterial colonization are speculated about. Canine distemper (CD) virus<sup>(1)</sup>, Feline leukemia virus (FeLV)<sup>(14)</sup> and avian influenza (AI) virus<sup>(11)</sup> are most common pathogens in feline that appear lymphoid depletion of lymph node. In fact, CD virus that detected by RT-PCR with lung tissue was negative. There are no found inclusion bodies in the bronchial and bronchiolar cells, too. The others of viruses are suspected but not evidenced yet.

In human, nongonococcal, nonmeningococcal neisseriae are reported that isolated from dogs or cats bite wounds. *Neisseria animaloris* sp. nov., *N. zoodegmatis* sp. nov., *N. elongata*, *N. canis* and *N. weaveri* sp. nov. have been reported. Another factor of sensitive patients is immunodeficient patients, including primary and acquired.<sup>(10, 15)</sup> Acquired immunodeficiencies can result from various immunosuppressive agents, for example, malnutrition, aging, particular medications and virus infection. In addition to *Neisseria meningitidis* and *N. gonorrhoeae*, various human infections caused by *Neisseria species* are including endocarditis, pneumonia, sinusitis, sepsis, and urethritis.<sup>(10)</sup> In this case, although severe inflammation happened in lungs; it is interesting, no elevation of WBCs in blood, both platelets of  $76 \times 10^9/L$  ( $200-500 \times 10^9/L$ ) and lymphocytes of  $0.4 \times 10^9/L$  ( $1.8-7 \times 10^9/L$ ) were decreased. Also, numerous *Ehrlichia* organisms were found in monocytes. From above data, it was suggested that patient might be immunodeficient-associated.

Effective therapy for the *Neisseria* infection, antibiotic agents like cephalosporin and doxycycline are common use in first choice. Azithromycin effectively treats genitourinary infections and has been used to treat uncomplicated gonorrhea in persons with cephalosporin allergy<sup>(4)</sup>.



In conclusion, *Neisseria* species infected suppurative pneumonia was primary diagnosed. It was occurred only on one leopard cat; the other male looked healthy but thinner. It is interesting that pneumonia did not concurrently happen in these two housed leopard cats. This patient was seriously emaciated and weighed only 3.1 kg (normal male leopard cat's weight is 4-5 kg), may be due to chronic malnutrition because of shortage of food supplement from owner for a long time. Further investigations, interviewing of the owner and examining the surviving leopard cat to determine the cause of the susceptibility in leopard cats. Importantly, these data may be helpful for breeding the endemic species in the future.

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### **CASE HISTORY:**

**Signalment:** 57 year-old woman

#### **Clinical history:**

Ms. Cheng, 57 year-old woman who had TB past history with completed treatment, came to our ophthalmologic OPD due to progressive symptom of tearing and poor-healed wound over medial canthal area in the right eye for one year.

One year and three months ago (99/04/21-99/04/30), she was admitted to Veterans General Hospital due to cold-like symptoms, watery diarrhea, low grade fever, body weight loss. Legionella pneumonia was diagnosed by consolidation on left upper lobe in chest X-ray and Legionella antibody positive 1:1024 in serum. TB smear was negative. During this course, the patient complained about bilateral eyes excessive tearing, and treated with artificial tear and CM eye drop.

Eight months ago (99/12/08-100/01/28), She was admitted to Veterans General Hospital again due to right lower leg and low back pain. Acute exacerbation of asthma with shortness of breath occurred during the course. TB smear revealed positive, and the patient was managed by two weeks of isolation and anti-TB treatment. In this course, the patient suffered from frequent tearing and periorbital redness painful swelling. Nasolacrimal duct obstruction was diagnosed by ophthalmologist, and treated with conservative treatment.

This time (100/07/25), the patient came to our ophthalmologic OPD due to tearing and a poor healed wound over medial canthal area in the right eye. The wound combined with much discharge, and irrigation revealed lots of backflow. Periorbital erythema, tenderness, and hard mass was noted. Besides, the patient complained about the headache. There were no fever and chills, no visual acuity decreased no diplopia. In the laboratory test, complete blood count revealed leucocytosis. The culture of wound and pus revealed no bacteria growth.

After empiric antibiotics therapy for 3 days, the symptoms seemed to be stationary. The biopsy was done on 100/08/01. On the 100/08/05, bloody discharge and eyelid swelling were noted in OPD. On the 100/08/11, the wound on the right eye was not improved. In addition, the patient complained about shortness of breath. In physical examination, ulcerative skin lesion with pus and blood discharge over left clavicle was noted. Chest X-ray showed no significant finding. The patient lost follow up since then.

Past history:

1. Suspected disseminated nontuberculous mycobacteria infection or *Tuberculous mycobacteria* infection resembling bone metastasis s/p Anti-TB medication 97/09/2-98/06/22
2. Left upper lobe pneumonia (Legionella pneumophila infection)
3. Recurrence Herpes zoster with post-herpes neuralgia(VAS:8-9)
4. Tonsillar Kaposi's sarcoma, HHV-8 PCR(+), HIV(-), s/p tonsillectomy on 97/06/09
5. Hx of Salmonellosis with bacteremia
6. Hx of Herpes zoster at S2-3 dermatome
7. Chronic hepatitis C
8. Low back pain, r/o spinal stenosis or HIVD
9. L3-L5 spondylolisthesis s/p total laminectomy on 96/07/17
10. Gallstones with cholecystitis s/p laparoscopic cholecystectomy on 94/11/17
11. GU &DU history
12. GERD

History of allergy, society, and family:

1. Allergy to Ampicillin (generalized itching)
2. Animal exposure(-)
3. Travel history(-)
4. Personal, social and occupational history: well
5. Education level: moderate
6. Occupation exposure: nil
7. Smoking,(+) 1 PPD X 5-6 year, alcohol(-), coffee(-), betelnut(+) for 20 years

There was no relative family history obtained

**Gross findings:**

Lacrimal sac swelling

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### **CASE RESULT:**

#### **Histopathological finding:**

Right lacrimal sac, biopsy --- granulomatous inflammation

Microscopically, it shows numerous foamy macrophages with clear cytoplasm aggregation presenting CD68 (++) and S-100 (-) consistent with granulomatous inflammation. Acid fast stain shows numerous mycobacteria favor of Avian mycobacteria infection.

**Diagnosis:** Disseminated Mycobacterium avium complex infection

#### **Diagnostic criteria :**

1. Histopathology: granulomatous inflammation with numerous foamy macrophages
2. Acid fast stain: positive
3. Wound culture: Non-tuberculosis mycobacteria
4. PCR of Avian mycobacteria: positive (NTUH)

#### **Discussion:**

The Mycobacterium avium complex (MAC) includes *M. avium* and *M. intracellulare*. In the classification system made by Runyon in 1959, MAC belongs to "slowly growing nontuberculous mycobacteria". MAC is the most common nontuberculous species causing human disease in the USA. They have been found from water, soil, and wild animals. Unlike *M. tuberculosis*, there are no evidence to demonstrate human-to-human or animal-to-human transmission of MAC. On agar, MAC typically produces small, flat, translucent, smooth colonies that occasionally exhibit a pale yellow color. These colony morphologies differ from *M. tuberculosis*, which typically shows cording in broth and appears as rough, buff colored colonies on agar.

The pathogenesis of MAC infection is similar to *M. tuberculosis*. MAC organism enters body through air or food. When it arrives the target organ as gastrointestinal tract or lung, macrophage binds to MAC through fibronectin receptors, receptors for mannosyl and fucosyl moieties of the mycobacterial cell wall, and complement receptor 3. Therefore, serum enhances phagocytosis of mycobacteria through complement bound to the mycobacterial surface. Bound mycobacteria are taken up in primary phagosomes that fuse with vacuoles in the phagocyte's cytoplasm and attempt to destroy its contents through acidification, toxic oxygen metabolites, defensins, and possibly other

mechanisms. However, MAC releases mycobacterial products which induce apoptosis of macrophage. MAC also promote mycobacterium-stimulated peripheral blood monocytes to produce higher concentrations of interleukin 10 (IL-10), but lower concentrations of interferon (IFN- $\gamma$ , IL-12 and tumor necrosis factor alpha (TNF-alpha). By this way, activation of NK cell and Th1 response and other immune steps were suppressed.

In recent study, many patients, who get severe infections of MAC or Salmonella spp., were unable to produce or respond to IFN- $\gamma$  due to deleterious mutations in genes which encode major proteins in the type 1 cytokine (IL-12/IL-23/ IFN- $\gamma$ ) axis. With understanding the pathogenesis of MAC infection, we can realize why these patients are associated with disseminated MAC infection in the absence of HIV infection.

