

Chinese Society of Comparative Pathology

中華民國比較病理學會

第 63 次比較病理學研討會

(腹腔疾病)



主辦單位

CHINESE SOCIETY OF COMPARATIVE PATHOLOGY

中華民國比較病理學會

協辦單位

College of Veterinary Medicine, National Chung Hsing University

國立中興大學獸醫學院

March 15, 2015 (中華民國 104 年 3 月 15 日)

SCHEDULE

63rd MEETING OF COMPARATIVE PATHOLOGY

中華民國比較病理學會 第 63 次比較病理學研討會

時間：104 年 3 月 15 日(星期日) 08:30~16:30

地點：國立中興大學獸醫學院

地址：40227 台中市南區國光路 250 號

電話：(04) 22840894 ext. 315

Time(時間)	Schedule(議程)		Moderator (主持)
08:30~09:20	Registration (報到)		
09:20~09:30	Opening Ceremony (致詞)		
09:30~10:20	專題 演講	講題：Comparative Pathology of Digestive Tumors and Diseases Between Human and Animals Dr. Pei-Yi Chu (朱旆億 醫師) Show Chwan Memorial Hospital (秀傳紀念醫院)	廖俊旺 理事長
10:20~10:50	Coffee Break (拍團體照)		
10:50~11:10	肉眼 診斷	Dr. Chia-Lin Ho (何佳霖 獸醫師) Graduate Institute of Veterinary Pathology, National Chung Hsing University (中興大學獸醫病理生物學研究所)	施洽雯 理事
11:10~11:30	Case 435	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)	
11:30~12:00	Case 436	Dr. Junn-Liang Chang (張俊梁 醫師) Department of Pathology & Laboratory Medicine, Armed Forces General Hospital (國軍桃園總醫院病理檢驗部)	
12:00~13:30	Lunch, and Board Meeting (中華民國比較病理學會理監事會議)		
13:30~14:00	Case 437	Dr. Chia-Wen Shih (施洽雯 醫師) Department of Pathology, Lotung Poh-Ai Hospital (羅東博愛醫院)	蔡睦宗 理事
14:00~14:20	Case 438	Dr. Kao, Chi-Fei (高啟霏 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)	
14:20~14:40	Coffee Break		
14:40~15:00	Case 439	Dr. Hao-Kai Chang (張皓凱 獸醫師) Graduate Institute of Veterinary Pathology, National Chung Hsing University (中興大學獸醫病理生物學研究所)	許永祥 理事
15:00~15:20	Case 440	Dr. Shin Pai (白馨 醫師) Department of Pathology, St. Martin De Porres Hospital (天主教聖馬爾定醫院口腔顎面外科)	
15:20~15:40	Case 441	Dr. Chung-Tiang Liang (梁鐘鼎 獸醫師) National Applied Research Laboratories (國家實驗動物中心)	
15:40~16:30	General Discussion (綜合討論) & Member's Meeting (會員大會)		

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Special Lecture

(專題演講)

Comparative Pathology of Digestive Tumors and Diseases between Human and Animals

(人與動物消化道腫瘤疾病之比較病理)

Dr. Pei-Yi Chu (朱旒億 醫師)

Show Chwan Memorial Hospital (彰化秀傳醫院病理科主任)

輔仁大學醫學系病理學 兼任助理教授

國家衛生研究院癌症研究所 兼任主治醫師

Spontaneously occurred domestic animal tumors, especially dogs, has been shown to pave another way for cancer-related research. The canine genome map has been recently completed and it is not surprisingly that dogs share many similarities in genetic aspect as human. Dog model is recently recognized as the best model to investigate various kinds of human diseases, including cancers. Many similarities as human beings have made some scientists to propose that the dogs may serve as a vital model for the study of human cancers. The incidence of gastrointestinal epithelial tumors in dogs is much lower than that of man and ranged from only 0.1% to 0.3% in the literature. Due to the time constraint, only gastric epithelial tumors will be included and discussed in this lecture. The outlines of this lecture include: (1) Studies related to the stomach awarded with the Nobel prize; (2) Introduction of the gastric tumors in dogs and human; (3) Histological classification of gastric tumor in dogs and human; (4) Gastric polyps and adenomas in dogs and human; (5) Gastric adenocarcinoma in dogs and human; (6) Gastric neuroendocrine tumor in dogs and human. All the final destination of cancer-related study is to get human and animal rid of cancer, or to cure cancer, or even “not get any cancer in lifespan”. By introduction of the comparative pathology of tumors of the gastrointestinal tracts of the dogs and the human, the Chinese Society of Comparative Pathology is shedding a light on comparative studies on oncology between animal and human in Taiwan.

Gross show

Slide No.: CO15-070M and CO14-463D

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=847

http://www.ivp.nchu.edu.tw/slide_view.php?id=845

Chia-Lin Ho (何佳霖) DVM, Hao-Kai Chang (張皓凱) DVM, and Cheng-Chung Lin (林正忠) DVM, PhD.

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 HISTORY

Signalment:

A marking size, slaughtered pig (about 110kg).

Clinical History:

The liver was condemned by a meat inspection veterinarian during slaughter processing.

