Chinese Society of Comparative Pathology

中華民國比較病理學會

第 65 次比較病理學研討會

(冠狀病毒及其他疾病)

主辦單位

CHINESE SOCIETY of COMPARATIVE PATHOLOGY

中華民國比較病理學會

協辦單位

Taichung Hospital, Ministry of Health and Welfare

衛生福利部臺中醫院

December 20 , 2015 (中華民國 104 年 12 月 20 日)

SCHEDULE
65th MEETING OF COMPARATIVE PATHOLOGY
中華民國比較病理學會 第 65 次比較病理學研討會

時間：104 年 12 月 20 日(星期日) 08:30~17:30　　地點：臺中醫院醫療大樓 12 樓國際會議廳
地址：臺中市 40343 西區三民路一段 199 號　　電話：(04) 22294411

Time(時間)	Schedule(議程)		Moderator(主持)
08:30~09:20	Registration (報到)		
09:20~09:30	Opening Ceremony (致詞) – 李孟智 院長		
09:30~10:20	專題演講	講題：Human coronavirus infections — focus on the Middle East respiratory syndrome coronavirus (MERS-CoV) Dr. Yi-Chun Lo (羅一鈞 醫師) Office of Preventive Medicine, Taiwan Centers for Disease Control (衛生福利部 疾病管制署)	賴銘淙 理事
10:20-10:40	Coffee Break(拍團體照)		
10:40~11:30	專題演講	講題：冠狀病毒引起動物相關疾病之探討 Dr. Hui-Wen Chang (張惠雯 助理教授) Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (國立臺灣大學獸醫專業學院)	賴銘淙 理事
11:30~11:50	肉眼診斷	Dr. Chia-Yin Chen (陳佳吟 獸醫師) Graduate Institute of Veterinary Pathobiology, National Chung Hsing University (中興大學獸醫病理生物學研究所)	梁鍾鼎 理事
11:50~12:15	Case 448	Dr. Chia-Wen Shih (施洽雯 醫師) Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院)	
12:15~13:25	Lunch, and Board Meeting (中華民國比較病理學會理監事會議)		
13:25~13:50	Case 449	Dr. Yen-Chen Chang (張晏禎 獸醫師) Graduated Institute of Molecular and Comparative Pathology School of Veterinary Medicine, NTU (台灣大學獸醫專業學院分子暨比較病理生物學研究所)	鄭謙仁 監事
13:50~14:25	Case 450	Dr. Yen-Chang Chen (陳彥璋 醫師) Department of Pathology, Buddhist Tzu-Chi General Hospital and University (佛教慈濟綜合醫院暨慈濟大學病理科)	
14:25~15:00	Coffee Break		
15:00~15:25	Case 451	Dr. Chung-Tiang Liang (梁鍾鼎 獸醫師) National Applied Research Laboratories (國家實驗動物中心)	張俊梁 理事
15:25~15:50	Case 452	Dr. Ming-Tsung Lai (賴銘淙 醫師) Taichung Hospital, Ministry of Health and Welfare (衛生福利部臺中醫院病理科)	
15:50~16:20	General Discussion (綜合討論)		

目　　錄

Special Lecture 1

(專題演講 一)

Human coronavirus infections — focus on the Middle East respiratory syndrome coronavirus (MERS-CoV)

Yi-Chun Lo (羅一鈞), M.D.
Office of Preventive Medicine, Taiwan Centers for Disease Control
(疾病管制署預防醫學辦公室)

Coronaviruses are enveloped RNA viruses from the *Coronaviridae* family and part of the *Coronavirinae* subfamily. In animals the viruses infect the respiratory and gastrointestinal systems as well as occasionally affecting the liver and the neurological systems. The human coronaviruses mainly infect the upper respiratory and gastrointestinal tract. They often result in upper respiratory tract infections in humans, causing mild illnesses usually of short lasting nature with a rhinitis, cough, sore throat, as well as fever.

Occasionally, the viruses are able to cause more significant lower respiratory tract infections in human with pneumonia; this is more likely in immunocompromised individuals, people with cardiopulmonary illnesses, as well as the elderly and young children. Only very rarely do the human viruses cause severe disease, like severe acute respiratory syndrome.

The five coronaviruses types which affect humans are alpha (229E and NL63), beta (OC43), HKUI1 and SARS-CoV - although the latter is best considered an animal virus that has only rarely infected humans.

In humans, the transmission of coronaviruses between an infected individual and others can occur via respiratory secretions. This can happen either directly through droplets from coughing or sneezing, or indirectly through touching contaminated objects or surfaces as well as close contact, such as touching or shaking hands. There are currently no vaccines or specific treatments for the coronaviruses.

The Middle East respiratory syndrome coronavirus (MERS-CoV) is a new beta virus strain of an animal coronavirus that was first identified in Saudi Arabia in September 2012. This novel coronavirus differs from the previously identified coronaviruses such as the SARS coronavirus (SARS-CoV), which caused the 2003 SARS outbreaks.

There is still much to be investigated, but it is considered likely that this virus originated from an animal source.

Special Lecture 2

(專題演講 二)

冠狀病毒引起動物相關疾病之探討

Hui-Wen Chang (張惠雯), D.V.M., PhD
The Graduate Institute of Molecular Comparative Pathobiology, School of Veterinary Medicine, National Taiwan University
(國立台灣大學獸醫專業學院分子暨比較病理生物學研究所)

The emergence of severe acute respiratory syndrome (SARS) in 2003 and Middle East respiratory syndrome (MERS) in 2012 illustrates that coronaviruses (CoVs) may quiescently emerge from possible animal reservoirs and can cause potentially fatal disease in humans, as previously recognized for animals. Consequently the focus of this presentation will be on the comparative pathogenesis of SARS and MERS CoV with those CoVs that cause enteric and respiratory infections of various animal hosts. The second part of the talk will focus on evidences of animal CoVs that alter tissue or host tropisms, or virulence by large deletions or point mutations in the spike protein; or acquiring new genes via recombination among CoVs to generate new strains. The spike protein is the major determinant of coronaviruses tropism. Modification of the spike that alters cell and tissue tropism and, in some cases, in association with other viral and host factors, leading to change of virus pathogenicity of CoVs highlights the capacity for viral evolution and the need for surveillance. Furthermore, a systemic CoV infection of feline infectious peritonitis virus (FIPV) in cats will also be shown and the pathogenesis of the disease will be discussed in the end of the talk. The feline CoV infection model provides a frightening glimpse of the severity and potential complications associated with a persistent CoVs in animals. The lessons from animal coronaviruses suggest the importance of one health approach and multidisciplinary teams and combined efforts of medical and veterinary scientists are essential in studying and controlling CoVs infections.

Gross Show

Case Number: Gross show
Slide No.:CO15-983
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=990

Chia-Yin Chen (陳佳吟) DVM[1], Hao-Kai Chang (張皓凱) DVM[1], Cheng-Chung Lin (林正忠) DVM, PhD. [1]
[1] Graduate Institute of Veterinary Pathobiology, National Chung Hsing University (國立中興大學獸醫病理生物學研究所)

CASE 1 HISTORY

Signalment:

An adult slaughtered dairy cattle.

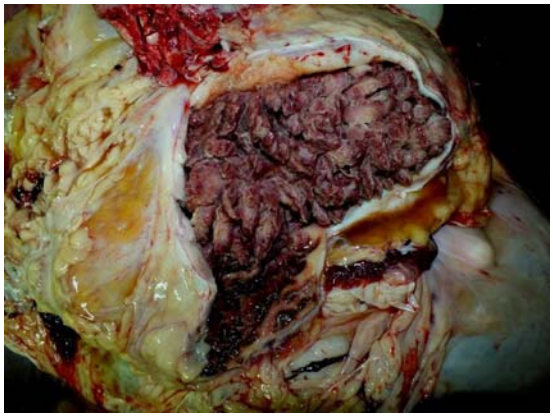
Clinical History:

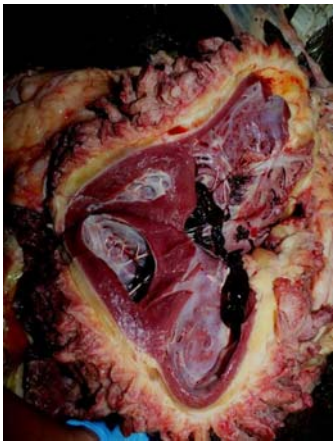
The mandible of the patient was swelling. The heart was condemned by a meat inspection veterinarian during slaughter processing.

Gross Findings:

Around the heart, an iron nail was found in the pericardial cavity. The surface of the heart was thickened and packed with lots of gray villus-like projections and adhesions. There were hundreds of villi, which sized about 2.5×3 cm. The distribution of projections was covering the entire surface of the heart. Both ventricles were hypertrophy.

Pictures:





Case Number: Gross show

CASE RESULTS

Histopathological Findings:

Pericardium was thickening. The hyperplastic fibrous connective tissue adhered to the pericardium. The projections were composed with lots of fiber and fibrin, accompanied by hemorrhage and aggregation of amounts of neutrophils. The myocardial cells were intact or mild hypertrophy.

Diagnosis:

1. Traumatic pericarditis, severe, chronic progressive, diffuse, heart.
2. Hardware disease in a cattle

Discussion:

Traumatic pericarditis was caused by foreign bodies that penetrated the reticulum. This was due to the cows' inability to pick which was the food or the foreign matter when they were eating. Therefore, this disease is a common gastrointestinal disease in adult cows.

The common foreign bodies are wires, nails, etc. Some research indicates that 16 % of the 1491 slaughtered cattle (including 94% of cows) had foreign bodies in the reticulum; of which 10% appeared to have chronic lesions from piercing of the reticulum.

Traumatic pericarditis caused not only digestive disorders but also resulted in other diseases which happened from the piercing of foreign bodies in different positions. If foreign bodies penetrate the reticulum wall, it might lead to peritonitis. Penetration of the liver or spleen might cause abscess. If the lung is penetrated, it may lead to pneumonia. Penetration of the heart could cause traumatic pericarditis.

The first step of the treatment was removing the foreign bodies, such as administering magnets or gastrotomy. Next, broad-spectrum antibiotics and anti-inflammatory drugs were consecutively administered for 4-5 days.

Reference:

1. Braun U. Traumatic pericarditis in cattle: Clinical, radiographic and ultrasonographic findings. Vet J 182: 176-86, 2009.
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MEETING OF COMPARATIVE PATHOLOGY

December 20, 2015

中華民國比較病理學會第 65 次比較病理學研討會

CASE DIAGNOSIS

Case No.	Presenter	Slide No.	Diagnosis
肉眼診斷	陳佳吟	Gross show	1. Traumatic pericarditis, severe, chronic progressive, diffuse, heart. 2. Hardware disease in a cattle http://www.ivp.nchu.edu.tw/slide_view.php?id=990
Case 448	施洽雯	LP1510874	EBV associated extranodal NK / T-cell lymphoma, nasal type http://www.ivp.nchu.edu.tw/slide_view.php?id=987
Case 449	張晏禎	P2014-03a	Porcine epidemic diarrhea (PED) http://www.ivp.nchu.edu.tw/slide_view.php?id=989
Case 450	陳彥璋	A2014-4b	*Mycobacterium avium* infection http://www.ivp.nchu.edu.tw/slide_view.php?id=986
Case 451	梁鍾鼎	NLAC_PDX1	Mouse, subcutaneously mass – exocrine pancreatic adenocarcinoma, AsPC-1 cells, human origin, heterotopical model http://www.ivp.nchu.edu.tw/slide_view.php?id=988
Case 452	賴銘淙	SE215_5572U SE215_5572D	1. Extranodal NK/T-cell lymphoma, nasal type 2. Regional lymph nodes and omentum are involved. http://www.ivp.nchu.edu.tw/slide_view.php?id=992 http://www.ivp.nchu.edu.tw/slide_view.php?id=991

Case Number: 448
Slide No.: LP15-10874
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=987

C.W. Shih (施洽雯), M.D., M.S[1], C.T. Chen (陳朱德), M.D.[2], and C. W. Chiang (蔣敬文), M.D.[3]

[1, 2]Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院病理科)
[3] Department of Otolaryngology, Lotung Poh-Ai Hospital (羅東博愛醫院耳鼻喉科)

CASE HISTORY:

Signalment: 42-year-old man.