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**CASE HISTORY:**

**Signalment:** 19-year-old Chinchila male cat

**Clinical history:**

A formalin fixed skin tissue was submitted to the ATIT for pathology diagnosis (ATIT, S11-0597). The patient was a 19 year old, castrated male feline Chinchilla, found to have multiple nodular lesions on torso back skin at clinical examination on 6/27/2011. The dermal inflection had been noted in a year, and lesions involved approximately 8.0x2.0-4.0cm in area on the mid-trunk back skin with slight anterior to the right side scapular region. One of the nodules was ruptured and ulcerated. The skin lesion appeared to be indolent to the patient because no painful feeling was detected upon clinical examination. The skin lesion including two nodules (with the ulcerated one), was excised for pathology diagnosis.

The patient past history included frequent occurrences of urinary obstruction syndrome noted starting as young as 10 years old. The major associated cause was cystic calculi detected clinically with laboratory findings as well. The owner mentioned the patient with urinary inflection of bladder stone had been under the control pretty well with prescription diets for the past five years at least. Clinical history of this patient included a moderate renal failure in the past two months before the surgical incision of this skin lesions. The patient succumbed to death on 8/03/2011. No necropsy was performed, nor was any other tissue submitted.

**Clinical Pathology:**

Only blood chemistry analysis for renal function was performed

2011/04/20	75 mg/dl	3.7 mg/dl
2011/04/25	81 mg/dl	3.2 mg/dl
2011/06/27	85 mg/dl	3.9 mg/dl
2011/08/02	197 mg/dl	3.7 mg/dl

Skin Lesion Culture: Not available.

**Gross findings:**

The submitted formalin fixed specimen measured approximately 2.5x2.0x2.0cm in size, containing two obviously swelling and/or nodular, proliferated areas involving the dermis and subcutis. One nodule was ulcerated with a small opening.



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### **CASE RESULT:**

#### **Histopathological finding:**

Microscopically, a large, rather-circumscribed, elongated nodular mass of granulomatous inflammation was observed in the deeper dermis and subcutis. The granulomatous inflammation contained numerous varying in size, irregular in shape but more in round, and district, large, slightly eosinophilic, somewhat amorphous, radiating or grain-like aggregates, somewhat refractile or vesiculated bodies of fungal colonies intermixed in the necrotic tissue with numerous proliferation of macrophages and heavy infiltration of neutrophils. In higher magnification, the colonies were composed of numerous fungal hyphae showing frequently globular shapes. The macrophages also phagocytized fungal fragments, but pigments were not obvious. The peripheral tissue had some degree of focal chronic inflammatory cells and dermatitis of that lymphocytic, plasmacytic and some other type cells aggregated or infiltrated

in the perivascular areas, inter-collagen bundle spaces of the dermis. A small part of dermal tissue and dermis overlying was ruptured, and appeared as an outlet of the granuloma to the skin surface. Never the less, no obvious inflammatory reaction was observed along the ruptured edge and thus, this ruptured outlet was not diagnosed as a fistula formation.

The fungal colonies were further demonstrated well in PAS, and GMS, showing massive growth of short septate hyphae with bulging spherical spores. The fungal organism was compatible with *Microspore canis*, and the fungus-induced granulomatous lesion was thus diagnosed as dermatophyte pseudomycetoma.

**Diagnosis:** Dermatophyte pseudomycetoma

#### **Discussion:**

Dermatophytic pseudomycetoma is a deep dermal and subcutaneous infection in which granulomatous and pyogranulomatous reactions surround the dermatophyte hyphae.

Pseudomycetomas caused by dermatophytic fungi should be distinguished from eumycetomas, which are caused by true, dematiaceous or nonpigmented fungi (1). In this case, the disease was

caused by *M canis* of that the disease has been described in cats (2), humans (3), and horses (4) in early days and in dogs latterly (5, 6).

In animals, dermatophytic pseudomycetoma disease is caused by *M canis*, a zoophilic dermatophyte inducing superficial infection in cats and dogs mainly, and also in human inducing zoonosis problems (7, 8). This genus fungus with other two genera, *Trichophyton* and *Epidermophyton* cause superficial dermal infection generally confined to keratin layer of the skin, hair, and nails, and the infection is called dermatophytosis ('ring worm'). These fungi are also with characteristic and distinguishable as of anthrophilic, geophilic, or zoophilic depends on species. Cats are normal host of *M canis* (as a zoophilic species) and the infection is ordinarily found in the hair follicles in which the organism infects the hair shafts and causes a little problem of mild itching. But in some instance, under certain condition such as rupture of hair follicles, the organism invaded into the dermis and subcutis and thus induced a massive graunlomatous inflammation. The granulomatous inflammation is thus, called psuedomycetoma indicating an atypical infection of superficial dermatophyte to the dermis and subcutis. Therefore, this fungal infection induced a conventional dermatophytosis as well as dermatophytic pseudomycetoma in cats, especially in Persian breeding. This marked breed prediction suggests that a genetically preprogrammed, selective immunodeficiency may play a role in the development dermatophytic pseudomycetoma in this breed (7). Moreover, intra-abdominal dermatophytic pseudophycetoma in a Persian cat has been reported recently (9).

Our case was also a Persian Chinchila. No superficial dermal infection was noted in this case as no organism was detected in the hair follicle shafts microscoppically. And thus, a concurrent superficial dermatophyte infection was ruled out. The animal had dermal problem for a year, but trying for dermatophytosis diagnosis was not done in patient at the incipient of the dermal inflicion. We believed the complication in this case was probably feeble at such aging of 19 years old with renal malfunction, though exact mood of infection was not determined.

The diagnosis in this case was based on histopathologic characteristics of the granulomatous inflammatory lesion and the features of *M canis* fungal organism. Fungal culture was not performed. Report on specific diagnosis as to immunohistochemistry and agar gel immunodiffusion to demonstrate *M canis* has been attempted for a feasible confirmation of the diagnosis (6).

Dermatophytosis and dermatophytic pseudomycetoma in Persian cats have been reported in Taiwan (10, 11, 12). The present case was one of 3 cases observed in 2011 at the ATIT. The additional 2 cases (S11-0656 and S11-1121) were also of Persian bred and males (one the 7-yr-old intact male with the skin lesion observed at the right lateral lumber region, submitted in July; the other an 1-year old castrated male with lesion observed at the right outer ear pinna, submitted in October). The occurrence of this dermal problem appeared to be not uncommon in Taiwan, a developed country in subtropical. A further investigation is probably worthy to try (13).

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### **CASE HISTORY:**

**Signalment:** 7-month-old, finishing pig, LYD type, swine

#### **Clinical history:**

A farrow-to-finish pig farm, fifteen fattening pigs died from November 7<sup>th</sup> to November 14<sup>th</sup>, 2011. One or two fattening pigs died suddenly each day. One finishing pig, 7-month-old, LYD type was died and presented to our lab on November 14<sup>th</sup>, 2011. Extensive pink to dark purplish-red skin was found over the body's skin. The morbidity and mortality were about 17/7000% and 15/7000% respectively.

#### **Gross findings:**

At necropsy, a 7-month-old finishing pig, particularly the skin of the abdomen, bilateral ears, snout, throat, thighs and limbs was pink to dark purplish-red discoloration. Multiple petechial to ecchymotic haemorrhages scattered on the subcapsular parenchyma of the both kidneys and the cortex extensively. The spleen was congested and enlarged. There were some fibrin covered abdominal cavity and pleura. Few petechial haemorrhages were also noted on the heart. The tissue slide of this case was made from the skin and kidney of the finishing pig.

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### **CASE RESULT:**

#### **Histopathological finding:**

Skin: The capillaries and venules of dermal papillar and reticular layers were severely congested and contained fibrinous microthrombi with perivascular infiltration by lymphoid cells and fibroblasts.

Kidney: There were diffuse fibrinous microthrombi in the capillaries of glomeruli. Diffuse glomerular and interstitial haemorrhages and focal lymphocytic cells infiltration were found in the medulla. Diffuse homogenous renal tubular necrosis and thrombosis of renal interlobular veins and arteries were also noted.

#### **Laboratory results:**

Bacterial isolation: Bacterial colonies, *Erysipelothrix rhusiopathiae* were cultured from the heart, lung, liver, kidney, spleen, and skin by blood agar at 37°C after 24-48 hours incubation. The colonies were clear, circular and very small colonies, with a diameter of 0.1-1.5mm and α hemolysis.

#### **Differential diagnosis:**

1. Hog cholera (HC; or Classical swine fever), African swine fever (ASF), PCV2 (PDNS type)
2. Septicemic Salmonellosis
3. *Streptococcus* infection
4. *Actinobacillus pleuropneumonia* (AP)
5. *Actinobacillus suis*
6. Human Erysipelas (*Streptococcus* infection) and *Staphylococcus* infection.