Clinical History:

A 42-year-old male patient came to the OPD (outpatient department) of Lotung Poh-Ai Hospital with the chief complaint of sore throat for one month and had been treated as acute tonsillitis for 2 weeks at LMD (local medical doctor). He had no history of tobacco smoking nor betel nut chewing. He had no systemic disease as hypertension or diabetes mellitus. No fever nor body weight loss. On physical examination, the patient's tonsils were not swelling nor congested. Fibroscope showed middle turbinate tumor and right nasopharyngeal tumor with necrosis and ulceration. MRI (magnetic resonance imaging) study showed a mass measuring about 3.0 x 1.5 x 1.2 cm in the right nasopharynx with parapharyngeal extension. Biopsy at nasopharynx and turbinate were performed.

Grossly, the specimens got from turbinate submitted consisted of 4 small tissue fragments measuring up to 1.1 x 0.8 x 0.5 cm. The specimens got from nasopharynx submitted consisted of 8 small tissue fragments measuring up to 1.4 x 0.8 x 0.7 cm. They were grayish-brown color and soft consistency.

Clinical Pathology:

BUN: 12 mg/dL (6-20 mg/dL), Creatinine: 0.8 mg/dL (0.7-1.3 mg/dL), Glucose: 92 mg/dL (70-100 mg/dL), AST: 20 U/L (5-40 U/L), ALT: 14 U/L (5-40U/L), Na: 139 mmol/L (135-145 mmol/L), K: 4.3 mmol/L (3.5-5.1 mmol/L), Cl: 101.2 mmol/L (96.0-110-0 mmol/L), RBC: $5.44x10^6$/uL (4.6-6.2x10^6/uL), Hb: 14.6 gm/dL (14.0-18.0 gm/dL), Hct: 46.5 % (40-54%), Plt: 22.1 x10^4/dL (15-40 x10^4/dL), WBC: 5000/uL (4500-11000/uL), Lymphocyte: 27.0% (20.0-45.0%), Neutrophil: 65.2% (45.0-75.0%), Monocyte:16.3% (0.0-9.0%), Eosinophil: 1.1% (1.0-3.0%), Basophil: 0.4% (0.0-1.0%).

Case Number: 448

CASE RESULT:

Histopathologic Findings:

The tissue fragments are partly covered by stratified squamous epithelium with areas of ulcer with degeneration and necrosis containing necrotic debris and neutrophils. The underlying submucosal tissue revealed lymphoproliferative process characterized by an extremely polymorphous picture with largely consisted of a mixture of atypical large and small lymphoid cells, along with plasma cells, histiocytes and occasional eosinophils. The large lymphoid cell component was predominant. The large lymphoid cells had hyperchromatic nuclei. The lymphoid cells showed a tendency to be angiocentric with focal areas of vascular destruction. Invasion of vascular walls and occlusion of lumen by lymphoid cells with varying degrees of cytologic atypia were also noted.

Immunohistochemistry:

Sections of tissue specimen were subjected for immunohistochemical evaluation. On immunohistochemical analysis, the tumor cells were positive for CD3, CD5, and CD56, and negative for CD20, CD138, CD68, CD15, CD30, and CK.

The in situ hybridization for Epstein-Barr virus-encoded small RNA (EBER) showed positive.

Differential diagnosis:

1. Necrotizing inflammation.
2. Tuberculosis.
3. Non-Hodgkin's lymphoma.
4. Hodgkin's lymphoma.
5. Extranodal NK / T-cell lymphoma,

Diagnosis: EBV associated extranodal NK / T-cell lymphoma, nasal type.

Comments:

Nasal extranodal NK / T-cell lymphoma (NKTCL) is aggressive, locally destructive midfacial necrotizing lesion characterized by extranodal involvement, particularly the nasal/paranasal area and represent about 75% of all nasal lymphomas.

In the past, these lymphomas have been confused with a number of infectious, autoimmune, or inflammatory designations, most of which we now know represent peripheral T-cell lymphomas or angiocentric immunoproliferative lesions. These older terms include midline lethal granuloma, polymorphic reticulosis and midline malignant reticulosis.

Different descriptive titles applied to proliferative, ulcerative and midline lesions

1897 McBride Ulceronecrotic proliferative lesions of the upper airways
1933 Stewart Lethal granulomatous ulceration of the nose
1939 Wegener Necrotizing granulomatous process of the mid face
1966 Eichel et al Polymorphic reticulosis
1967 Ah Moo Midline granuloma
1969 Weissfeld and Shosheim Lethal midline granuloma
1969 Kassel et al Midline malignant reticulosis
1978 Friedmann et al Lethal midline granuloma syndrome
1972 Leibow et al Lymphomatoid granulomatosis
1984 Jaffe Angiocentric immunoproliferative lesion
1992 Maxymiw et al Lymphoma presenting as a midfacial necrotizing agent
1992 Grange et al Centrofacial malignant granuloma
1994 Mishima et al, Weiss et al Nasal T-cell lymphoma.

In 1982 Ishii et al first recognized the presence of tumor cells expressing CD3 in this lesion and termed this disease “nasal T-cell lymphoma”. Further characterization of this tumor revealed angiocentric infiltration of tumor cells and the terminology of “angiocentric T-cell lymphoma” was proposed. On November 11-14, 1994, a workshop on NK-cell lymphomas was held in Hong Kong. At the meeting, tumor angiocentricity was not considered an absolute characteristic of nasal NK-cell lymphomas, and similarities with non-nasal NK-cell lymphomas were confirmed.

Suzumiya et al. demonstrated that tumor cells of this nasal lymphoma express cytoplasmic CD3 and CD56, but not T-cell receptors, suggesting their NK-cell origin. Thus, the nomenclature of “nasal and nasal-type T/NK-cell lymphoma” was employed. In the WHO classification, the extranodal origin of this lymphoma was emphasized, and the terminology “ENKL, nasal-type” was adopted. The latest World Health Organization (WHO) classification recognizes 2 main categories of NK cell-derived neoplasms, namely, aggressive NK cell leukemia and extranodal NKTCL, nasal type.

Extranodal NKTCL is uncommon neoplasm in the United States, representing approximately 1.5% of all lymphomas. Whereas most of sinonasal lymphomas are diffuse large B-cell lymphomas in Western population. Extranodal NKTCL is more common in Asia accounting for 9% of all malignant lymphomas and 74% of lymphomas arising within nasal cavity and paranasal sinuses. A higher incidence has also been reported in South American countries, especially Peru. In these areas, extranodal NKTCL accounts for approximately 6.7-8.0% of all lymphomas.

Extranodal NKTCL are most common in the nasal cavity including nose, nasal passages and paranasal sinuses, but other sites may include the skin, G-I tract, testis, kidney, upper respiratory tract and rarely the eye/orbit. Involvement of the regional lymph nodes is unusual until the tumor disseminates.

Natural killer (NK) cells are lymphoid cells that mediate lysis of tumor cells and bacteria- or virus-infected cells and the production of immunomodulatory cytokines. Morphologically, mature

NK cells are large granular lymphoid cells, which are characterized by the presence of pale cytoplasm containing azurophilic granules. The bone marrow is the main site of development of NK cells. Unlike T-cell large granular lymphocytes, they are negative for surface CD3 but characteristically express cytoplasmic CD3 epsilon (ε) and CD56. Epstein-Barr virus (EBV) is found in most cases of NK-cell leukemia/lymphoma, suggesting an oncogenic role.

Nasal extranodal NKTCL occurs in all age groups. However, it seems to occur more often in people in their 50s and affects more men than women. Studies have shown a male to female ratio of 2:1 to 3:1.

The initial signs and symptoms of nasal extranodal NKTCL are often localized to the nasal region and include nasal obstruction and chronic rhinorrhea. Nasal septal perforation has been reported in 40% of cases. Pain may accompany the nasal symptoms. Late in the disease, people with nasal extranodal NKTCL often develop a very serious condition where there is uncontrolled activation of certain parts of the immune system (hemophagocytic syndrome). This condition results in fever, hepatosplenomegaly, and pancytopenia.

Despite the malignant clinical course, histological diagnosis can be difficult because of extensive tissue necrosis and multiple biopsies that are often required.

Histopathological examination of the lesion exhibits hypercellular picture, which is pleomorphic with many large or immunoblast-like cells and relatively few small lymphocytes. The neoplastic cells are small to medium in size with occasional large and anaplastic forms. The neoplastic cells may be admixed with a polymorphic infiltrate of non-neoplastic inflammatory cells including small lymphocytes, plasma cells, histiocytes, and eosinophils. A striking feature is the angiocentric distribution of the tumor cells and angiodestruction, which may mimics vasculitis. Therefore, a diagnosis of malignant lymphoma is frequently dependent on the identification of atypical lymphoid cells amid an intense inflammatory, necrotic and degenerating cellular milieu. If atypical cells are not apparent, the lesion may be idiopathic midline destructive disease, a localized, destructive inflammatory process that is confined to the upper respiratory tract.

The immunophenotype of NK lymphoma cells is classically positive for CD2, CD56,
TIA-1 (T-cell intracellular antigen-1) and cytoplasmic CD3 epsilon (ε). They are negative for surface CD3. Unlike normal NK cells, the tumor cells are usually negative for CD7 and CD16. Presence of EBV infection shown by in situ hybridization (ISH) for EBV-encoded early small RNA (EBER) is a distinctive feature.

A standard staging system for estranodal NKTCL is lacking. As for other extranodal lymphomas, the Ann-Arbor staging system, originally designed for Hodgkin's lymphoma, is unsatisfactory for extranodal NKTCL. It does not take into account the tumor size and the resultant invasion to contiguous structures which may be an important prognostic determinant. A T-staging system, originally designed for sinonasal B-cell lymphoma has been adopted to overcome this problem by taking into account the extent of local tumor involvement. T1 denotes confinement to the nasal cavity. T2 indicates extension to the maxillary antra, anterior ethmoid sinus or hard palate. T3 indicates extension to posterior ethmoid sinus, sphenoidal sinus, orbit, superior alveolar bone, cheeks, or superior buccinators space. T4 indicates involvement of the inferior alveolar bone,

inferior buccinators space, infratemporal fossa, nasopharynx, or cranial fossa. Patients with T1/2 disease had shown a better clinical outcome than those with T3/4 disease.

Treatment of nasal extranodal NKTCL is generally external beam radiation therapy, often combined with chemotherapy. Early stage disease, in particular for localized lesion in the nasal region, is treated with chemotherapy and involved-field radiotherapy. On the other hand, multiagent chemotherapy is the mainstay of treatment for advanced or disseminated disease. A stem cell transplant may be offered to some people with extranodal NKTCL who relapse after initial treatment.

Compared with other subtypes of lymphoma found in the head and neck region, NKTCL carries a much higher mortality and responds less well to traditional chemotherapy and radiotherapy regimens. Overall, median survival time is reported as 12.5 months. Survival time for patients who present with a disseminated leukemic picture is reported to be less than 6 months. A complete response to primary treatment is reported in 56% of patients. Overall, the 2-year survival rate is 45%, and the 2-year disease-free survival rate is reported at 31%.

A high level of circulating plasma EBV DNA has correlated with high tumor load, extensive disease, poor response to treatment, and poor survival. The investigators suggested that circulating EBV-DNA levels could serve both as a valuable biomarker of tumor load for accurate classification of early-stage disease and as a prognostic factor.

In conclusion, nonspecific nasal symptoms often predate the appearance of mucosal ulceration and tissue necrosis. The ambiguous nature of these symptoms can result in a delay in diagnosis. Representative biopsy material and good interaction with the pathologist is important. It is now generally accepted that a large number of biopsies must be performed to confirm the diagnosis of nasal extranodal NKTCL. Nasal extranodal NKTCL is characterized by its polymorphic clinical features, responsible for diagnostic difficulty and frequently delayed management. Histological examination of biopsy specimens completed by immunohistochemistry and in situ hybridization for EBV-encoded small RNA (EBER) is essential to establish the positive diagnosis.

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12. H. Yokoyama, J. Yamamoto, Y. Tohmiya et al., "Allogeneic hematopoietic stem cell transplant following chemotherapy containing l-asparaginase as a promising treatment for patients with relapsed or refractory extranodal natural killer/T cell lymphoma, nasal type," Leukemia and Lymphoma, vol. 51, no. 8, pp. 1509–1512, 2010.

Case Number: 449
Slide no.: P2014-03a
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=989

Yen-Chen Chang (張晏禎), D.V.M[1]., and Hui-Wen Chang (張惠雯), D.V.M., PhD. [1]
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CASE HISTORY

Piglets under 1 week of age showed severe vomiting and watery yellowish diarrhea with morbidity and mortality ranging from 80 to 100% and 90 to 100%, respectively, were submitted for pathological diagnosis. The affected suckling pigs showed different degrees of weight loss and dehydration.

Gross Finding:

When necropsy, gross lesions include distension of small intestine with yellowish fluid, thin and transparent intestinal walls and the stomach was filled with curdle milk.

Case Number: 449

CASE RESULT

Histopathological Finding:

Acute, diffuse, severe atrophic enteritis characterized by reduction in the villous height and crypt depth ratio, villous blunting and fusion, and cell exofoliation on the tips of villous enterocytes is noted in the jejunum and ileum sections.

Molecular Diagnosis:

RT-PCR: porcine epidemic diarrhea virus (PEDV) positive; porcine rotavirus and transmissible gastroenteritis coronavirus (TGEV) negative

IHC: PEDV positive signals were detected in the enterocytes of villi.

Diagnosis:

Porcine epidemic diarrhea (PED)

Discussion:

The disease of PED first appeared in England and Belgium in 1970s, and the etiology agent, PEDV, belongs to the order Nidovirales, genus *Alphacoronacirus*, family *Coronaviridae* (1, 2). It consists of single-stranded positive-sense RNA genome of approximately 28 kb in size, which encodes three nonstructural proteins and four major structural proteins: the spike (S) glycoprotein, phosphorylated nucleocapsid (N) protein, membrane (M) glycoprotein, and envelope (E) protein. The spike protein is majorly responsible for viral entry via interactions with specific host cell receptors and for induction of neutralizing antibodies (3). The membrane and envelope are associated with virus assembly via interacting with spike and nucleocapsid protein (4). The primary role of nucleocapsid protein is to package viral genomic RNA into the virus particles (5).

PEDV is mainly transmitted via oral-fecal route, though aerosolized PEDV is also infectious (6). The major transmission source of PEDV may be the diarrheal feces or vomitus. Other possible virus carriers may be asymptomatic pigs or persons that carry contaminated fomites from farm to farm (7). Besides horizontal transmission, potential route for vertical transmission of PEDV via sow milk is also suggested (8, 9).

PEDV establishes it's infection majorly in porcine villous enterocytes, which express the cellular receptor, aminopeptidase N (APN; CD13) (10) for PEDV. PEDV replicates in the cytoplasm of villous epithelial cells in small intestine and sometimes in colon resulting in severe villous atrophy and leading to malabsorptive diarrhea (11).

There are several viruses that can cause diarrhea in pigs with similar clinical signs and pathologic features to PED. These viruses include porcine deltacoronavirus (PDCoV), transmissible gastroenteritis virus (TGEV), and porcine rotavirus. Despite of different age tropism of these viruses, these viral infections appear similar in clinical signs, replication site, gross lesions, and

microscopic lesions. Therefore, a definitive diagnosis of PED majorly depends on molecular diagnosis methods.

The recent global outbreaks of PED with the high mortality in neonatal piglets may be contributed by several factors, including the mutation of the virus, the lacking of maternal antibodies, and the slower turnover of enterocytes (5-7 days) of neonatal piglets (11, 12). It had been demonstrated that currently available vaccines, CV777 and the attenuated PEDV DR13 vaccines might not be able to protect against the infection and control disease progression from the new PEDV variants. A new generation of PEDV vaccine is therefore urgently in need.

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Case Number: 450
Slide No.: A2014-4b
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=986

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(佛教慈濟綜合醫院暨慈濟大學病理科)

CASE HISTORY

Signalment: 47 year-old female

Clinical History:

A 47-year-old female, with past history of (1) systemic lupus erythematosus (SLE) diagnosed at 33 y/o under prednisolone medication (2) Sjögren's syndrome (3) left breast grade III infiltrating ductal carcinoma (IDC), diagnosed at 46 y/o, with brain, pleura, and inguinal lymph node metastases s/p chemotherapy and radiotherapy of brain, was admitted on 2011.01.30 due to dyspnea.

Chest x-ray was arranged and showed bilateral increased infiltration with left pleural effusion. Serial follow-up of chest x-ray during hospital shows the progression of increased infiltration with reticulonodular pattern lesions formation on right lung field and pneumothorax of left lung. Pneumonia was impressed and Tazocin and Amikin were prescribed. However, the symptoms progressed and chest x-ray on 2011.02.08 shows bilateral white-out change and the vital sign of this patient became unstable and downhill. Eventually, she was AAD.

Gross Finding:

On autopsy, the left lung was remarkable shrinkage compared to right lung due to compress by pleural effusion. In addition, we found multiple small whitish lesions on the lung. Metastatic breast cancer or pneumonia patch were considered; therefore, sections were taken. The abscesses of bronchopneumonia were also noted grossly.

Case Number: 450

CASE RESULT

Histopathologic Finding:

Microscopically, on low power view, the lung shows eosinophilic map-like areas of necrosis without significant cellular reaction. The alveoli are filled with serofibrinous exudate and the septa are destroyed and indistinct. On high power view, the necrotic areas show caseous necrosis with fibrinous exudate, some epithelioid cells and Langerhan giant cell without significant lymphocytic component. Foamy histiocytes aggregation is noted on the central area of necrosis. Acid-fast stain reveals multiple bacilli within the macrophages. The liver also shows identical picture. Molecular study showed *Mycobacterium avium* (+) finally.

Diagnosis:

Mycobacterium avium infection

Discussion:

Bacteria in the genus *Mycobacterium* are slender, aerobic rods that grow in straight or branching chains. Mycobacteria have a unique waxy cell wall composed of unusual glycolipids and lipids including mycolic acid, which makes them acid-fast, meaning they will retain stains even on treatment with a mixture of acid and alcohol. They are weakly gram positive.

Mycobacterium avium and *M. intracellulare* are separate species, but the infections they cause are so similar that they are simply referred to as M. avium complex (MAC). MAC is common in soil, water, dust, and domestic animals (ubiquitous microorganisms in the environment). Clinically significant infection with MAC is uncommon except among people with T-cell immunodeficiency due to AIDS, and immunosuppression resulting from treatment for *transplant rejection* or *autoimmune diseases*.

Patients are feverish (80%), with drenching night sweats (35%) and weight loss (25%). Additional symptoms include fatigue, malaise, and anorexia. In patients with *marked T-cell immunodeficiency*, MAC causes widely disseminated infections, and organisms proliferate abundantly in many organs, including the lungs and gastrointestinal system. Organ-specific symptoms and signs reflect the major sites of involvement including (1) bone marrow involvement: anemia and neutropenia (2) lymphoreticular involvement: adenopathy or hepatosplenomegaly (3) GI tract: diarrhea, abdominal pain, hepatomegaly, and elevations of liver enzymes (4) pulmonary involvement: cough and lung infiltrates.

The susceptibility to NTM infection includes (1) Disseminated disease most commonly seen in association with profound immunosuppression especially In HIV infected patients in which dissemination does not typically occur unless the CD-4+ T-lymphocyte count is below 50/uL. (2) Patient with structural lung disease, such as cystic fibrosis, chronic obstructive pulmonary disease (COPD), silicosis, pneumoconiosis or prior TB infection. Nodular bronchiectasis is very strongly

associated with NTM infections. (3) Lung transplantation (4) Interleukin-12 (IL-12) and interferon-gamma (INF-γ) are crucial elements of the host defense response to NTM. Defects in these pathways increase susceptibility to NTM infections. (5) Increasing therapeutic use of tumor necrosis factor-alpha (TNF-α) receptor antagonist drugs, especially in rheumatoid arthritis and other connective tissue diseases, has been associated with a concomitant increase in NTM infections.

The following tables show variable radiological features of MAC pulmonary disease and diagnostic criteria.

Table 1. Radiologic Features of MAC Pulmonary Disease

Study (*n*)	Feature	Patients with Feature, %
Christensen et al[37] (114)	Upper lobe infiltrates, apical/posterior	92
	Cavitary lesions	88
	Atelectasis/scarring	70
	Adenopathy	< 5
	Endobronchial spread	80
	Pleural effusion	5
Woodring et al[38] (40)	Linear shadows and nodules with/without calcification	63
	Consolidation	15
	Upper lobe involvement, apical/posterior	87
	Mass-like densities	8
	Cavitary lesions	38
	Pleural effusions	15
	Apical pleural thickening	30
	Lymphadenopathy	5
Albelda et al[39] (35)	Upper lobe disease	49
	Cavitary lesions	43
	Solitary nodule	4
	Pleural effusion	0
	Adenopathy	0

Table 3. Diagnostic Criteria for MAC Pulmonary Disease

Clinical criteria

a. Compatible signs/symptoms (cough, fatigue most common; fever, weight loss, hemoptysis, dyspnea may be present, particularly in advanced disease) with documented deterioration in clinical status if an underlying condition is present

b. Reasonable exclusion of other disease (eg, tuberculosis, cancer, histoplasmosis) to explain condition, or adequate treatment of other condition with increasing signs and symptoms

Radiologic criteria

a. Any of the following chest radiograph abnormalities (if baseline films are more than 1 year old, evidence of progression should be present):

Infiltrates with or without nodules (persistent ≥ 2 months or progressive)

Cavitation

Nodules alone (multiple)

b. Any of the following high-resolution CT scan abnormalities:

Multiple small nodules

Multifocal bronchiectasis with or without small lung nodules

Bacteriologic criteria

a. At least 3 available sputum/bronchial wash samples within 1 year

3 positive cultures with negative AFB smears

OR

2 positive cultures and 1 positive AFB smear

OR

b. Single available bronchial wash and inability to obtain sputum samples

Positive culture with 2+, 3+, or 4+ growth

OR

Positive culture with a 2+, 3+, 4+ AFB smear

OR

c. Tissue biopsy

Any growth on bronchopulmonary tissue sample

Granuloma and/or AFB on lung biopsy with 1 or more positive culture from sputum/bronchial wash

Any growth from usually sterile extrapulmonary site

The hallmark of MAC infections is abundant acid-fast bacilli within macrophages. There may be a *yellowish pigmentation* to these organs secondary to the large number of organisms present in swollen macrophages. Granulomas, lymphocytes, and tissue destruction are rare.

Newer macrolide drugs such as azithromycin and clarithromycin are central to drug therapy for MAC lung infections. These agents demonstrate *in vitro* and clinical activity against MAC, and are able to achieve penetration into phagocytes and tissue. It is imperative that these agents not be used in isolation due to the substantial possibility of the development of resistance. Combination drug therapy with a macrolide (azithromycin or clarithromycin), rifampin or rifabutin, and ethambutol with or without an IV aminoglycoside are recommended. Therapy should be continued for at least one year after conversion of sputum cultures from positive to negative, commonly exceeds 18 months or more.

Patient with systemic lupus erythematosus (SLE) is susceptible to non-tuberculous mycobacterium (NTM) infection due to immunosuppression by medical agents. In a retrospective cohort study, M.Y. Mok et al. showed 11 cases (prevalence 1.5%) of SLE infected with NTM and 39 patients (prevalence 5.4%) with *Mycobacterium tuberculosis* (MTB) infection. The duration of SLE at infection is significant different, with mean 9.3 years in NTM and 3.7 years in MTB respectively ($p < 0.001$). The dosage of prednisolone at infection (mg/day) is no difference (12.7 vs. 10.8), but the cumulative dose of prednisolone (g) at infection is significantly different with 25.82 vs. 11.58 in NTM and MTB individually ($p = 0.01$). MTB infection was found to occur earlier in the clinical course of SLE than NTM infection. The different timing was likely to be related to the different levels of immunosuppression. The longer duration of follow-up with the associated higher cumulative dose of prednisolone in patients with NTM infections may suggest that these infections occurred in more immunocompromised SLE patients than MTB infection. This is reminiscent of the situation in HIV-infected patients where tuberculosis usually develops at an earlier stage than NTM infections during the course of HIV infection. Only rarely has mortality been reported in NTM infection in SLE patients. The factor predisposing SLE patients to infections is following:

Table 1. Factors predisposing SLE patients to infections

Breakdown of integument and mucosal barriers
Lymphocyte defects
• Lymphopenia
• Defective CD4 positive T cell proliferation and IL-2 production to antigenic and mitogenic stimulation
• Reduce cytotoxicity of CD8 positive T cells
Impaired effector cell response: Macrophage, Monocytes, Granulocyte
• Hypocomplementemia
• Impaired antigen-presenting function of monocytes and macrophages
• Defective opsonization
• Impaired neutrophil chemotaxis and phagocytosis
• Defective natural killer cells
• Low serum level of mannose-binding lectin (MBL)
Autosplenectomy and functional hyposplenia / asplenia

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Case Number: 451
Slide No.: NLAC_PDX1
Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=988

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CASE HISTORY:

Signalment: Advanced severe immunodeficiency mice (ASID), PAX-1, male, 6 - month-old

Clinical History:

Human exocrine pancreatic tumor cell line (AsPC-1 cells) was injected subcutaneously one month before. The mouse of this case showed thin, moribund and wasting syndrome. Before death, the mouse was euthanized by CO2 asphyxiation.