**Diagnosis:** Swine Erysipelas (caused by *Erysipelothrix rhusiopathiae*) in finishing pigs.

#### **Discussion:**

Swine Erysipelas (SE) is caused by *Erysipelothrix rhusiopathiae*, a facultative, non-spore forming, non-acid-fast, small, slender, Gram-positive bacillus that represent a new class, *Erysipelotrichia*, in the phylum *Firmicutes*. *Erysipelothrix rhusiopathiae* is ubiquitous in nature and affect a wide variety of vertebrate and invertebrate species. Human disease can originate from an animal or environmental source. It is a primary pathogen of swine and turkeys as well as a sporadic cause of disease in humans and other species. *Erysipelothrix* spp. has been isolated from domestic, and wild species of both mammals and birds as well as reptiles, amphibian, and the surface slime of fish and have been identified as the causative agent of the clinical disease known as “erysipelas” in animals and “erysipeloid” in human. Current taxonomy recognizes the genus *Erysipelothrix* with two species, each with differentiable serotypes: *E. rhusiopathiae* (serotype 1a, 1b, 2, 4, 5, 6, 8, 9, 11, 12, 15, 16, 17, 19, 21, N) and *E. tonsillarum* (serotype 3, 7, 10, 14, 20, 22, 23), Two proposed *Erysipelothrix* spp. consisting of *Erysipelothrix* strain 1 (serotype 13), and *Erysipelothrix* spp. strain 2

(serotype 18) have been described. In addition, another proposed species, *Erysipelothrix inopinata*, has also recently been described. Acute septicemia in US swine is typically associated with serotype 1a. Subacute and chronic cases are typically associated with serotype 2; however, all clinical forms of erysipelas can be induced experimentally in susceptible pigs with serotype 1a or 2. Other serotypes have less clinical significance in pigs. Recently investigations have focused on the surface protective antigen (spa) of *Erysipelothrix* spp. as a highly immunogenic and protective antigen. To date, 4 different spa types have been described and identified in reference strains banked several decades ago, which include spaA, spaB1, spaB2, and spaC. The disease is worldwide in distribution and of economic importance throughout Europe, Asia, and the Australian and American continents. Swine erysipelas occur in pigs of all ages, but the most susceptible are those from 3 months to 3 years of age, and the pregnant sows. The sows may abort or give birth to stillborn young, from which the organisms can be cultured. The most important reservoir of *E. rhusiopathiae* is the domestic pig. Carrier can discharge the organism in their feces or oronasal secretion, and swine affected with acute erysipelas shed profusely in feces, urine, saliva, and nasal secretions. The large variety of wild mammals and birds known to harbor *E. rhusiopathiae* provides an extensive reservoir. Various species of domestic animals from which the organism has been isolated provide an additional potential reservoir. The agent can be found in soil. The organism can gain entry to the body by a variety of routes. Infection through ingestion of contaminated feed or water is considered a common mode. The organism can readily gain access to the body through the palatine tonsils or other lymphoid tissue but entrance is probably not limited to these areas. Natural infection can result from infected skin wound or bites of infected flies. Swine Erysipelas is seen in three forms: 1) the acute form, which may induce substantial morbidity and mortality within days, is characterized by sudden illness and /or death often associated with rhomboid or diamond-skin lesions; 2) the subacute form, which is similar to the acute form but is typically less severe and commonly remains undetected and 3) the chronic form, which may result in the development of arthritis and endocarditis. Differential diagnosis of swine erysipelas includes Hog cholera (HC; or Classical swine fever), African swine fever (ASF), PCV2 (PDNS type), Septicemic Salmonellosis, *Streptococcus* infection, *Actinobacillus pleuropneumonia* (AP), and *Actinobacillus suis*, all these swine diseases might also have large areas of pink to purplish-red skin lesions. This case is acute form of swine erysipelas. The gross and histopathology were similar to those previously report. Finishing pigs died suddenly with extensive pink to dark purplish-red skin was found over the belly, ears, tail, snout, throat, thighs and limbs. The gross pathology reveals multiple petechial to ecchymotic haemorrhages scattered on the subcapsular parenchyma of the both kidneys and the cortex extensively. The spleen and liver were congested and enlarged. The histopathology confirmed the presence of DIC, septic fibrinous thrombi, vasculitis, along with some leucocytic infiltration and marked fibrinoid necrosis of the vessel walls, intramural haemorrhages, and perivascular fibrin extravasation and hemorrhages. Also, we found another acute form case of SE with typical rhomboid or diamond-skin lesions and chronic form case with recumbency and arthritis in grower-finishing pigs. During Oct to December, 2011, all these different forms of SE cases, which did not use vaccine of SE occurred in Pingtung county. Control of the SE by sound husbandry, herd management, good sanitation, antibiotic therapy (e.g. Penicillin, Ampicillin and Amoxicillin) and immunization procedures is recommended. Diagnosis is based on clinical signs, bacterial culture and identification, pathology, serological test, IHC, serological tests, PCR and other molecular typing methods.

*E. rhusiopathiae* infection in humans is occupationally related. It occurs mostly in those people whose jobs are closely related with contaminated animals, their products or wastes, or soil. The people with the highest risk of exposure include butchers, abattoir workers, veterinarian, farmers, fishermen, fish-handlers and housewives. The infection has been also associated with a wide variety

of occupations, including meat cutters, meat-processing worker, poultry-processing workers, meat inspectors, rendering-plant worker, knacker, animal caretakers, bone button makers, game handlers, furriers, leather worker, soap makers, fertiliser workers, sew workers, bacteriology laboratory workers and stockyard workers. The common names for human infection reflect this occupational mode of acquisition. These include whale finger, seal finger, speck finger, blubber finger, fish poisoning, fish handler's disease, and pork finger. Infection is initiated either by an injury to the skin with infective material or when a previous injury is contaminated. Most cases in human and other animals may occur via scratches or puncture wounds of the skin. Clinical manifestations seen in humans closely resemble those seen in swine: a localized cutaneous form, erysipeloid; a generalized cutaneous form and a septicaemic form which is often associated with endocarditis. Erysipeloid is the most common form of human infection. It is an acute localized cutaneous infection usually occurring on the hand or fingers, described as local cellulites. The pain is often severe and may be described as a burning, throbbing, or itching sensation. Systemic symptoms can occur in some cases: fever, joint aches, lymphadenitis and lymphadenopathy. Arthritis of an adjacent joint may be seen. The absence of suppuration, lack of pitting edema, and disproportionate pain help to distinguish erysipeloid from staphylococcal or streptococcal infection (erysipelas in human). The disease is self-limiting and usually resolves in 3-4 weeks without therapy.

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### **CASE HISTORY:**

**Signalment:** A 5-year-old, intact male Maltese

### **Clinical history:**

A 5-year-old, intact male Maltese initially presented with a one-month history of hypopigmentation and hyperplasia of the right alae of the nose and therefore was admitted to a local animal hospital in January 2009. The biopsy sample of the right nasal alae was submitted for pathologic examination and the diagnosis was made of *Prototheca* infection. After a long period of clinical therapy, the patient expired in December 2012 and necropsy was performed on December 17<sup>th</sup>.

### **Gross findings:**

At necropsy, severe dermatitis as indicated by alopecia, swelling and erythematous plaques was discerned with the accompaniment of mucous exudates and multifocal ulcers measuring approximately 1 x 1 cm. The skin lesions were predominantly distributed around the muzzle, gluteal region and extremities. There was significant systemic lymphadenopathy. The cut surface of some enlarged lymph nodes showed large, irregular, yellowish caseous areas.



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### **CASE RESULT:**

#### **Histopathological finding:**

In the skin of the proximal pelvic limb, there were extensive areas of inflammatory infiltration composed of a great number of macrophages and neutrophils, extending from the superficial surface to the deep muscle bundles and bone. Myriads of faintly stained, ovoid to spherical organisms with a prominent hyaline cell wall were frequently recognized in inflammatory regions either extracellularly or within the cytoplasm of macrophages and multinucleate giant cells. These organisms stained positively with periodic acid-Schiff stain and sporangia containing multiple endospores, ranging from 2 to 4 in number, could be readily observed. Similar pyogranulomatous inflammatory lesions were present in the extremities with involvement of phalanges, the nasal alae with concurrent chondrolysis of the nasal concha, and the peripheral and mesenteric lymph nodes with large areas of necrosis.

#### **Laboratory examination:**

A small piece of patient's skin with lesions was incised and suspended in sterile water. Microscopic examination of the suspension fluid revealed that several sporangia with endospores, resembling *Prototheca* spp., were observed. A small amount of suspension fluid was cultured aerobically on Sabouraud dextrose agar (SDA) containing chloramphenicol and incubated at constant temperature of 30°C for 3 days. Morphologic assessment of the growth of yeast-like colonies carried out in wet slide preparations demonstrated organism morphology consistent with *Prototheca* species. Genomic DNAs were extracted by the fast preparation of fungal DNA (FPFD) method for PCR amplification of highly conserved 18s rDNA gene of *Prototheca* spp. Phylogenetic and sequence analyses of the PCR products were performed in comparison with available reference sequences (GenBank) of *Prototheca* species. The results indicated that the investigated isolates of the current case had the most significant sequence similarity and identity (97% and 96%, respectively) to *Prototheca wickerhamii*.