Gross Findings:

Subcutaneously enlarged mass (2 x 2 x 1 cm) was noted and submitted for histopathological diagnosis.

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CASE RESULT:

Histopathologic Findings:

These tumor cells are chiefly well demarcated and encapsulated in the subcutaneous areas. Tumor cells typically have moderate to abundant amounts of granular eosinophilic cytoplasm with cellular pleomorphism and anaplasia. Losses of acinar architecture, glandular, trabecular or solid growth pattern were also noted as well. Various proportions of large pleomorphic cells, or round cells with perivascular pseudorosette appearance, one or two eccentrically located nucleoli are present. Mitotic index were 5-10 HPF.

Differential Diagnosis:

1. Acinar cell neoplasms
2. Medulloblastomas
3. Pancreatoblastoma
4. Pancreatic ductal neoplasms

Diagnosis:

1. Mouse, subcutaneously mass – exocrine pancreatic adenocarcinoma, AsPC-1 cells, human origin, heterotopical model.

Discussion:

Pancreatic cancer is one of the deadliest of all of the solid malignancies. The five-year survival rate is only 4%. The American Cancer Society estimates that 37,170 Americans will be diagnosed with pancreatic cancer in the year 2007 and 33,370 will die from it, making pancreatic cancer the fourth leading cause of cancer death. In the United States, the age-adjusted incidence of pancreatic cancer is higher in blacks (14.9 cases per 100,000) than in whites (11.1 cases per 100,000), and it is higher in men (12.8 cases per 100,000) than in women (10.0 cases per 100,000) (**http://seer.cancer.gov/**). Human pancreatic cancer is a disease of inherited (germ-line) and somatic gene mutations. Pancreatic cancer runs in some families and a number of genes responsible for this aggregation (*BRCA2, BRCA1, CDKN2A/p16, STK11/LKB1,* DNA mismatch repair genes) have been discovered. A genetic progression model of pancreatic cancer has been developed, which incorporates genomic, transcriptomic, and proteomic abnormalities implicated in the development of this malignancy. Specifically, alterations observed in the early (*KRAS2* mutations, telomere shortening), intermediate (*p16/CDKN2A* loss), and later (*DPC4, TP53,* and *BRCA2* mutations) stages of disease have been identified. A number of histologically distinct variants of pancreatic cancer with distinct clinical features have been described, of which ductal adenocarcinoma is by far the most common and most lethal subtype.

Pancreatic adenocarcinoma with exocrine acinar cell origin in mice and rats have duct-like structures do not indicate an origin from pancreatic ducts like in human beings. Duct-like structures accompanied by a dense fibrous stroma. Although hyperplasia of ducts may be seen in aged rats it is

still questionable if true ductular neoplasia may occur in rats like in man (cystadenoma, cystadenocarcinoma). In mice, no spontaneous ductal cell hyperplasia or neoplasia have been described so far. Ductal phenotype may occur in transgenic mice (Kras oncogene) or under experimental conditions (chemical, viral or dietary). However, it is recognized that pancreatic neoplasms, particularly those neoplasms that arise in genetically engineered mouse models, can show more than one direction of differentiation. Each component comprising >20% of the neoplasm should be designated. Examples include mixed acinar-endocrine, ductalacinar, ductal-endocrine, and ductal-endocrine-acinar carcinomas. If a minor (<20%) component of a secondary line of differentiation is detected, the neoplasm should be classified based upon the predominant line of differentiation. Pancreatoblastoma, a human neoplasm containing squamoid nests and commonly exhibiting acinar, endocrine, and ductal differentiation, is also regarded as a type of neoplasm with multiple lines of differentiation. Cystic papillary neoplasms should not be confused with solid pseudopapillary neoplasms. Solid-pseudopapillary neoplasms have not been reported in genetically engineered mouse models. In humans, solid-pseudopapillary neoplasms are epithelial neoplasms composed of noncohesive cells that surround delicate blood vessels and form solid masses with frequent cystic degeneration.

In this case, a few areas of tumor cells showed perivascular pseudorosette appearance. Rosettes consist of a halo or spoke-wheel arrangement of cells surrounding a central core or hub. A perivascular pseudorosette consist of spoke-wheel arrangement of cells with tapered cellular processes radiates around a wall of a centrally placed vessel. Unfortunately, perivascular pseudorosettes are also less specific in that they are also encountered in medulloblastomas, PNETs, central neurocytomas, and less often in glioblastomas, and a rare pediatric tumor and monomorphous pilomyxoid astrocytomas as well. A mucicarmine stain and a panel of immunohistochemically staining included labeling for synaptophysin (DakoCytomation, Copenhagen, Denmark; 1:100), cytokeratin 19 (DakoCytomation, 1:50), and chymotrypsin (Biodesign International, Saco, ME; 1:100) will be helpful.

Tumor graft models (also known as patient-derived xenografts, or PDX) are based on the transfer of primary tumors directly from the patient into an immunodeficient mouse. These models established in a nonobese diabetic/severe combined immunodeficient (NOD/SCID) mouse or ASID mice. This breed of mouse lacks natural killer cells and is considered more immunodeficient than a nude mouse. Tumors can be engrafted heterotopically or orthotopically. Heterotopic PDX models involve implanting tumors into the subcutaneous flank of a mouse. Orthotopic transplants are considered to more accurately mimic the human tumors.

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Case Number: 452

Slide No.: SE215_5572D 及 SE215_5572D

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=992
http://www.ivp.nchu.edu.tw/slide_view.php?id=991

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CASE HISTORY:

Signalment: 48 year old male

Clinical history:

This 48-year-old man suffered from body weight loss since one month ago(decrease 8kg within one month). One month prior to admission, he complained epigastric dull pain with fullness. Besides, bloody stool, poor appetite, nausea and vomiting were also noted. He denied tarry stool, change in bowel habit, pain radiation to back nor fever. Thus, he visited to our OPD, where PES was done, which showed gastritis. Thus, conservative treatment was done. However, he came back to our OPD because symptoms persisted and LLQ pain was noted. Thus, we arranged colonoscope, which revealed ascending colon tumor and biopsy. CT was arranged, which showed cecum tumor with peritoneal invasion and ascites. Under the impression of A-colon cancer, he was admitted to our ward and received operation of laparoscopic right hemicolectomy

LAB data:

CEA 2.45 CA-199 30.7 Albumin 2.7

CBC-I(WBC,RBC,Hb,			
白血球計數 W.B.C	7.6		
紅血球計數 R.B.C	4.52		
RDW紅血球大小分佈	20.4	PDW血小板大小分佈	15.2
血色素檢查 Hb	11.8	MPV平均血小板容積	6.8
血球比容值測定 Hct	37.2	白血球分類計算	
平均紅血球容積 MCV	82.4	WBC DC	
平均紅血球血紅素量 MCH	26.2	N-Seg	88.8
平均紅血球血紅素濃 MCHC	31.8	Lymph	4.9
血小板計數 Platelet count	484	MONO	6
		Eosin	0.3
		Baso	0

	X0262	Prothrombin time (			
	X0361	APTT (activated pa			
	XH481	PT(sec")	13.3		
*	XH511	APTT	38.5		
	XH17	PT(INR)	0.98		
		細項備註			
鈉 Na(boold)		131			
鉀 K(Blood)		4.1	X0151	CRTN 肌酐、血	
血清麩胺酸苯醋酸轉 S-GOT/AST		15	X0015	Creatinine(B)	0.7
			XI79	e-GFR	120
血清麩胺酸丙酮酸轉 S-GPT/ALT		15	XI80	STAGE	STAGE 1

Gross Findings:

The specimen submitted consists of a right hemicolectomy, including the terminal ileum (8.0 cm in length and 6.0 cm incircumferences), right side colon (12.0 cm in length and 5.0 cm in circumferences) and the appendix (7.0 cm in length and 0.6 cm in diameter), fixed in formalin. Grossly, the terminal ileum is thickened. The pericolonic fat is bulging and dirty in the cecal area. On serial section, there is an irregular and ulcerative tumor with obstruction, measuring 8x3x1 cm in size and located at the ileocecal valve extending to terminal ileum and cecum. The wall is filled with tumor and necrotic ulcer and hemorrhage and serosa involvement. The tumor measures 8 cm to the section margin and 2.5cm to CRM. The appendix reveals unremarkable.

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CASE RESULT:

Histopathological finding:

Microscopically, mucosal sites show extensive ulceration. The lymphomatous infiltrate is diffuse and permeative. Mucosal glands become widely spaced. An angiocentric and angiodestructive growth pattern is present, and fibrinoid changes can be seen in the blood vessels. Coagulative necrosis and admixed apoptotic bodies and vascular occlusion are very common findings. The cytological spectrum is very broad. Cells may be small, medium-sized, large or anaplastic. The lymphoma is composed of medium-sized cells or a mixture of small and large cells. The cells often have irregularly folded nuclei which can be elongated. The chromatin is granular, except in the very large cells, which may have vesicular nuclei. Nucleoli are generally inconspicuous or small. The cytoplasm is moderate in amount and often pale to clear. Mitotic figures are easily found. The lymphoma can be accompainied by a heavy admixture of inflammatory cells (small lymphocytes, plasma cells, histiocytes and eosinophils) or florid pseudoepithelimatous hyperplasia of the overing epithelium. The regional lymph nodes and omentum are also involved. The bone marrow is not involved

Immunohistochemistry:

These lymphoid cells are positive for CD3 and CD30 (focal),
but negative for CD20, CD79a, CD4, CD8, CD5, CD56, CD23 or cyclin D1.
EBER in situ hybridization is positive.
Granzyme B is positive.

Differential diagnosis:

1. Chronic active inflammatory disease
2. Poorly differentiated adenocarcinoma
3. Peripheral T-cell lymphoma
4. Angioimmunoblastic lymphoma
5. Anaplastic large cell lymphoma
6. T-cell-rich large B cell lymphoma
7. Enteropathy-associated intestinal T-cell lymphoma(EATL)
8. Extranodal NK/T-cell lymphoma, nasal type

Diagnosis:

1. Extranodal NK/T-cell lymphoma, nasal type
2. Regional lymph nodes and omentum are involved.

Discussion:

1. Epidermiology: Nasal-type NK/T cell lymphoma is most common in Asia (eg, China, Japan, Korea, Hong Kong) and in native populations of Central and South America (eg, Peru and Mexico) , 5 to 10 percent of all non-Hodgkin lymphoma

   It is a rare disorder in the United States, Europe, South Asia, the Middle East, and Africa. Median age at presentation is 52 years; 2:1 male to female ratio
2. Pathogenesis: Poorly understood, but is related in part to infection of the tumor cells with Epstein-Barr virus (EBV). The Epstein–Barr virus-encoded small RNAs (EBERs) are small non-coding RNAs localized in the nucleus of human cells infected with Epstein–Barr virus (EBV). EBER1 and EBER2 are transcribed by the host's RNA polymerase III during latent infection of EBV. EBER expression alone can induce tumors in severe combined immunodificient mice.
3. Immunophenotype : The atypical cells in most cases express CD2, CD56, and cytoplasmic CD3, but do not express surface CD3. Most cases express cytotoxic granule proteins such as granzyme B, TIA-1, and perforin, and lack surface T cell receptor (TCR). Uncommon cases may express CD4, CD8, and/or CD7.
4. Ann Arbor Stage:

   Stage I : a single region, usually one lymph node and the surrounding area.

   Stage II : two separate regions, an affected lymph node or organ and a second affected area, and that both affected areas are confined to one side of the diaphragm

   Stage III : spread to both sides of the diaphragm, including one organ or area near the lymph nodes or the spleen.