#### **Differential diagnosis:**

1. *Chlorella* spp.
2. *Coccidioides immitis*
3. *Rhinosporidium seeberi*

4. *Blastomyces* spp.
5. *Cryptococcus* spp.
6. *Candida* spp.
7. *Histoplasma capsulatum*
8. *Geotrichum candidum*

**Diagnosis:** Canine cutaneous protothecosis with lymph nodes involvement consistent with *Prototheca wickerhamii* infection

**Discussion:**

*Prototheca* species, unicellular achlorophyllic aerobic algae closely related to the green algae of the genus *Chlorella*, have a worldwide distribution and are found in abundance in the environment. They are globose to oval, ranging from 1.3 to 13.4 in diameter, with a life cycle of asexual reproduction producing sporangia that divide by irregular cleavage to form 2 to 20 endospores. Of the currently recognized or proposed species, only *P. wickerhamii* and *P. zopfii* have been incriminated as pathogens for humans and animals.

Although *Prototheca* species are ubiquitous in the environment, infections in animals are uncommon and cases in dogs, cats and cattle are the most frequently reported. In cattle, *Prototheca* spp. can produce severe mastitis and enteritis by mainly *P. zopfii*, which results in considerable economic losses. In dogs and cats, protothecosis is primarily caused by *P. zopfii* that contributes to systemic or cutaneous infections, while infection with *P. wickerhamii* can also occur. A review of the literature described that there are certain predilections of canine protothecosis for young-adult, medium- to large-breed, females and Boxer dogs with a geographic distribution of overrepresented cases from Australia and North America.

Little is known about the pathogenesis of *Prototheca* infections. It is suggested that the organisms, usually great quantities of infectious propagules required, invade humans and cats via traumatic wounds in the skin and mucous membranes and in dogs via ingestion, where organisms colonize in the gastrointestinal tract and eventually disseminate through lymphatic or hematogenous routes, respectively.

Four major clinical subtypes of canine protothecosis have been recognized, including cutaneous, enteric, ocular and systemic types that share a common clinical symptom of prolonged bloody diarrhea. Cutaneous form is characterized by granulomatous dermatitis that is confined to focal regions but may progress to diffuse involvement with muscular and bone invasion. Clinical findings are composed of skin nodules, draining ulcers, and crusty exudates of the extremities, trunk and mucosal surfaces. Enteric form demonstrates a similar granulomatous inflammation accompanied by hemorrhages in the gastrointestinal tract, most frequently the colon, and consequently patients present with chronic episodes of bloody diarrhea. It is supposed that the

gastrointestinal tract is the initial site of infection prior to the subsequent generalized dissemination. Ocular form is present in 77% of cases of systemic protothecosis, with clinical features consisting of acute blindness only or in combination with chronic granulomatous chorioretinitis, severe retinal degeneration, or exudative retinal detachment. Systemic protothecosis is subsequent to hematogenous and/or lymphatic dissemination with multiple organs affected, including the myocardium, central nervous system, eyes, kidneys, liver, lymph nodes, thyroid gland, pancreas, peritoneum and diaphragm once reported. The clinical presentations that develop as the disease progress depend on the affected organs but most often are ocular and/or neurologic in nature. Grossly, multiple whitish, 1 to 3 mm nodules are scattered throughout the surface of viscera. The histopathologic findings are similar to those previously mentioned.

In humans, protothecosis has been classified in three clinical forms as follows: cutaneous infections, olecranon bursitis, and disseminated infections; most of the cases have been attributed to *P. wickerhamii* infection. The cutaneous type and olecranon bursitis are usually presented with a chronic course. Infections can occur in both immunocompetent and immunosuppressed patients while more severe and disseminated infections have a tendency to affect immunocompromised individuals. In the publications, infections of some uncommon sites such as urinary tract, respiratory tract, vagina, and intestines have been documented as well.

Clinical manifestations of acute blindness concomitant with hemorrhagic enteritis in a dog should arouse suspicion of protothecosis as the top of the differential diagnosis. The definitive diagnosis of canine protothecosis can be achieved by culture, positive identification of typical *Prototheca* cells in specimens of cerebrospinal fluid, vitreous humour and urine sediment, histopathology evidenced by granulomatous inflammation and intralésional organisms with morphology consistent with *Prototheca* spp. with special staining of GMS and PAS, and by recently developed molecular techniques such as PCR. Optimal therapy for protothecosis has not been established yet. Administration of antifungal drugs with reported efficacy, including amphotericin B, itraconazole and fluconazole, produces a moderate to good curative effect for only cutaneous protothecal infection in dogs and cats. Amphotericin B displays the best activity against *Prototheca* spp. infections in humans. Nevertheless, failure treatment is not uncommon and successful treatment regimens for disseminated protothecosis in both humans and animals have not been determined.

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# 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、 其他有關比較病理學術發展之事項。
- 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，即成爲一般會員，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，每一會員爲一權。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，即爲出會。
- 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 本會以會員大會爲最高權力機構。
- 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記後，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。應於七日以前以書面通知，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：一般會員新台幣五百元，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六屆理監事名單簡歷冊

職別	姓名	性別	出生年月日	學歷	經歷	現任本職	電話	傳真
理事長	施洽雯	男	46/08/30	國防醫學院病理研究所	中山醫學院病理科副教授	羅東博愛醫院病理科主任	039-543131-2716	039-551543
常務理事	呂福江	男	37/11/21	美國漢尼門大學病理學博士	國防醫學院病理學研究所所長	耕莘醫院病理部主任	02-22193391 ext65236 0968-666741	02-2193506
常務理事	許永祥	男	48/10/30	國立台大醫學院病理研究所碩士	台大醫院病理科住院醫師	慈濟醫院病理科主任	03-8565301-2197	03-8574265
常務理事	張俊梁	男	45/5/6	國防醫學院醫學科學研究所博士	國防醫學院兼任助理教授	國軍桃園總醫院病理檢驗部主任	02-2303-2209 03-4799595 0966008531	02-2303-5192
常務理事	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	中興大學獸醫病理學研究所教授	04-22840894 ext406	04-22862073
理事	劉振軒	男	42/10/9	美國加州大學戴維斯校區比較病理學博士	台灣養豬科學研究所主任	國立台灣大學獸醫專業學院院長	02-33663760	02-23633289
理事	祝志平	男	46/02/25	台大病理研究所碩士	台北醫學院講師	林新醫院病理科主任	039-544106ext6113 0913-379889	039-572916
理事	李進成	男	49/06/06	英國倫敦大學神經病理博士	長庚醫院內科醫師	新光吳火獅紀念醫院病理檢驗科醫師	02-28389306	02-28389306
理事	陳三多	男	40/08/11	比利時魯汶大學博士	中興大學獸醫系教授	中興大學獸醫病理研究所教授	04-22853552	04-22853552
理事	張文發	男				國立中興大學獸醫學院 動物疾病診斷中心副主任		
理事	張聰洲	男	41/11/29	國立中興大學獸研所碩士班	國立屏東技術學院助教	國立屏東科技大學副教授	06-2333529	08-7740295
理事	賴銘淙	男	47/10/14	清華大學生命科學院博士	華濟醫院病理科主任	彰濱秀傳紀念醫院病理科主任	04-3250487	
理事	蔡睦宗	男	49/10/25	國立台灣大學獸醫學系公共衛生組碩士	台灣養豬科學研究所比較醫學系約聘技術員	屏東縣家畜疾病防治所技士	08-7224109	08-7224432
理事	陳憲全	男	25/5/18	日本麻布大學獸醫學研究科博士	US Veterinary Medical Officer, USDA/AFIS Philadelphia District Guloff Station, Elisabethtown, PA, USA	玉樹生技病理顧問有限公司首席獸醫病理學家/台灣動物科技研究所顧問	02-27832557 037-585875	037-585850
理事	朱旒億	男		國立台灣大學醫學系		彰化基督教醫院病理科	05-5512383	
常務監事	江蓉華	男		國防醫學院醫學士	國軍花蓮總醫院病理部主任	耕莘醫院組織病理科主任		
監事	林永和	男	46/02/24	台大病理研究所	台北醫學院病理科講師	台北醫學院病理科講師	02-27361661ext641	02-23770054
監事	梁鍾鼎	男	51/01/25	台灣大學獸醫學研究所博士班	國家實驗動物中心副研究員	國家實驗動物中心首席獸醫師	02-2789-5569	02-27895588
監事	阮正雄	男	30/05/28	日本國立岡山大學 大學院 醫齒藥總合研究科 博士	1. 台北市立婦幼綜合醫院病理科主任及婦產科主治醫師 2. 台北醫學大學副教授兼細胞學中心主任 3. 高雄市防癌篩檢中心細胞學主任	童綜合醫院婦產科及病理科主治醫師	0939-665921 02-2362-2656	02-23622656  04-26581919 轉4320 (辦公室)

## How-To Access Comparative Pathology Virtual Slides

Hosted at the Web Library in NTU Vet Med Digital Pathology Lab

(中華民國比較病理學會數位式組織切片影像資料庫)

Comparative Pathology glass slides are now digitalized and accessible to all participants through the internet and a web browser (see below for detail instruction).

1. Please make sure that your web browser (e.g. Internet Explorer, Firefox or Safari) is equipped with "flash player." If not, it can be added from <http://www.adobe.com/products/flashplayer/> for free.
2. Please go to the NTU Vet Med Digital Pathology Lab web site at <http://140.112.96.83:82/CSCP/> with your web browser.
3. A pop-up window appears to ask for "User name" and "Password." Enter "guest " for both boxes.
4. Choose a Comparative Pathology meeting (e.g. 52<sup>nd</sup> CSCP)
5. Pick any case you'd like to read (e.g. case365-372)

**中華民國比較病理學會  
第一次至第五十三次比較病理學研討會病例分類一覽表**

分類	病例編號	診 斷	動物別	提 供 單 位
腫 瘤	1.	Myxoma	Dog	美國紐約動物醫學中心
	2.	Chordoma	Ferret	美國紐約動物醫學中心
	3.	Ependymoblastoma	Human	長庚紀念醫院
	8.	Synovial sarcoma	Pigeon	美國紐約動物醫學中心
	18.	Malignant lymphoma	Human	長庚紀念醫院
	19.	Malignant lymphoma	Wistar rat	國家實驗動物繁殖及研究中心
	24.	Metastatic thyroid carcinoma	Human	省立新竹醫院
	25.	Chordoma	Human	新光吳火獅紀念醫院
	34.	Interstitial cell tumor	Dog	中興大學獸醫學系
	35.	Carcinoid tumor	Human	長庚紀念醫院
	36.	Hepatic carcinoid	Siamese cat	美國紐約動物醫學中心
	38.	Pheochromocytoma	Ferret	美國紐約動物醫學中心
	39.	Extra adrenal pheochromocytoma	Human	新光吳火獅紀念醫院
	40.	Mammary gland fibroadenoma	Rat	國家實驗動物繁殖及研究中心
	41.	Fibroadenoma	Human	省立豐原醫院
	42.	Canine benign mixed type mammary gland tumor	Pointer bitch	中興大學獸醫學系
	43.	Phyllodes tumor	Human	台中榮民總醫院
	44.	Canine oral papilloma	Dog	台灣大學獸醫學系
	45.	Squamous cell papilloma	Human	中國醫藥學院
47.	Lung: metastatic carcinoma associated with cryptococcal infection. Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院	
56.	Gastrointestinal stromal tumor	Human	台中榮民總醫院	
59.	Colonic adenocarcinoma	Dog	美國紐約動物醫學中心	

62.	Submucosal leiomyoma of stomach	Human	頭份為恭紀念醫院
64.	1.Adenocarcinoma of sigmoid colon 2.Old schistosomiasis of rectum	Human	省立新竹醫院
71.	Myelolipoma	Human	台北耕莘醫院
72.	Reticulum cell sarcoma	Mouse	國家實驗動物繁殖及研究中心
73.	Hepatocellular carcinoma	Human	新光吳火獅紀念醫院
74.	Hepatocellular carcinoma induced by aflatoxin B1	Wistar strain rats	台灣省農業藥物毒物試驗所
81.	Angiomyolipoma	Human	羅東博愛醫院
82.	Inverted papilloma of prostatic urethra	Human	省立新竹醫院
84.	Nephrogenic adenoma	Human	國泰醫院
86.	Multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院
87.	Squamous cell carcinoma of renal pelvis and calyces with extension to the ureter	Human	台北病理中心
88.	Fibroepithelial polyp of the ureter	Human	台北耕莘醫院
90.	Clear cell sarcoma of kidney	Human	台北醫學院
93.	Mammary gland adenocarcinoma, complex type , with chondromucinous differentiation	Dog	台灣大學獸醫學系
94.	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, papillary carcinoma, metastatic	Human	羅東聖母醫院
95.	Transmissible venereal tumor	Dog	中興大學獸醫學系
96.	Malignant lymphoma, large cell type, diffuse, B-cell phenotype	Human	彰化基督教醫院
97.	Carcinosarcomas	Tiger	台灣養豬科學研究所
98.	Mucinous carcinoma with intraductal carcinoma	Human	省立豐原醫院
99.	Mammary gland adenocarcinoma, type B, with pulmonary metastasis,	Mouse	國家實驗動物繁殖及研究中心

	BALB/cBYJ mouse		
100.	Malignant fibrous histiocytoma and paraffinoma	Human	中國醫藥學院
102.	Pleomorphic adenoma (benign mixed tumor)	Human	佛教慈濟綜合醫院
103.	Atypical central neurocytoma	Human	新光吳火獅紀念醫院
104.	Cardiac schwannoma	SD rat	國家實驗動物繁殖及研究中心
109.	Desmoplastic infantile ganglioglioma	Human	高雄醫學院
107.	1.Primary cerebral malignant lymphoma 2.Acquired immune deficiency syndrome	Human	台北市立仁愛醫院
111.	Schwannoma	Human	三軍總醫院
114.	Osteosarcoma	Dog	美國紐約動物醫學中心
115.	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.	Krukenberg's Tumor	Human	台北病理中心
117.	Primary insular carcinoid tumor arising from cystic teratoma of ovary.	Human	花蓮慈濟綜合醫院
119.	Polypoid adenomyoma	Human	大甲李綜合醫院
120.	Gonadal stromal tumor	Human	耕莘醫院
122.	Gestational choriocarcinoma	Human	彰化基督教醫院
123.	Ovarian granulosa cell tumor	Horse	中興大學獸醫學系
129.	Kaposi's sarcoma	Human	華濟醫院
131.	Basal cell carcinoma (BCC)	Human	羅東聖母醫院
132.	Transmissible venereal tumor	Dog	臺灣大學獸醫學系
137	Canine Glioblastoma Multiforme in Cerebellopontine Angle	Dog	中興大學獸醫病理研究所
143	Osteosarcoma associated with metallic implants	Dog	紐約動物醫學中心
144	Radiation-induced osteogenic sarcoma	Human	花蓮慈濟綜合醫院
145	Osteosarcoma, osteogenic	Dog	臺灣大學獸醫學系
146	Pleomorphic rhabdomyosarcoma	Human	行政院衛生署新竹醫院
147	Papillary Mesothelioma of pericardium	Leopard	屏東科大學獸醫學系

148	Cystic ameloblastoma	Human	台北醫學院
149	Giant cell tumor of bone	Canine	中興大學獸醫學院
150	Desmoplastic small round cell tumor (DSRCT)	Human	華濟醫院
152	Hepatocellular carcinoma	Human	羅東聖母醫院
158	Hemangiopericytoma	Human	羅東聖母醫院
160	Cardiac fibroma	Human	高雄醫學大學病理學科
166	Nephroblastoma	Rabbit	紐約動物醫學中心
168	Nephroblastoma	Pig	台灣動物科技研究所
169	Nephroblastoma with rhabdomyoblastic differentiation	Human	高雄醫學大學病理科
172	Spindle cell sarcoma	Human	羅東聖母醫院
174	Juxtaglomerular cell tumor	Human	新光醫院病理檢驗科
190	Angiosarcoma	Human	高雄醫學大學病理學科
192	Cardiac myxoma	Human	彰化基督教醫院病理科
194	Kasabach-Merrit syndrome	Human	慈濟醫院病理科
195	Metastatic hepatocellular carcinoma, right atrium	Human	新光醫院病理科
197	Papillary fibroelastoma of aortic valve	Human	新光醫院病理科
198	Extraplacental chorioangioma	Human	耕莘醫院病理科
208	Granulocytic sarcoma (Chloroma) of uterine cervix	Human	高雄醫學大學病理學科
210	Primary non-Hodgkin's lymphoma of bone, diffuse large B cell, right humerus	Lymphoma	彰化基督教醫院病理科
213	Lymphoma, multi-centric type	Dog	中興大學獸醫系
214	CD30 (Ki-1)-positive anaplastic large cell lymphoma (ALCL)	Human	新光醫院病理科
215	Lymphoma, mixed type	Koala	台灣大學獸醫學系
217	Mucosal associated lymphoid tissue (MALT) lymphoma, small intestine	Cat	臺灣大學獸醫學研究所
218	Nasal type NK/T cell lymphoma	Human	高雄醫學大學病理科
222	Acquired immunodeficiency syndrome (AIDS)with disseminated Kaposi's sarcoma	Human	慈濟醫院病理科
224	Epithelioid sarcoma	Human	彰化基督教醫院病理科