   Stage IV: indicates diffuse or disseminated involvement of one or more extralymphatic organs, including any involvement of the liver, bone marrow, or nodular involvement of the lungs

NCCN Guidelines Version 1.2016
Extranodal NK/T-Cell Lymphoma, nasal type

NK/T-CELL LYMPHOMA PROGNOSTIC INDEX[a]

ALL PATIENTS

Serum LDH > normal
B symptoms
Lymph nodes, N1 to N3, not M1
Ann Arbor Stage IV

	Number of risk factors
Low	0
Low intermediate	1
High intermediate	2
High	3 or 4

5. NCCN guideline:

National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2016
Extranodal NK/T-Cell Lymphoma, nasal type

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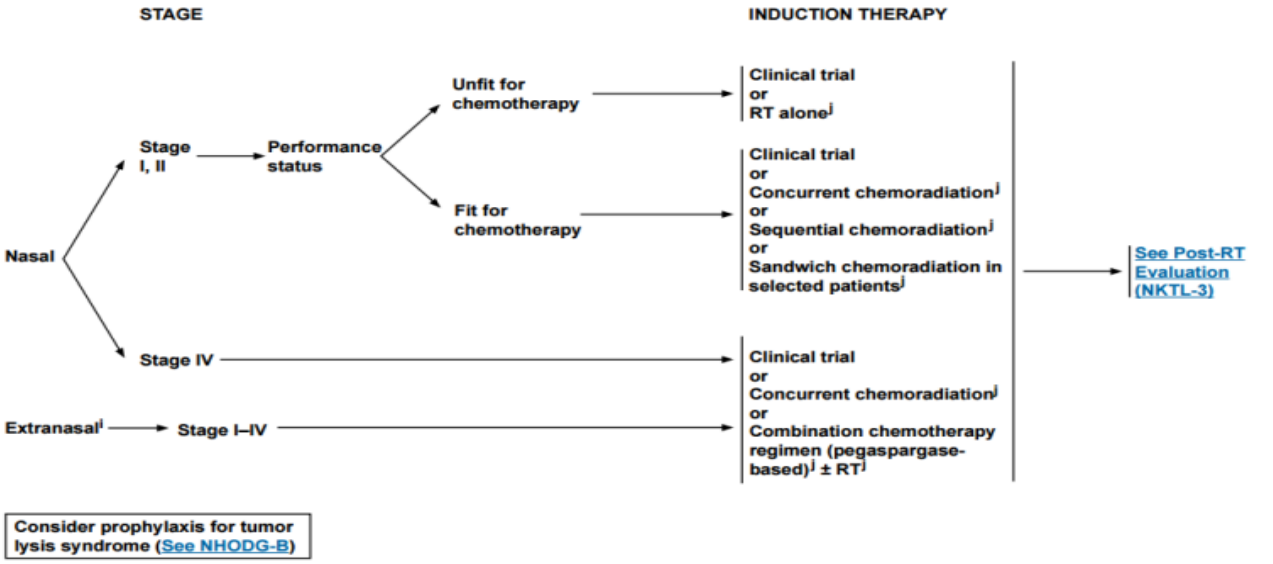

Consider prophylaxis for tumor lysis syndrome (See NHODG-B)

[i]In rare circumstances of stage I_E primary cutaneous NK/T-cell lymphoma, IFRT for solitary skin lesions can be considered.
[j]See Suggested Treatment Regimens (NKTL-B).

Note: All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2016
Extranodal NK/T-Cell Lymphoma, nasal type

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SUGGESTED TREATMENT REGIMENS[a]
(in alphabetical order)

Combination chemotherapy regimen (pegaspargase-based)
- AspaMetDex (pegaspargase, methotrexate, and dexamethasone) (Reported as a second-line regimen)
- SMILE (steroid [dexamethasone], methotrexate, ifosfamide, pegaspargase, and etoposide) x 4–6 cycles for advanced stage
- GELOX (gemcitabine, pegaspargase, and oxaliplatin)

Concurrent chemoradiation therapy (CCRT)
- CCRT (radiation 50 Gy and 3 courses of DeVIC [dexamethasone, etoposide, ifosfamide, and carboplatin])
- CCRT (radiation 40–52.8 Gy and cisplatin) followed by 3 cycles of VIPD (etoposide, ifosfamide, cisplatin, and dexamethasone)

Sequential chemoradiation
- For Stage I, II, SMILE followed by RT 45–50.4 Gy x 2–4 cycles

Sandwich chemoradiation[b]
- GELOX x 2 cycles followed by RT 56 Gy followed by GELOX x 2–4 cycles

Radiation therapy alone
- Recommended tumor dose is ≥50 Gy
  - Early or up-front RT had an essential role in improved OS and DFS in patients with localized extranodal NK/T-cell lymphoma, nasal-type, in the upper aerodigestive tract.
  - Up-front RT may yield more benefits on survival in patients with stage I disease.

[a]See references for regimens NKTL-B 2 of 2.
[b]Pegaspargase-based regimens are preferred. However, there are no data to recommend one particular regimen over another. Treatment should be individualized based on patient's tolerance and comorbidities. GELOX is an option for selected patients who cannot tolerate intense chemotherapy.

Note: All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

Reference:

1. WHO classification of Tumours of Haematopoietic and Lymphoid Tissue, 4ed. 2008, p285-288
2. Diagnostic Pathology: Lymph nodes and spleen with extranodal lymphomas, 2011, p.10:10-17
3. Hematopathology, Jaffe,Hariss,Vardiman, Campo, Arber, p475-486, 2011.
4. Extranodal natural killer/T-cell lymphoma involving the GI tract: analysis of clinical features and outcomes from the Asia Lymphoma Study Group. J Hematol Oncol,2013
5. Clinicopathologic features of intestinal natural killer/T-cell lymphoma, 2013
6. Primary intestinal NK/T cell lymphoma: a clinicopathologic study of 25 Chinese case , Arch Iran Med 2012
7. Synchronous adenocarcinoma and extranodal natural killer/T-cell lymphoma of the colon: a case report and literature review, J Gastroenterol 2013.

中華民國比較病理學會章程

第一章　總則

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

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

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

第四條　本會之任務如左：

一、　提倡比較病理學之研究與發展。

二、　舉辦學術演講會、研討會及相關訓練課程。

三、　建立國內比較醫學相關資料庫。

四、　發行比較病理學相關刊物。

五、　促進國內、外比較醫學之交流。

六、　其他有關比較病埋學術發展之事項。

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

第二章　會員

第六條　本會會員申請資格如下：

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

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

三、　贊助會員：贊助本會工作之團體或個人。

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

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

第七條　一般會員有表決權、選舉權、被選舉與罷免權，每一會員為一權。贊助會員、學生會員與榮譽會員無前項權利。

第八條　　會員有遵守本會章程、決議及繳納會費之義務。

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

第十條　　會員喪失會員資格或經會員大會決議除名者，即為出會。

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

第三章　組織及職員

第十二條　本會以會員大會為最高權力機構。

第十三條　會員大會之職權如下：

一、　訂定與變更章程。

二、　選舉及罷免理事、監事。

三、　議決入會費、常年會費、事業費及會員捐款之方式。

四、　議決年度工作計畫、報告、預算及決算。

五、　議決會員之除名處置。

六、　議決財產之處分。

七、　議決本會之解散。

八、　議決與會員權利義務有關之其他重大事項。

前項第八款重大事項之範圍由理事會訂定之。

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

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

本屆理事會得提出下屆理事及監事候選人參考名單。

第十五條　理事會之職權如下：

一、　審定會員之資格。

二、　選舉及罷免常務理事及理事長。

三、　議決理事、常務理事及理事長之辭職。

四、　聘免工作人員。

五、　擬訂年度工作計畫、報告、預算及決算。

六、　其他應執行事項。

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

理事長對內綜理監督會議，對外代表本會，並擔任會員大會、理事會主席。

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

理事長或常務理事出缺時，應於一個月內補選之。

第十七條　監事會之職權如左：

一、監察理事會工作之執行。

二、審核年度決算。
三、選舉及罷免常務監事。
四、議決監事及常務監事之辭職。
五、其他應監察事項。

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

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

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

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

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

第二十三條　本會得由理事會聘請無給顧問若干人，其聘期與理事、監事之任期同。

第四章　會議

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

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

第二十六條　會員大會之決議，以出席人數過半之同意行之。但章程之訂定與變更、會員之除名、理事及監事之罷免、財產之處置、本會之解散及其他與會權利義務有關之重大事項應有出席人數三分之二以上同意。但本會如果辦理法人登後，章程之變更應以出席人數四分之三以上之同或全體會員三分之二以上書面之同意行之。

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

會議。

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

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

第五章　經費及會計

第二十九條　本會經費來源如下：

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

二、常年會費：一般會員新台幣五佰元，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。

數位組織切片資料庫

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 Chinese Society of Comparative Pathology web site at http://www.ivp.nchu.edu.tw/cscp/

3.Choose the slide images (e.g. 63rd CSCP)

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

比較病理研討會病例分類一覽表

中華民國比較病理學會
第一次至第六十二次比較病理學研討會病例分類一覽表

分類	病例編號	會議場次	診　　斷	動物別	提　供　單　位
腫瘤	1.	1	Myxoma	Dog	美國紐約動物醫學中心
	2.	1	Chordoma	Ferret	美國紐約動物醫學中心
	3.	1	Ependymoblastoma	Human	長庚紀念醫院
	8.	2	Synovial sarcoma	Pigeon	美國紐約動物醫學中心
	18.	3	Malignant lymphoma	Human	長庚紀念醫院
	19.	3	Malignant lymphoma	Wistar rat	國家實驗動物繁殖及研究中心
	24.	3	Metastatic thyroid carcinoma	Human	省立新竹醫院
	25.	3	Chordoma	Human	新光吳火獅紀念醫院
	34.	4	Interstitial cell tumor	Dog	中興大學獸醫學系
	35.	4	Carcinoid tumor	Human	長庚紀念醫院
	36.	4	Hepatic carcinoid	Siamese cat	美國紐約動物醫學中心
	38.	6	Pheochromocytoma	Ferret	美國紐約動物醫學中心
	39.	6	Extra adrenal pheochromocytoma	Human	新光吳火獅紀念醫院
	40.	6	Mammary gland fibroadenoma	Rat	國家實驗動物繁殖及研究中心
	41.	6	Fibroadenoma	Human	省立豐原醫院
	42.	6	Canine benign mixed type mammary gland tumor	Pointer bitch	中興大學獸醫學系
	43.	6	Phyllodes tumor	Human	台中榮民總醫院
	44.	6	Canine oral papilloma	Dog	台灣大學獸醫學系
	45.	6	Squamous cell papilloma	Human	中國醫藥學院
	47.	7	1. Lung: metastatic carcinoma associated with cryptococcal infection. 2. Liver: metastatic carcinoma. 3. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院
	56.	8	Gastrointestinal stromal tumor	Human	台中榮民總醫院
	59.	8	Colonic adenocarcinoma	Dog	美國紐約動物醫學中心
	62.	8	Submucosal leiomyoma of stomach	Human	頭份為恭紀念醫院
	64.	8	1. Adenocarcinoma of sigmoid colon 2. Old schistosomiasis of rectum	Human	省立新竹醫院

腫瘤	71.	9	Myelolipoma	Human	台北耕莘醫院
	72.	9	Reticulum cell sarcoma	Mouse	國家實驗動物繁殖及研究中心
	73.	9	Hepatocellular carcinoma	Human	新光吳火獅紀念醫院
	74.	9	Hepatocellular carcinoma induced by aflatoxin B1	Wistar strain rats	台灣省農業藥物毒物試驗所
	81.	10	Angiomyolipoma	Human	羅東博愛醫院
	82.	10	Inverted papilloma of prostatic urethra	Human	省立新竹醫院
	84.	10	Nephrogenic adenoma	Human	國泰醫院
	86.	10	Multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院
	87.	10	Squamous cell carcinoma of renal pelvis and calyces with extension to the ureter	Human	台北病理中心
	88.	10	Fibroepithelial polyp of the ureter	Human	台北耕莘醫院
	90.	10	Clear cell sarcoma of kidney	Human	台北醫學院
	93.	11	Mammary gland adenocarcinoma, complex type , with chondromucinous differentiation	Dog	台灣大學獸醫學系
	94.	11	1. Breast, left, modified radical mastectomy, showing papillary carcinoma, invasive 2. Nipple, left, modified radical mastectomy, papillary carcinoma, invasive 3. Lymph node, axillary, left, lymphadenectomy, palillary carcinoma, metaststic	Human	羅東聖母醫院
	95.	11	Transmissible venereal tumor	Dog	中興大學獸醫學系
	96.	11	Malignant lymphoma, large cell type, diffuse, B-cell phenotype	Human	彰化基督教醫院
	97.	11	Carcinosarcomas	Tiger	台灣養豬科學研究所
	98.	11	Mucinous carcinoma with intraductal carcinoma	Human	省立豐原醫院
	99.	11	Mammary gland adenocarcinoma, type B, with pulmonary metastasis, BALB/cBYJ mouse	Mouse	國家實驗動物繁殖及研究中心
	100.	11	Malignant fibrous histiocytoma and paraffinoma	Human	中國醫藥學院
	102.	11	Pleomorphic adenoma (benign mixed tumor)	Human	佛教慈濟綜合醫院
腫瘤	103.	13	Atypical central neurocytoma	Human	新光吳火獅紀念醫院
	104.	13	Cardiac schwannoma	SD rat	國家實驗動物繁殖及研究中心
	109.	13	Desmoplastic infantile ganglioglioma	Human	高雄醫學院
	107.	13	1.Primary cerebral malignant lymphoma 2.Acquired immune deficiency syndrome	Human	台北市立仁愛醫院

腫瘤	111.	13	Schwannoma	Human	三軍總醫院
	114.	13	Osteosarcoma	Dog	美國紐約 動物醫學中心
	115.	14	Mixed germ-cell stromal tumor, mixed sertoli cell and seminoma-like cell tumor	Dog	美國紐約 動物醫學中心
	116.	14	Krukenberg's Tumor	Human	台北病理中心
	117.	14	Primary insular carcinoid tumor arising from cystic teratoma of ovary.	Human	花蓮慈濟綜合醫院
	119.	14	Polypoid adenomyoma	Human	大甲李綜合醫院
	120.	14	Gonadal stromal tumor	Human	耕莘醫院
	122.	14	Gestational choriocarcinoma	Human	彰化基督教醫院
	123.	14	Ovarian granulosa cell tumor	Horse	中興大學獸醫學系
	129.	15	Kaposi's sarcoma	Human	華濟醫院
	131.	15	Basal cell carcinoma (BCC)	Human	羅東聖母醫院
	132.	15	Transmissible venereal tumor	Dog	臺灣大學獸醫學系
	137	17	Canine Glioblastoma Multiforme in Cerebellopontine Angle	Dog	中興大學 獸醫病理研究所
	143	18	Osteosarcoma associated with metallic implants	Dog	紐約動物醫學中心
	144	18	Radiation-induced osteogenic sarcoma	Human	花蓮慈濟綜合醫院
	145	18	Osteosarcoma, osteogenic	Dog	臺灣大學獸醫學系
	146	18	Pleomorphic rhabdomyosarcoma	Human	行政院衛生署 新竹醫院
	147	18	Papillary Mesothelioma of pericardium	Leopard	屏東科大學獸醫學系
	148	18	Cystic ameloblastoma	Human	台北醫學院
	149	18	Giant cell tumor of bone	Canine	中興大學獸醫學院
	150	18	Desmoplastic small round cell tumor (DSRCT)	Human	華濟醫院
	152	18	Hepatocellular carcinoma	Human	羅東聖母醫院
	158	20	Hemangiopericytoma	Human	羅東聖母醫院
	160	20	Cardiac fibroma	Human	高雄醫學大學 病理學科
	166	21	Nephroblastoma	Rabbit	紐約動物醫學中心
	168	21	Nephroblastoma	Pig	台灣動物科技研究所
	169	21	Nephroblastoma with rhabdomyoblastic differentiation	Human	高雄醫學大學病理科
	172	21	Spindle cell sarcoma	Human	羅東聖母醫院
	174	21	Juxtaglomerular cell tumor	Human	新光醫院病理檢驗科
	190	27	Angiosarcoma	Human	高雄醫學大學 病理學科
	192	27	Cardiac myxoma	Human	彰化基督教醫院 病理科
	194	27	Kasabach-Merrit syndrome	Human	慈濟醫院病理科
	195	27	Metastatic hepatocellular carcinoma, right atrium	Human	新光醫院病理科
	197	27	Papillary fibroelastoma of aortic valve	Human	新光醫院病理科

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

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

腫瘤	304	43	Multiple sarcoma	Canine	臺灣大學 獸醫專業學院
	306	44	Malignant solitary fibrous tumor of pleura	Human	佛教慈濟綜合醫院暨 慈濟大學
	307	44	Ectopic thymic carcinoma	Human	彰濱秀傳紀念醫院 病理科
	308	44	Medullary carcinoma of the right lobe of thyroid	Human	彰化基督教醫院病 理科
	309	44	Thyroid carcinosarcoma with cartilage and osteoid formation	Canine	臺灣大學 獸醫專業學院
	312	44	Lymphocytic leukemia/lymphoma	Koala	臺灣大學 獸醫專業學院
	313	45	Neuroendocrine carcinoma of liver	Human	佛教慈濟綜合醫院暨 慈濟大學
	314	45	Parachordoma	Human	羅東博愛醫院病理科
	315	45	Carcinoma expleomorphic adenoma, submandibular gland	Human	天主教耕莘醫院 病理科
	316	45	Melanoma, tongue	Canine	國立臺灣大學 獸醫專業學院
	317	45	Renal cell carcinoma, papillary type	Canine	國立臺灣大學 獸醫專業學院
	323	46	Metastatic papillary serous cystadenocarcinoma, abdomen	Human	國軍桃園總醫院
	324	46	Malignant gastrointestinal stromal tumor	Human	天主教耕莘醫院
	329	47	Sclerosing stromal tumor	Human	彰化基督教醫院
	330	47	Pheochromocytoma	Human	天主教耕莘醫院
	334	48	Metastatic infiltrating ductal carcinoma, liver	Human	佛教慈濟綜合醫院
	335	48	Adenoid cystic carcinoma, grade II, Rt breast	Human	天主教耕莘醫院
	336	48	Malignant lymphoma, diffuse, large B-cell, right neck	Human	林新醫院
	337	48	Pulmonary carcinoma, multicentric	Dog	國立臺灣大學 獸醫專業學院
	338	48	Malignant melanoma, multiple organs metastasis	Rabbit	國立中興大學 獸醫學院
	340	49	Mucinous-producing urothelial-type adenocarcinoma of prostate	Human	天主教耕莘醫院
	342	49	Plexiform fibromyxoma	Human	彰化基督教醫院
	343	49	Malignant epithelioid trophoblastic tumor	Human	佛教慈濟綜合醫院
	344	49	Epithelioid sarcoma	Human	林新醫院
	346	49	Transmissible venereal tumor	Dog	國立臺灣大學 獸醫專業學院
	347	50	Ewing's sarcoma (PNET/ES tumor)	Human	天主教耕莘醫院 病理科

腫瘤	348	50	Malignant peripheral nerve sheath tumor, epithelioid type	Human	林新醫院病理科
	349	50	Low grade fibromyxoid sarcoma	Human	高雄醫學大學附設中和紀念醫院病理科
	351	50	Orbital embryonal rhabdomyosarcoma	Dog	Gifu University, Japan (岐阜大学)
	354	50	Granular cell tumor	Dog	國立臺灣大學獸醫專業學院
	356	50	Malignant neoplasm of unknown origin, cerebrum	Dog	國立臺灣大學獸醫專業學院
	357	51	Small cell Carcinoma, Urinary bladder	Human	天主教耕莘醫院
	364	51	Perivascular epithelioid cell tumor, in favor of lymphangiomyomatosi	Human	高雄醫學大學附設中和紀念醫院病理科
	365	52	Angiosarcoma, skin (mastectomy)	Human	天主教耕莘醫院病理科
	366	52	Rhabdomyoma (Purkinjeoma), heart	Swine	屏東縣家畜疾病防治所
	368	52	Langerhans cell sarcoma, lung	Human	高雄醫學大學附設中和紀念醫院病理科
	369	52	Biliary cystadenocarcinoma, liver	Camel	國立屏東科技大學獸醫教學醫院病理科
	371	52	Malignant melanoma, nasal cavity	Human	羅東博愛醫院病理科
	373	53	Malignant giant cell tumor of tendon sheath	Human	天主教耕莘醫院病理科
	376	53	Malignant mesothelioma of tunica vaginalis	Golden hamster	中興大學獸醫病理生物學研究所
	377	53	Perivascular Epithelioid Cell Tumor (PEComa) of the uterus	Human	彰化基督教醫院病理部
	378	53	Medullary carcinoma	Human	高雄醫學大學病理部
	389	55	Mantle cell lymphoma involving ascending colon, cecum, ileum, appendix and regional lymph nodes with hemorrhagic necrosis in the colon and leukemic change.	Human	奇美醫院病理部
	390	55	Pulmonary Squamous Cells Carcinoma of a Canine	Dog	國立屏東科技大學獸醫教學醫院病理科
	391	55	Squamous cell carcinoma, lymphoepithelioma-like type	Human	高醫附設醫院病理科
	393	55	Malignant peripheral nerve sheath tumor (MPNST), subcutis, canine.	Dog	中興大學獸醫學系
	394	55	Desmoplastic malignant melanoma (mimic malignant peripheral nerve sheath tumor)	Human	中山醫學大學醫學系病理學科暨附設醫院病理科
	397	56	Atypical meningioma	Human	奇美醫院病理科
	401	57	Lymph nodes, excision - Hodgkin's	Human	天主教耕莘醫院

			lymphoma, mixed cellularity		
	402	57	1. Leukemia, nonlymphoid, granulocytic, involving bone marrow, spleen, liver, heart, lungs, lymph nodes, kidney, hardian gland, duodenum and pancreas. 2. Pinworm infestation, moderate, large intestines. 3. Fibrosis, focal, myocardium.	Mouse	國家實驗動物中心
腫瘤	403	57	Non-secretory multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	404	57	1. Hepatocellular adenocarcinoma, multifocal, severe, liver 2. Hemorrhage, moderate, acute, body cavity 3. Bumble foot, focal, mild, chronic, food pad 4. cyst and atherosclerosis, chronic, testis	Goose	國立中興大學獸醫病理生物學研究所
	406	57	Castleman's disease	Human	羅東博愛醫院
	407	58	Hepatoid adenocarcinoma of colon with multiple liver metastases	Human	羅東博愛醫院
	408	58	Cardiac and pulmonary melanoma	Pig	國立中興大學獸醫病理生物學研究所
	409	58	Double Tumors: (1) small cell carcinoma of lung (2) Hodgkin's lymphoma, mixed cellularity type. Acrokeratosis paraneoplastica	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	410	58	Von Hippel–Lindau disease	Human	奇美醫院病理部
	411	58	Multiple neoplasia	Tiger	國立屏東科技大學獸醫教學醫院病理科
	412	58	Hepatocellular carcinoma and multiple myeloma	Human	中山醫學大學醫學系病理學科暨附設醫院病理科
	413	59	DEN plus AAF carcinogens induced hepatic tumor in male rats	Rat	中興大學獸醫病理生物學研究所
	417	59	Alveolar soft part sarcoma	Human	高雄醫學大學附設中和紀念醫院病理科
	418	60	Seminoma associated with supernumerary testicles	Human	羅東博愛醫院
	422	61	Retinoblastoma in a baby girl	Human	彰化基督教醫院
	423	61	Colloid goiter in a female Radiated tortoise (*Astrochelys radiata*)	Tortoise	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	424	61	Lymphoepithelial carcinoma in a women	Human	羅東博愛醫院
	425	61	Histiocytic sarcoma in a SJL/J mouse	mouse	國家實驗動物中心
	428	62	Maligant lymphoma, diffuse large B-cell (DLBCL) in a women	Human	國軍桃園總醫院病理檢驗部