226	Cutaneous B cell lymphoma , eyelid , bilateral	Human	羅東聖母醫院病理科
227	Extramammary Paget's disease (EMPD) of the scrotum	Human	萬芳北醫皮膚科,病理科
228	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	Malignant melanoma, metastasis to intra-abdominal cavity	Human	財團法人天主教耕莘醫院病理科
232	Vaccine-associated rhabdomyosarcoma	Cat	台灣大學獸醫學系
233	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	1. Neurofibromatosis, type I 2. Malignant peripheral nerve sheath tumor (MPNST)	Human	花蓮慈濟醫院病理科
239	Glioblastoma multiforme	Human	羅東聖母醫院
240	Pineoblastoma	Wistar rat	綠色四季
241	Chordoid meningioma	Human	高醫病理科
243	Infiltrating lobular carcinoma of left breast with meningeal carcinomatosis and brain metastasis	Human	花蓮慈濟醫院病理科
245	Microcystic Meningioma.	Human	耕莘醫院病理科
247	Well-differentiated fetal adenocarcinoma without lymph node metastasis	Human	新光吳火獅紀念醫院
249	Adenocarcinoma of lung.	Human	羅東聖母醫院
252	Renal cell carcinoma	Canine	國立台灣大學獸醫學系獸醫學研究所
253	Clear cell variant of squamous cell carcinoma, lung	Human	高雄醫學大學附設中和醫院病理科
256	Metastatic adrenal cortical carcinoma	Human	耕莘醫院病理科
258	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	Medullar thyroid carcinoma	Canine	臺灣大學獸醫學系



264	Merkel cell carcinoma	Human	羅東博愛醫院
266	Cholangiocarcinoma	Human	耕莘醫院病理科
268	Sarcomatoid carcinoma of renal pelvis	Human	花蓮慈濟醫院病理科
269	Mammary Carcinoma	Canine	中興大學獸醫學系
270	Metastatic prostatic adenocarcinoma	Human	耕莘醫院病理科
271	Malignant canine peripheral nerve sheath tumors	Canine	臺灣大學獸醫學系
272	Sarcomatoid carcinoma, lung	Human	羅東聖母醫院
273	Vertebra, T12, laminectomy, metastatic adenoid cystic carcinoma	Human	彰化基督教醫院
274	rhabdomyosarcoma	Canine	臺灣大學獸醫學系
275	Fetal rhabdomyosarcoma	SD Rat	中興大學獸醫學系
276	Adenocarcinoma, metastatic, iris, eye	Human	高雄醫學大學
277	Axillary lymph node metastasis from an occult breast cancer	Human	羅東博愛醫院
278	Hepatocellular carcinoma	Human	國軍桃園總醫院
279	Feline diffuse iris melanoma	Feline	中興大學獸醫學系
280	Metastatic malignant melanoma in the brain and inguinal lymph node	Human	花蓮慈濟醫院病理科
281	Tonsil Angiosarcoma	Human	羅東博愛醫院
282	Malignant mixed mullerian tumor	Human	耕莘醫院病理科
283	Renal cell tumor	Rat	中興大學獸醫學系
284	Multiple Myeloma	Human	花蓮慈濟醫院病理科
285	Myopericytoma	Human	新光吳火獅紀念醫院
287	Extramedullary plasmacytoma with amyloidosis	Canine	臺灣大學獸醫學系
288	Metastatic follicular carcinoma	Human	羅東聖母醫院病理科
289	Primitive neuroectodermal tumor (PNET), T-spine.	Human	羅東博愛醫院病理科
292	Hemangioendothelioma of bone	Human	花蓮慈濟醫院病理科
293	Malignant tumor with perivascular epithelioid differentiation, favored malignant PEComa	Human	彰化基督教醫院
297	Mucin-producing cholangiocarcinoma	Human	基隆長庚醫院
300	Cutaneous epitheliotropic lymphoma	Canine	臺灣大學獸醫專業學院
301	Cholangiocarcinoma	Felis Lynx	臺灣大學獸醫專業學院
302	Lymphoma	Canine	臺灣大學獸醫專業學院

303	Solitary fibrous tumor	Human	彰化基督教醫院
304	Multiple sarcoma	Canine	臺灣大學獸醫專業學院
306	Malignant solitary fibrous tumor of pleura	Human	佛教慈濟綜合醫院暨慈濟大學
307	Ectopic thymic carcinoma	Human	彰濱秀傳紀念醫院病理科
308	Medullary carcinoma of the right lobe of thyroid	Human	彰化基督教醫院病理科
309	Thyroid carcinosarcoma with cartilage and osteoid formation	Canine	臺灣大學獸醫專業學院
312	Lymphocytic leukemia/lymphoma	Koala	臺灣大學獸醫專業學院
313	Neuroendocrine carcinoma of liver	Human	佛教慈濟綜合醫院暨慈濟大學
314	Parachordoma	Human	羅東博愛醫院病理科
315	Carcinoma expleomorphic adenoma, submandibular gland	Human	天主教耕莘醫院病理科
316	Melanoma, tongue	Canine	國立臺灣大學獸醫專業學院
317	Renal cell carcinoma, papillary type	Canine	國立臺灣大學獸醫專業學院
323	Metastatic papillary serous cystadenocarcinoma, abdomen	Human	國軍桃園總醫院
324	Malignant gastrointestinal stromal tumor	Human	天主教耕莘醫院
329	Sclerosing stromal tumor	Human	彰化基督教醫院
330	Pheochromocytoma	Human	天主教耕莘醫院
334	Metastatic infiltrating ductal carcinoma, liver	Human	佛教慈濟綜合醫院
335	Adenoid cystic carcinoma, grade II, Rt breast	Human	天主教耕莘醫院
336	Malignant lymphoma, diffuse, large B-cell, right neck	Human	林新醫院
337	Pulmonary carcinoma, multicentric	Dog	國立臺灣大學獸醫專業學院
338	Malignant melanoma, multiple organs metastasis	Rabbit	國立中興大學獸醫學院
340	Mucinous-producing urothelial-type adenocarcinoma of prostate	Human	天主教耕莘醫院
342	Plexiform fibromyxoma	Human	彰化基督教醫院

	343	Malignant epithelioid trophoblastic tumor	Human	佛教慈濟綜合醫院
	344	Epithelioid sarcoma	Human	林新醫院
	346	Transmissible venereal tumor	Dog	國立臺灣大學獸醫專業學院
	347	Ewing's sarcoma (PNET/ES tumor)	Human	天主教耕莘醫院病理科
	348	Malignant peripheral nerve sheath tumor, epithelioid type	Human	林新醫院病理科
	349	Low grade fibromyxoid sarcoma	Human	高醫大附設中和紀念醫院病理科
	351	Orbital embryonal rhabdomyosarcoma	Dog	Gifu University, Japan (岐阜大学)
	354	Granular cell tumor	Dog	國立臺灣大學獸醫專業學院
	356	Malignant neoplasm of unknown origin, cerebrum	Dog	國立臺灣大學獸醫專業學院
	357	Small cell Carcinoma, Urinary bladder	Human	天主教耕莘醫院
	364	Perivascular epithelioid cell tumor, in favor of lymphangiomyomatosis	Human	高醫大附設中和紀念醫院病理科
	365	Angiosarcoma, skin (mastectomy)	Human	天主教耕莘醫院病理科
	366	Rhabdomyoma (Purkinjeoma), heart	Swine	屏東縣家畜疾病防治所
	368	Langerhans cell sarcoma, lung	Human	高醫大附設中和紀念醫院病理科
	369	Biliary cystadenocarcinoma, liver	Camel	國立屏東科技大學獸醫教學醫院病理科
	371	Malignant melanoma, nasal cavity	Human	羅東博愛醫院病理科
	373	Malignant giant cell tumor of tendon sheath	Human	天主教耕莘醫院病理科
	376	Malignant mesothelioma of tunica vaginalis	Golden hamster	中興大學獸醫病理生物學研究所
	377	Perivascular Epithelioid Cell Tumor (PEComa) of the uterus	Human	彰化基督教醫院病理部
	378	Medullary carcinoma	Human	高雄醫學大學病理部
細菌	6.	Tuberculosis	Monkey	臺灣大學獸醫學系
	7.	Tuberculosis	Human	省立新竹醫院
	12.	H. pylori-induced gastritis	Human	台北病理中心
	13.	Pseudomembranous colitis	Human	省立新竹醫院