	429	62	Immune reconstitution inflammatory syndrome (IRIS)-associated Kaposi's sarcoma in a man	Human	花蓮慈濟醫院
	430	62	Mammary adenocarcinoma, tubular form in a female feline	Cat	中興大學獸醫病理生物學研究所
	433	62	Rhabdomyosarcoma, retroperitoneal cavity in a female mouse	Mouse	國家實驗動物中心
	434	62	Malignant pheochromocytoma with pleural metastasis in a man	Human	天主教聖馬爾定醫院病理科
	436	63	Primary non-Hodgkins lymphoma of terminal ileum	Human	國軍桃園總醫院病理檢驗部
	438	63	Ectopic thyroid gland tumor	Beagle	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	440	63	Hepatocellular cell carcinoma Squamous cell carcinoma	Human	天主教聖馬爾定醫院口腔顎面外科
	442	64	Large B cell lymphoma in a man	Human	羅東博愛醫院
	444	64	Olfactory neuroblastoma in a female cat	Cat	台灣大學獸醫專業學院分子暨比較病理生物學研究所
	445	64	Oligodendroglioma in a man	Human	國軍桃園總醫院病理檢驗部
	447	64	Ameloblastoma of mandible in a man	Human	天主教聖馬爾定醫院口腔顎面外科
細菌	6.	1	Tuberculosis	Monkey	臺灣大學獸醫學系
	7.	1	Tuberculosis	Human	省立新竹醫院
	12.	2	H. pylori-induced gastritis	Human	台北病理中心
	13.	2	Pseudomembranous colitis	Human	省立新竹醫院
	26.	3	Swine salmonellosis	Pig	中興大學獸醫學系
	27.	3	Vegetative valvular endocarditis	Pig	台灣養豬科學研究所
	28.	4	Nocardiosis	Human	台灣省立新竹醫院
	29.	4	Nocardiosis	Largemouth bass	屏東縣家畜疾病防治所
	32.	4	Actinomycosis	Human	台灣省立豐原醫院
	33.	4	Tuberculosis	Human	苗栗頭份為恭紀念醫院
	53.	7	Intracavitary aspergilloma and cavitary tuberculosis, lung.	Human	羅東聖母醫院
	54.	7	Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM.	Human	林口長庚紀念醫院
	58.	7	Tuberculous enteritis with perforation	Human	佛教慈濟綜合醫院
	61.	8	Spirochetosis	Goose	國立嘉義農專獸醫科
	63.	8	Proliferative enteritis (*Lawsonia*	Porcine	屏東縣家畜疾病

		intracellularis infection)		防治所
68.	9	Liver abscess (Klebsillae pneumoniae)	Human	台北醫學院
77.	10	Xanthogranulomatous inflammation with nephrolithiasis, kidney, right. Ureteral stone, right.	Human	羅東聖母醫院
79.	10	Emphysematous pyelonephritis	Human	彰化基督教醫院
89.	10	Severe visceral gout due to kidney damaged Infectious serositis	Goose	中興大學獸醫學系
108.	13	Listeric encephalitis	Lamb	屏東縣家畜疾病防治所
113.	13	Tuberculous meningitis	Human	羅東聖母醫院
134.	16	Swine salmonellosis with meningitis	Swine	中興大學獸醫學系
135.	16	Meningoencephalitis, fibrinopurulent and lymphocytic, diffuse, subacute, moderate, cerebrum, cerebellum and brain stem, caused by Streptococcus spp. infection	Swine	國家實驗動物繁殖及研究中心
140	17	Coliform septicemia of newborn calf	Calf	屏東縣家畜疾病防治所
161	20	Porcine polyserositis and arthritis (Glasser's disease)	Pig	中興大學獸醫學院
162	20	Mycotic aneurysm of jejunal artery secondary to infective endocarditis	Human	慈濟醫院病理科
170	21	Chronic nephritis caused by Leptospira spp	Pig	中興大學獸醫學院
173	21	Ureteropyelitis and cystitis	Pig	中國化學製藥公司
254	36	Pulmonary actinomycosis.	Human	耕莘醫院病理科
259	37	Tuberculous peritonitis	Human	彰化基督教醫院病理科
260	38	Septicemic salmonellosis	Piglet	屏東科技大學獸醫系
261	38	Leptospirosis	Human	慈濟醫院病理科
267	39	Mycobacteriosis	Soft turtles	屏東科技大學獸醫系
290	42	*Staphylococcus* spp. infection	Formosa Macaque	中興大學獸醫病理學研究所
291	42	Leptospirosis	Dog	台灣大學獸醫學系
296	43	Leptospirosis	Human	花蓮慈濟醫院
305	43	Cryptococcus and Tuberculosis	Human	彰濱秀傳紀念醫院
319	46	Placentitis, Coxiella burnetii	Goat	台灣動物科技研究所
321	46	Pneumonia, Buirkholderia pseudomallei	Goat	屏東縣家畜疾病防治所
339	48	Mycoplasmosis	Rat	國家實驗動物中心
352	50	Chromobacterium violaceum Septicemia	Gibbon	Bogor Agricultural University, Indonesia
353	50	Salmonellosis	Pig	國立中興大學獸醫學院
367	52	Melioidosis (Burkholderia pseudomallei), lung	Human	花蓮慈濟醫院

細菌

	370	52	Suppurative bronchopneumonia (*Bordetellae trematum)* with *Trichosomoides crassicauda* infestation	Rat	國立中興大學 獸醫學院
	374	53	Pulmonary coccidiodomycosis	Human	彰化基督教醫院
	375	53	Paratuberculosis in Macaca cyclopis	Macaca cyclopis	國立屏東科技大學 獸醫學院
	379	53	Bovine Johne's disease (BJD) or paratuberculosis of cattle	Dairy cow	屏東縣家畜疾病 防治所
	380	53	NTB, Mycobacterium abscessus	Human	佛教慈濟綜合醫院暨 慈濟大學病理科
	382	54	Leptospirosis	Pig	國立屏東科技大學 獸醫學院
	384	54	Neisseria Infected Pneumonitis	Cat	中興大學獸醫學系
	385	54	Mycobacteria avian complex dacryocyctitis	Human	花蓮佛教慈濟綜合醫 院
	387	54	Swine Erysipelas	Pig	屏東縣家畜疾病防治 所
	396	56	Suppurative meningitis caused by Streptococcus spp in pigs	Pig	國立中興大學獸醫病 理生物學研究所
	399	56	Listeric encephalitis in dairy goats	Goat	屏東縣家畜疾病防治 所
	435	63	Tuberculosis	Human	花蓮佛教慈濟綜合醫 院
	438	63	Porcine proliferative enteritis (PPE)	Pig	國立中興大學獸醫病 理生物學研究所
	446	64	Actinomycosis (lumpy jaw) in a dairy cattle	Cattle	國立中興大學獸醫病 理生物學研究所
病毒	21.	3	Newcastle disease	Chicken	台灣大學獸醫學系
	22.	3	Herpesvirus infection	Goldfish	台灣大學獸醫學系
	30.	4	Demyelinating canine distemper encephalitis	Dog	台灣養豬科學研究所
	31.	4	Adenovirus infection	Malayan sun bears	台灣大學獸醫學系
	50.	7	Porcine cytomegalovirus infection	Piglet	台灣省家畜衛生 試驗所
	55.	7	Infectious laryngo-tracheitis (Herpesvirus infection)	Broilers	國立屏東技術學院獸 醫學系
	69.	9	Pseudorabies (Herpesvirus infection)	Pig	台灣養豬科學研究所
	78.	10	Marek's disease in native chicken	Chicken	屏東縣家畜疾病 防治所
	92.	11	Foot- and- mouth disease (FMD)	Pig	屏東縣家畜疾病 防治所
	101.	11	Swine pox	Pig	屏東科技大學 獸醫學系
	110.	13	Pseduorabies	Piglet	國立屏東科技大學

	112.	13	Avian encephalomyelitis	Chicken	國立中興大學
	128.	15	Contagious pustular dermatitis	Goat	屏東縣&台東縣家畜疾病防治所
	130.	15	Fowl pox and Marek's disease	Chicken	中興大學獸醫學系
	133.	16	Japanese encephalitis	Human	花蓮佛教慈濟綜合醫院
	136	17	Viral encephalitis, polymavirus infection	Lory	美國紐約 動物醫學中心
	138	17	1. Aspergillus spp. encephalitis and myocarditis 2. Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
	153	19	Enterovirus 71 infection	Human	彰化基督教醫院
	154	19	Ebola virus infection	African Green monkey	行政院國家科學委員會實驗動物中心
	155	19	Rabies	Longhorn Steer	台灣大學獸醫學系
	163	20	Parvoviral myocarditis	Goose	屏東科技大學 獸醫學系
	199	28	SARS	Human	台大醫院病理科
	200	28	TGE virus	swine	臺灣動物科技研究所
	201	28	Feline infectious peritonitis(FIP)	Feline	台灣大學獸醫學系
	209	30	Chicken Infectious Anemia (CIA)	Layer	屏東防治所
病毒	219	31	1. Lymph node:Lymphdenitis, with lymphocytic depletion and intrahistiocytic basophilic cytoplasmic inclusion bodies. Etiology consistent with Porcine Circovirus (PCV)infection. 2. Lung: Bronchointerstitial pneumonia, moderate, lymphoplasmacytic, subacute.	Pig	臺灣動物科技研究所
	220	31	Cytomegalovirus colitis	Human	彰化基督教醫院 病理科
	221	31	Canine distemper virus Canine adenovirus type ll co-infection	Canine	國家實驗動物 繁殖及研究中心
	223	32	1. Skin, mucocutaneous junction (lip): Cheilitis, subacute, diffuse, sever, with epidermal pustules, ballooning degeneration, proliferation, and eosinophilic intracytoplasmic inclusion bodies, Saanen goat. 2. Haired skin: Dermatitis, proliferative, 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	35	Hydranencephaly	Cattle	國立屏東科技大學

					獸醫學系
	248	36	Porcine Cytomegalovirus (PCMV) infection	Swine	國立屏東科技大學 獸醫學系
	250	36	Porcine respiratory disease complex (PRDC) and polyserositis, caused by co-infection with pseudorabies (PR) virus, porcine circovirus type 2 (PCV 2), porcine reproductive and respiratory syndrome (PRRS) virus and *Salmonella typhimurium*.	Swine	屏東縣家畜疾病防所
病毒	255	37	Vaccine-induced canine distemper	gray foxes	國立台灣大學 獸醫學系
	265	39	Bronchointerstitial pneumonia (PCV II infection)	Swine	台灣大學獸醫學系
	295	42	Feline infectious peritonitis (FIP)	Cat	中興大學獸醫病理所
	362	51	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
	381	54	Polyomavirus infection of urinary tract	Human	羅東博愛醫院
	405	57	Porcine circovirus-associated lymphadenitis	Swine	國立屏東科技大學 獸醫教學醫院病理科
	414	59	Rabies virus infection	Human	佛教慈濟綜合醫院暨 慈濟大學病理科
	415	59	Canine distemper virus infection	Dog	台灣大學 獸醫專業學院 分子暨比較病理生物學研究所
	420	60	Respiratory syncytial virus infection	Human	佛教慈濟綜合醫院暨 慈濟大學病理科
	421	60	Porcine epidemic diarrhea (PED)	Piglet	國立中興大學獸醫病理生物學研究所
黴菌	23.	3	Chromomycosis	Human	台北病理中心
	47.	7	Lung: metastatic carcinoma associated with cryptococcal infection. Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary)	Human	三軍總醫院
	48.	7	Adiaspiromycosis	Wild rodents	台灣大學獸醫學系
	52.	7	Aspergillosis	Goslings	屏東縣家畜疾病 防治所
	53.	7	Intracavitary aspergilloma and cavitary tuberculosis, lung.	Human	羅東聖母醫院
	54.	7	Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM.	Human	林口長庚紀念醫院
	105.	13	Mucormycosis Diabetes mellitus	Human	花蓮佛教慈濟綜合醫院
	127.	15	Eumycotic mycetoma	Human	花蓮佛教慈濟綜合醫

					院
	138	17	1. Aspergillus spp. encephalitis and myocarditis 2. Demyelinating canine distemper encephalitis	Dog	台灣大學獸醫學系
黴菌	298	43	Systemic Candidiasis	Tortoise	中興大學獸醫學院
	318	45	Alfatoxicosis in dogs	Canine	國立臺灣大學 獸醫專業學院
	322	46	Allergic fungal sinusitis	Human	羅東博愛醫院
	326	46	Meningoencephalitis, Aspergillus flavus	Cat	國立臺灣大學 獸醫專業學院
	331	47	Histoplasmosis	Human	花蓮慈濟醫院病理科
	332	47	Pulmonary Blastomycosis	Rat	中興大學獸醫學院
	355	50	Encephalitozoonosis	Rabbit	國立中興大學 獸醫學院
	356	50	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學 獸醫專業學院
	386	54	Dermatophytic pseudomycetoma	Cat	台灣動物科技研究所
	395	56	Systemic Cryptococcus neoformans infection in a Golden Retriever	Dog	國立台灣大學分子暨比較病理生物學研究所
	441	63	Protothecosis	Dog	國家實驗動物繁殖及研究中心
寄生蟲	14.	2	Dirofilariasis	Dog	台灣省家畜衛生試驗所
	15.	2	Pulmonary dirofilariasis	Human	台北榮民總醫院
	20.	3	Sparganosis	Human	台北榮民總醫院
	46.	7	Feline dirofilariasis	Cat	美國紐約動物醫學中心
	49.	7	Echinococcosis	Human	台北榮民總醫院
	60.	8	Intestinal capillariasis	Human	台北馬偕醫院
	64.	8	Adenocarcinoma of sigmoid colon Old schistosomiasis of rectum	Human	省立新竹醫院
	66.	8	Echinococcosis	Chapman's zebra	台灣大學獸醫學系
	67.	9	Hepatic ascariasis and cholelithiasis	Human	彰化基督教醫院
	106.	13	Parasitic meningoencephalitis, caused by Toxocara canis larvae migration	Dog	臺灣養豬科學研究所
	139	17	Disseminated strongyloidiasis	Human	花蓮佛教慈濟綜合醫院
	141	17	Eosinophilic meningitis caused by Angiostrongylus cantonensis	Human	台北榮民總醫院 病理檢驗部
	156	19	Parastrongylus cantonensis infection	Formosan gem-faced civet	中興大學獸醫學院

寄生蟲	157	19	Capillaria hepatica, Angiostongylus cantonensis	Norway Rat	行政院農業委員會 農業藥物毒物試驗所
	202	29	Colnorchiasis	Human	高雄醫學院附設醫院
	203	29	Trichuriasis	Human	彰化基督教醫院
	204	29	Psoroptes cuniculi infection (Ear mite)	Rabbit	農業藥物毒物試驗所
	205	29	Pulmonary dirofilariasis	Human	和信治癌中心醫院
	206	29	Capillaries philippinesis	Human	和信治癌中心醫院
	207	29	Adenocarcinoma with schistosomiasis	Human	花蓮佛教慈濟綜合醫院
	286	41	Etiology- consistent with *Spironucleus* (*Hexamita*) *muris*	Rat	國家實驗動物繁殖及研究中心
	327	46	Dermatitis, mange infestation	Serow	中興大學獸醫學院
	328	46	Trichosomoides crassicauda, urinary bladder	Rat	國家實驗動物中心
	362	51	Canine distemper virus infection combined pulmonary dirofilariasis	Dog	國家實驗研究院
	370	52	Suppurative bronchopneumonia (*Bordetellae trematum)* with *Trichosomoides crassicauda* infestation	Rat	國立中興大學 獸醫學院
	416	59	Toxoplasmosis in a finless porpoise	Finless porpoise	國立屏東科技大學獸醫教學醫院病理科
		63	Liver milk spots in pig	Pig	中興大學獸醫病理生物學研究所
原蟲	4.	1	Cryptosporidiosis	Goat	台灣養豬科學研究所
	15.	2	Amoebiasis	Lemur fulvus	台灣養豬科學研究所
	16.	2	Toxoplasmosis	Squirrel	台灣養豬科學研究所
	17.	2	Toxoplasmosis	Pig	屏東技術學院 獸醫學系
	51.	7	Pneumocystis carinii pneumonia	Human	台北病理中心
	57.	8	Cecal coccidiosis	Chicken	中興大學獸醫學系
	65.	8	Cryptosporidiosis	Carprine	台灣養豬科學研究所
	211	30	Avian malaria, African black-footed penguin	Avian	臺灣動物科技研究所
	242	35	Neosporosis	Cow	國立屏東科技大學 獸醫學系
	263	38	Intestinal amebiasis	Human	彰化基督教醫院 病理科
	320	46	Cutaneous leishmaniasis	Human	佛教慈濟綜合醫院
	325	46	Myocarditis/encephalitis, Toxoplasma gondii	Wallaby	國立臺灣大學 獸醫專業學院
	443	65	Brain toxoplasmosis in a man	Human	佛教慈濟綜合醫院病理科
立克次	229	32	Necrotizing inflammation due to scrub typhus	Human	佛教慈濟醫院病理科
	251	36	Scrub typhus with diffuse alveolar damage	Human	佛教慈濟醫院病理科

體			in bilateral lungs.		
皮膚	216	30	Cytophagic histiocytic panniculitis with terminal hemophagocytic syndrome	Human	佛教慈濟綜合醫院病理科
	359	51	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學 獸醫專業學院
	360	51	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
其它	9.	2	Perinephric pseudocyst	Cat	台灣大學獸醫學系
	10.	2	Choledochocyst	Human	長庚紀念醫院
	11.	2	Bile duct ligation	Rat	中興大學獸醫學系
	37.	4	Myositis ossificans	Human	台北醫學院
	75.	9	Acute yellow phosphorus intoxication	Rabbits	中興大學獸醫學系
	76.	10	Polycystic kidney bilateral and renal failure	Cat	美國紐約 動物醫學中心
	80.	10	Glomerular sclerosis and hyalinosis, segmental, focal, chronic, moderate Benign hypertension	SHR rat	國防醫學院 & 國家實驗動物繁殖及研究中心
	83.	10	Phagolysosome-overload nephropathy	SD rats	國家實驗動物 繁殖及研究中心
	85.	10	Renal amyloidosis	Dog	台灣養豬科學研究所
	89.	10	Severe visceral gout due to kidney damaged infectious serositis	Goose	中興大學獸醫學系
	91.	10	Hypervitaminosis D	Orange-rumped agoutis	台灣大學獸醫學系
	118.	14	Cystic endometrical hyperplasia	Dog	臺灣養豬科學研究所
	121.	14	Cystic subsurface epithelial structure (SES)	Dog	國科會實驗動物中心
	124.	15	Superficial necrolytic dermatitis	Dog	美國紐約 動物醫學中心
	125.	15	Solitary congenital self-healing histiocytosis	Human	羅東博愛醫院
	126.	15	Alopecia areata	Mouse	國家實驗動物 繁殖及研究中心
	142	17	Avian encephalomalacia (Vitamin E deficiency)	Chicken	國立屏東科技大學 獸醫學系
	151	18	Osteodystrophia fibrosa	Goat	台灣養豬科學研究所 &台東縣家畜疾病防治所
	159	20	Hypertrophic cardiomyopathy	Pig	台灣大學獸醫學系
其它	165	21	Chinese herb nephropathy	Human	三軍總醫院 病理部及腎臟科
	167	21	Acute pancreatitis with rhabdomyolysis	Human	慈濟醫院病理科
	171	21	Malakoplakia	Human	彰化基督教醫院
	183	25	Darier’s disease	Human	高雄醫學大學病理科
	191	27	1. Polyarteritis nodosa	Feline	台灣大學獸醫學系

			2. Hypertrophic Cardiomyopathy		
	193	27	Norepinephrin cardiotoxicity	Cat	台中榮總
	196	27	Cardiomyopathy (Experimental)	Mice	綠色四季
	212	30	Kikuchi disease (histiocytic necrotizing lymphandenitis)	Lymphandenitis	耕莘醫院病理科
	225	32	Calcinosis circumscripta, soft tissue of the right thigh, dog	Dog	台灣大學獸醫所
	230	34	Hemochromatosis, liver, bird	Bird	台灣大學獸醫學系
	234	34	Congenital hyperplastic goiter	Holstein calves	屏東縣家畜疾病防治所
	236	34	Hepatic lipidosis (fatty liver)	Rats	中興大學獸醫學病理學研究所
	237	35	Arteriovenous malformation (AVM) of cerebrum	Human	耕莘醫院病理科
	244	35	Organophosphate induced delayed neurotoxicity in hens	Hens	中興大學獸醫學病理學研究所
	257	37	Severe lung fibrosis after chemotherapy in a child with Ataxia- Telangiectasia	Human	慈濟醫院病理科
	294	42	Arteriovenous malformation of the left hindlimb	Dog	台灣大學獸醫學系
	299	43	Polioencephalomalacia	Goat kid	屏東家畜疾病防治所
	310	44	Hyperplastic goiter	Piglet	屏東家畜疾病防治所
	311	44	Melamine and cyanuric acid contaminated pet food induced nephrotoxicity	Rat	中興大學獸醫學病理學研究所
	318	45	Alfatoxicosis	Canine	國立臺灣大學獸醫專業學院
	333	47	Lordosis, C6 to C11	Penguin	國立臺灣大學獸醫專業學院
	341	49	Pulmonary placental transmogrification	Human	羅東博愛醫院
	345	49	Acute carbofuran intoxication	Jacana	國立中興大學獸醫學院
	350	50	Malakoplakia, liver	Human	慈濟綜合醫院暨慈濟大學
	351	50	Eosionphilic granuloma, Right suboccipital epidural mass	Human	羅東博愛醫院病理科
	359	51	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學獸醫專業學院
	360	51	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟大學
	361	51	Hepatotoxicity of SMA-AgNPs	Mouse	國立中興大學獸醫病理生物學研究所
	363	51	Hypertrophy osteopathy	Cat	國立臺灣大學獸醫專業學院
其他	372	52	Snake bite suspected, skin and spleen	Monkey (red guenon)	國立臺灣大學獸醫專業學院
	383	54	Langerhans cell histiocytosis	Human	聖馬爾定醫院病理科

	388	54	Canine protothecosis	Dog	國立臺灣大學 獸醫專業學院
	392	55	Lithium nephrotoxicity	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	398	56	Gamma-knife-radiosurgery-related demyelination	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	400	56	Canine Disseminated form Granulomatous Meningoencephalitis (GME)	Dog	國立屏東科技大學獸醫教學醫院病理科
	419	60	Mucopolysaccharidosis	Cat	國立中興大學獸醫病理生物學研究所
	426	61	Phleboliths in a man	Human	台北醫學大學附設醫院口腔外科口腔病理科
	427	61	Visceral gout in a Green iguana (*Iguana iguana*)	Iguana	中興大學獸醫病理生物學研究所
	431	62	pulmonary alveolar proteinosis in a man	Human	羅東博愛醫院病理科
	432	62	Congenital pulmonary airways malformation, type 2 in a women	Human	高雄醫學大學附設醫院
	437	63	Large solitary luteinized follicular cyst of pregnancy and puerperium	Human	羅東博愛醫院病理科
	Gross	64	Hydronephrosis in a hog pig	Pig	中興大學獸醫病理生物學研究所

會 員 資 料 更 新 服 務

各位會員：

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

中華民國比較病理學會秘書處
國立中興大學 獸醫病理生物學研究所
廖俊旺 教授實驗室
助理 吳昭慧
sosia3342@gmail.com
04-22840894 轉 315
402 台中市南區國光路 250 號 動物疾病診斷中心 3F 305 室

----------中華民國比較病理學會----------

會員資料更改卡

姓　　名：_____　　會員類別：☐一般會員
☐學生會員
☐贊助會員

最高學歷：_____

服務單位：_____職　　稱：_____

永久地址：_____

通訊地址：_____

電　　話：_____傳　　真：_____

E-Mail Address：_____

中 華 民 國 比 較 病 理 學 會

誠摯邀請您加入

入　會　辦　法

一、 本會會員申請資格為：

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

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

（三）贊助會員：贊助本會工作之團體或個人。

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

二、 會員：

（一）入 會 費：一般會員新台幣一仟元，學生會員一佰元，贊助會員伍仟元，於入會時繳納。

（二）常年會費：一般會員新台幣一仟元，學生會員一佰元。

【註：學生會員身份變更為一般會員時，只需繳交一般會員之常年會費】

三、入會費及常年會費繳交方式：以銀行轉帳或匯款（**006 合作金庫銀行、帳號：0190-717-052017、戶名：中華民國比較病理學會**）；並請填妥**入會申請表**連同**銀行轉帳交易明細表**或**匯款單**以郵寄或傳真方式寄回中華民國比較病理學會秘書處收。地址：402 台中市南區國光路 250 號 動物疾病診斷中心 3F 305 室、電話：04-22840894#315、傳真 04-22852186。

中華民國比較病理學會入會申請及會員卡

會電腦編號

<table>
<tr><td rowspan="2">姓名</td><td>中文</td><td></td><td rowspan="2">姓別</td><td rowspan="2">□ 男
□ 女</td><td>出生</td><td>民國　年　月　日</td><td rowspan="2">出生地</td><td rowspan="2"></td></tr>
<tr><td>英文</td><td></td><td colspan="3">會員身份：□一般 □學生 □贊助</td><td>身份証</td><td></td></tr>
<tr><td rowspan="4">學歷</td><td colspan="3">(1)</td><td colspan="4">稱謂(圈選) 先生 小姐 醫師 獸醫師 教授 博士
研究員 主任 其他:</td></tr>
<tr><td colspan="3">(2)</td><td rowspan="3">研究興趣</td><td colspan="4">(1)</td></tr>
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永久：　　電話　　傳真：

電子信箱(E-mail)：</td></tr>
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貴會宗旨擬加入為會員嗣後並願遵守一切章共圖發展
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</td><td>審核結果</td></tr>
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