26.	Swine salmonellosis	Pig	中興大學獸醫學系
27.	Vegetative valvular endocarditis	Pig	台灣養豬科學研究所
28.	Nocardiosis	Human	台灣省立新竹醫院
29.	Nocardiosis	Largemouth bass	屏東縣家畜疾病防治所
32.	Actinomycosis	Human	台灣省立豐原醫院
33.	Tuberculosis	Human	苗栗頭份為恭紀念醫院
53.	Intracavitary aspergilloma and cavitory tuberculosis, lung.	Human	羅東聖母醫院
54.	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.	Tuberculous enteritis with perforation	Human	佛教慈濟綜合醫院
61.	Spirochetosis	Goose	國立嘉義農專獸醫科
63.	Proliferative enteritis ( <i>Lawsonia intracellularis</i> infection)	Porcine	屏東縣家畜疾病防治所
68.	Liver abscess ( <i>Klebsillae pneumoniae</i> )	Human	台北醫學院
77.	1. Xanthogranulomatous inflammation with nephrolithiasis, kidney, right. 2. Ureteral stone, right.	Human	羅東聖母醫院
79.	Emphysematous pyelonephritis	Human	彰化基督教醫院
89.	1. Severe visceral gout due to kidney damaged 2. Infectious serositis	Goose	中興大學獸醫學系
108.	Listeric encephalitis	Lamb	屏東縣家畜疾病防治所
113.	Tuberculous meningitis	Human	羅東聖母醫院
134.	Swine salmonellosis with meningitis	Swine	中興大學獸醫學系
135.	Meningoencephalitis, fibrinopurulent and lymphocytic, diffuse, subacute, moderate, cerebrum, cerebellum and brain stem, caused by <i>Streptococcus</i> spp. infection	Swine	國家實驗動物繁殖及研究中心
140	Coliform septicemia of newborn calf	Calf	屏東縣家畜疾病防治所
161	Porcine polyserositis and arthritis	Pig	中興大學獸醫學院

	( Glasser's disease )		
162	Mycotic aneurysm of jejunal artery secondary to infective endocarditis	Human	慈濟醫院病理科
170	Chronic nephritis caused by <i>Leptospira</i> spp	Pig	中興大學獸醫學院
173	Ureteropyelitis and cystitis	Pig	中國化學製藥公司
254	Pulmonary actinomycosis.	Human	耕莘醫院病理科
259	Tuberculous peritonitis	Human	彰化基督教醫院病理科
260	Septicemic salmonellosis	Piglet	屏東科技大學獸醫系
261	Leptospirosis	Human	慈濟醫院病理科
267	Mycobacteriosis	Soft turtles	屏東科技大學獸醫系
290	<i>Staphylococcus</i> spp. infection	Formosa Macaque	中興大學獸醫病理學研究所
291	Leptospirosis	Dog	台灣大學獸醫學系
296	Leptospirosis	Human	花蓮慈濟醫院
305	Cryptococcus and Tuberculosis	Human	彰濱秀傳紀念醫院
319	Placentitis, <i>Coxiella burnetii</i>	Goat	台灣動物科技研究所
321	Pneumonia, <i>Burkholderia pseudomallei</i>	Goat	屏東縣家畜疾病防治所
339	Mycoplasmosis	Rat	國家實驗動物中心
352	<i>Chromobacterium violaceum</i> Septicemia	Gibbon	Bogor Agricultural University, Indonesia
353	Salmonellosis	Pig	國立中興大學獸醫學院
367	Melioidosis ( <i>Burkholderia pseudomallei</i> ), lung	Human	花蓮慈濟醫院
370	Suppurative bronchopneumonia ( <i>Bordetellae trematum</i> ) with <i>Trichosomoides crassicauda</i> infestation	Rat	國立中興大學獸醫學院
374	Pulmonary coccidioidomycosis	Human	彰化基督教醫院
375	Paratuberculosis in <i>Macaca cyclopis</i>	<i>Macaca cyclopis</i>	國立屏東科技大學獸醫學院
379	Bovine Johne's disease (BJD) or paratuberculosis of cattle	Dairy cow	屏東縣家畜疾病防治所
380	NTB, <i>Mycobacterium abscessus</i>	Human	佛教慈濟綜合醫院暨慈濟大學病理科
382	Leptospirosis	Pig	國立屏東科技大學獸醫學院

	384	Neisseria Infected Pneumonitis	Cat	中興大學獸醫學系
	385	Mycobacteria avian complex dacryocystitis	Human	花蓮佛教慈濟綜合醫院
	387	Swine Erysipelas	Pig	屏東縣家畜疾病防治所
病毒	21.	Newcastle disease	Chickens	台灣大學獸醫學系
	22.	Herpesvirus infection	Goldfish	台灣大學獸醫學系
	30.	Demyelinating canine distemper encephalitis	Dog	台灣養豬科學研究所
	31.	Adenovirus infection	Malayan sun bears	台灣大學獸醫學系
	50.	Porcine cytomegalovirus infection	Piglet	台灣省家畜衛生試驗所
	55.	Infectious laryngo-tracheitis (Herpesvirus infection)	Broilers	國立屏東技術學院獸醫學系
	69.	Pseudorabies (Herpesvirus infection)	Pig	台灣養豬科學研究所
	78.	Marek's disease in native chicken	Chicken	屏東縣家畜疾病防治所
	92.	Foot- and- mouth disease (FMD)	Pig	屏東縣家畜疾病防治所
	101.	Swine pox	Pig	屏東科技大學獸醫學系
	110.	Pseudorabies	Piglet	國立屏東科技大學
	112.	Avian encephalomyelitis	Chicken	國立中興大學
	128.	Contagious pustular dermatitis	Goat	屏東縣&台東縣家畜疾病防治所
	130.	Fowl pox and Marek's disease	Chicken	中興大學獸醫學系
	133.	Japanese encephalitis	Human	花蓮佛教慈濟綜合醫院
	136	Viral encephalitis, polymavirus infection	Lory	美國紐約動物醫學中心
	138	1.Aspergillus spp. encephalitis and myocarditis 2.Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
	153	Enterovirus 71 infection	Human	彰化基督教醫院
	154	Ebola virus infection	African Green monkey	行政院國家科學委員會實驗動物中心
155	Rabies	Longhorn Steer	台灣大學獸醫學系	
163	Parvoviral myocarditis	Goose	屏東科技大學獸醫學	

			系
199	SARS	Human	台大醫院病理科
200	TGE virus	swine	臺灣動物科技研究所
201	Feline infectious peritonitis(FIP)	Feline	台灣大學獸醫學系
209	Chicken Infectious Anemia (CIA)	Layer	屏東防治所
219	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	Cytomegalovirus colitis	Human	彰化基督教醫院病理科
221	Canine distemper virus Canine adenovirus type II co-infection	Canine	國家實驗動物繁殖及研究中心
223	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, lymphoplasmacytic, subacute, diffuse, sever, with marked epidermal pustules, ballooning degeneration, acanthosis, hyperkeratosis, and eosinophilic intracytoplasmic inclusion bodies.	Goat	台灣動物科技研究所
238	Hydranencephaly	Cattle	國立屏東科技大學獸醫學系
248	Porcine Cytomegalovirus (PCMV) infection	Swine	國立屏東科技大學獸醫學系
250	Porcine respiratory disease complex (PRDC) and polyserositis, caused by co-infection with pseudorabies (PR) virus, porcine circovirus type 2 (PCV 2), porcine reproductive and	Swine	屏東縣家畜疾病防所

	respiratory syndrome (PRRS) virus and <i>Salmonella typhimurium</i> .		
255	Vaccine-induced canine distemper	gray foxes	國立台灣大學獸醫學系
265	Bronchointerstitial pneumonia (PCV II infection)	Swine	台灣大學獸醫學系
295	Feline infectious peritonitis (FIP)	Cat	中興大學獸醫病理所
362	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
381	Polyomavirus infection of urinary tract	Human	羅東博愛醫院
黴菌	23. Chromomycosis	Human	台北病理中心
	47. Lung: metastatic carcinoma associated with cryptococcal infection. Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院
48.	Adiaspiromycosis	Wild rodents	台灣大學獸醫學系
52.	Aspergillosis	Goslings	屏東縣家畜疾病防治所
53.	Intracavitary aspergilloma and cavitary tuberculosis, lung.	Human	羅東聖母醫院
54.	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.	Mucormycosis Diabetes mellitus	Human	花蓮佛教慈濟綜合醫院
127.	Eumycotic mycetoma	Human	花蓮佛教慈濟綜合醫院
138	1.Aspergillus spp. encephalitis and myocarditis 2.Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
298	Systemic Candidiasis	Tortoise	中興大學獸醫學院
318	Alfatoxicosis in dogs	Canine	國立臺灣大學獸醫專業學院
322	Allergic fungal sinusitis	Human	羅東博愛醫院
326	Meningoencephalitis, <i>Aspergillus flavus</i>	Cat	國立臺灣大學獸醫專業學院



	331	Histoplasmosis	Human	花蓮慈濟醫院病理科
	332	Pulmonary Blastomycosis	Rat	中興大學獸醫學院
	355	Encephalitozoonosis	Rabbit	國立中興大學獸醫學院
	356	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	386	Dermatophytic pseudomycetoma	Cat	台灣動物科技研究所
寄生蟲	14.	Dirofilariasis	Dog	台灣省家畜衛生試驗所
	15.	Pulmonary dirofilariasis	Human	台北榮民總醫院
	20.	Sparganosis	Human	台北榮民總醫院
	46.	Feline dirofilariasis	Cat	美國紐約動物醫學中心
	49.	Echinococcosis	Human	台北榮民總醫院
	60.	Intestinal capillariasis	Human	台北馬偕醫院
	64.	1.Adenocarcinoma of sigmoid colon 2.Old schistosomiasis of rectum	Human	省立新竹醫院
	66.	Echinococcosis	Chapman's zebra	台灣大學獸醫學系
	67.	Hepatic ascariasis and cholelithiasis	Human	彰化基督教醫院
	106.	Parasitic meningoencephalitis, caused by Toxocara canis larvae migration	Dog	臺灣養豬科學研究所
	139	Disseminated strongyloidiasis	Human	花蓮佛教慈濟綜合醫院
	141	Eosinophilic meningitis caused by Angiostrongylus cantonensis	Human	台北榮民總醫院病理檢驗部
	156	Parastrongylus cantonensis infection	Formosan gem-faced civet	中興大學獸醫學院
	157	Capillaria hepatica, Angiostrongylus cantonensis	Norway Rat	行政院農業委員會農業藥物毒物試驗所
	202	Colnorchiasis	Human	高雄醫學院附設醫院
	203	Trichuriasis	Human	彰化基督教醫院
	204	Psoroptes cuniculi infection (Ear mite)	Rabbit	農業藥物毒物試驗所
205	Pulmonary dirofilariasis	Human	和信治癌中心醫院	
206	Capillaries philippinesis	Human	和信治癌中心醫院	
207	Adenocarcinoma with schistosomiasis	Human	花蓮佛教慈濟綜合醫院	

	286	Etiology- consistent with <i>Spironucleus (Hexamita) muris</i>	Rat	國家實驗動物繁殖及研究中心
	327	Dermatitis, mange infestation	Serow	中興大學獸醫學院
	328	Trichosomoides crassicauda, urinary bladder	Rat	國家實驗動物中心
	362	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
	370	Suppurative bronchopneumonia ( <i>Bordetellae trematum</i> ) with <i>Trichosomoides crassicauda</i> infestation	Rat	國立中興大學獸醫學院
原蟲	4.	Cryptosporidiosis	Goat	台灣養豬科學研究所
	15.	Amoebiasis	Lemur fulvus	台灣養豬科學研究所
	16.	Toxoplasmosis	Squirrel	台灣養豬科學研究所
	17.	Toxoplasmosis	Pig	屏東技術學院獸醫學系
	51.	Pneumocystis carinii pneumonia	Human	台北病理中心
	57.	Cecal coccidiosis	Chicken	中興大學獸醫學系
	65.	Cryptosporidiosis	Carprine	台灣養豬科學研究所
	211	Avian malaria, African black-footed penguin	Avian	臺灣動物科技研究所
	242	Neosporosis	Cow	國立屏東科技大學獸醫學系
	263	Intestinal amebiasis	Human	彰化基督教醫院病理科
	320	Cutaneous leishmaniasis	Human	佛教慈濟綜合醫院
	325	Myocarditis/encephalitis, Toxoplasma gondii	Wallaby	國立臺灣大學獸醫專業學院
立克次體	229	Necrotizing inflammation due to scrub typhus	Human	佛教慈濟醫院病理科
	251	Scrub typhus with diffuse alveolar damage in bilateral lungs.	Human	佛教慈濟醫院病理科
皮膚	216	Cytophagic histiocytic panniculitis with terminal hemophagocytic syndrome	Human	佛教慈濟綜合醫院病理科
	359	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	360	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
其它	9.	Perinephric pseudocyst	Cat	台灣大學獸醫學系
	10.	Choledochocyst	Human	長庚紀念醫院
	11.	Bile duct ligation	Rat	中興大學獸醫學系

37.	Myositis ossificans	Human	台北醫學院
75.	Acute yellow phosphorus intoxication	Rabbits	中興大學獸醫學系
76.	Polycystic kidney bilateral and renal failure	Cat	美國紐約動物醫學中心
80.	1.Glomerular sclerosis and hyalinosis, segmental, focal, chronic, moderate 2.Benign hypertension	SHR rat	國防醫學院 & 國家實驗動物繁殖及研究中心
83.	Phagolysosome-overload nephropathy	SD rats	實驗動物繁殖及研究中心
85.	Renal amyloidosis	Dog	台灣養豬科學研究所
89.	1.Severe visceral gout due to kidney damaged 2.Infectious serositis	Goose	中興大學獸醫學系
91.	Hypervitaminosis D	Orange-rumped agoutis	台灣大學獸醫學系
118.	Cystic endometrial hyperplasia	Dog	臺灣養豬科學研究所
121.	Cystic subsurface epithelial structure (SES)	Dog	國科會實驗動物中心
124.	Superficial necrolytic dermatitis	Dog	美國紐約動物醫學中心
125.	Solitary congenital self-healing histiocytosis	Human	羅東博愛醫院
126.	Alopecia areata	Mouse	實驗動物繁殖及研究中心
142	Avian encephalomalacia (Vitamin E deficiency)	Chicken	國立屏東科技大學獸醫學系
151	Osteodystrophia fibrosa	Goat	台灣養豬科學研究所 & 台東縣家畜疾病防治所
159	Hypertrophic cardiomyopathy	Pig	台灣大學獸醫學系
165	Chinese herb nephropathy	Human	三軍總醫院病理部及腎臟科
167	Acute pancreatitis with rhabdomyolysis	Human	慈濟醫院病理科
171	Malakoplakia	Human	彰化基督教醫院
183	Darier's disease	Human	高雄醫學大學病理科
191	1. Polyarteritis nodosa 2. Hypertrophic Cardiomyopathy	Feline	台灣大學獸醫學系
193	Norepinephrin cardiotoxicity	Cat	台中榮總
196	Cardiomyopathy (Experimental)	Mice	綠色四季

212	Kikuchi disease (histiocytic necrotizing lymphadenitis)	Lymphadenitis	耕莘醫院病理科
225	Calcinosis circumscripta, soft tissue of the right thigh, dog	Dog	台灣大學獸醫所
230	Hemochromatosis, liver, bird	Bird	台灣大學獸醫學系
234	Congenital hyperplastic goiter	Holstein calves	屏東縣家畜疾病防治所
236	Hepatic lipidosis (fatty liver)	Rats	中興大學獸醫學病理學研究所
237	Arteriovenous malformation (AVM) of cerebrum	Human	耕莘醫院病理科
244	Organophosphate induced delayed neurotoxicity in hens	Hens	中興大學獸醫學病理學研究所
257	Severe lung fibrosis after chemotherapy in a child with Ataxia-Telangiectasia	Human	慈濟醫院病理科
294	Arteriovenous malformation of the left hindlimb	Dog	台灣大學獸醫學系
299	Polioencephalomalacia	Goat kid	屏東家畜疾病防治所
310	Hyperplastic goiter	Piglet	屏東家畜疾病防治所
311	Melamine and cyanuric acid contaminated pet food induced nephrotoxicity	Rat	中興大學獸醫學病理學研究所
318	Alfatoxicosis	Canine	國立臺灣大學獸醫專業學院
333	Lordosis, C6 to C11	Penguin	國立臺灣大學獸醫專業學院
341	Pulmonary placental transmogrification	Human	羅東博愛醫院
345	Acute carbofuran intoxication	Jacana	國立中興大學獸醫學院
350	Malakoplakia, liver	Human	慈濟綜合醫院暨慈濟大學
351	Eosinophilic granuloma, Right suboccipital epidural mass	Human	羅東博愛醫院病理科
359	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
360	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
361	Hepatotoxicity of SMA-AgNPs	Mouse	國立中興大學獸醫病

			理生物學研究所
363	Hypertrophy osteopathy	Cat	國立臺灣大學獸醫專業學院
372	Snake bite suspected, skin and spleen	Monkey (red guenon)	國立臺灣大學獸醫專業學院
383	Langerhans cell histiocytosis	Human	聖馬爾定醫院病理科
388	Canine protothecosis	Dog	國立臺灣大學獸醫專業學院