Gross Findings:

On the surface of the liver, large amount of pale spots distributed without position-specificity. The average size of the spots was 0.5×0.5 cm. There were hundreds to thousands of spots. Some of them coalesced into pale patches. In the section of the liver, pale spots not only distributed on the capsular surface but also penetrated into the internal portion of the liver. Around and in the pale spots, the interlobular space was wider, and the hepatic lobules were smaller.

Pictures:



CASE RESULTS:

Histopathological Findings:

The hepatic lobules were amorphous and atrophied; besides, the interlobular space was wider. Fibrous connective tissue proliferated and replaced hepatocytes. Some lobules showed hepatocellular necrosis with hemorrhage. Numerous eosinophils infiltrated amount necrotic hepatocytes and at the junction of lobule and interlobular space.

Diagnosis:

Parasitic hepatitis, severe, chronic progressive, diffuse, liver.

Discussion:

Migration of larvae through the liver is a common component of a nematode's life cycle in domestic animal. Infection of liver with adult nematodes is considerably less common than larval migration. As larvae travel through the liver, they produce local tracts of hepatocellular necrosis that are accompanied by hemorrhage and inflammation, especially eosinophilic infiltration. These tracts are eventually replaced with connective tissue that mature into fibrous scars and which are especially prominent on the capsular surface. These capsular scars appear as pale areas, and the term milk-spotted liver has been used to describe livers in the pigs scarred by migrating larvae of *Ascaris suum*. Hepatic abscesses are occasionally induced by the intestinal bacteria carried to the liver by migrating larvae. Chronic hepatitis or hepatic scarring could also be a consequence of larval migration of *Stephanurus dentatus* in pigs.

Ascariasis is widespread in the pig population. The prevalence of *A. suum* infection varies with geographical region and farm management practices but few swine herds are totally free of infection. Porcine ascariasis seldom causes clinical signs to infected pigs, but it interferes with the health and performance of pigs while resulting in reduced feed to gain ratios and liver condemnation incurring economic losses. Milk spot lesions are themselves transient and will resolve after 40 days. Therefore, if there is evidence of liver damage at slaughter, the problem must be occurring in the finishing stage.

Hosts contract *Ascaris* infection via the fecal-oral route. Ascarid eggs are extremely resistant; they can survive away from pigs for up to 7 years. Following ingestion of infective ova, L3 larvae covered by the L2 cuticle, hatch in the small intestine and migrate to the caecum and proximal colon where they penetrate the mucosa. The larvae then migrate via the portal blood to reach the liver, where the L2 cuticle is shed. After migration in the liver, the larvae advance to the lungs on days 6-8 post-infection. The larvae penetrate the alveolar space and move to the pharynx where they are swallowed, resulting in returning to the small intestine on days 8-10 post-infection. *A. suum* moult again to L4 stage larvae in the small intestine on day 10 post-infection. Larvae mature and reach sexual maturity in the small intestine, moulting again (L5 stage larvae) on day 24 post-infection.

Reference:

1. Jackson PG, and Cockcroft PD. Handbook of pig medicine. Elsevier Health Sciences, 2007.
2. Zachary JF, and McGavin MD. Pathologic basis of veterinary disease. Elsevier Health Sciences, 2013.
3. Dold C, and Holland CV. Ascaris and ascariasis. Microbes and infection 13: 632-637, 2011.

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CASE DIAGNOSIS

Case No.	Presenter	Slide No.	Diagnosis
Case 435	陳彥璋	S2007-03634B	Adrenal gland, left, adrenalectomy, granulomatous inflammation, tuberculosis Gallbladder, cholecystectomy, chronic cholecystitis
Case 436	張俊樑	140370F	Primary non-Hodgkins lymphoma of terminal ileum
Case 437	施洽雯	LP-14-984	Large solitary luteinized follicular cyst of pregnancy and puerperium
Case 438	高啟霏	NTW014-1723	Ectopic thyroid gland tumor
Case 439	張皓凱	CO15-069B3	Porcine proliferative enteritis (PPE)
Case 440	白馨	S01-1993-K1 S01-1016-D3	Hepatocellular cell carcinoma Squamous cell carcinoma
Case 441	梁鍾鼎	95500470	Protothecosis

Case Number: 435

Slide No.: S2007-03634B

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=832

Yen-Chang Chen (陳彥璋), M.D., and Yung-Hsiang Hsu (許永祥), M.D.

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)

CASE HISTORY:

Signalment: A 86-year-old male

Clinical History:

A 86-year-old male presented with sudden onset of severe right upper quadrant (RUQ) pain for one day. He is used to drinking of alcohol, chewing of betel nut, and smoking. He had history of hypertension diagnosed for many years and hospitalization in 2003 due to congestive heart failure (CHF). The pain suddenly attacked when he was eating dinner. It was severe intensity, non-radiating, and persist pain at RUQ of abdomen. It didn't be relieving by changing position or taking rest. The intensity of pain increased when inspiration. He was taken to the ER of Yu-Li Tzu Chi hospital later. He didn't develop fever, chills, nausea, or vomiting. On physical examination, high blood pressure (159/94 mmHg), mild conjunctiva pale, and tenderness on RUQ abdomen were found. Murphy's sign was positive. No jaundice, no abnormal breathing sound, nor palpable lymph node was found. Lab data showed leukocytosis (24500/uL), mild hyperbilirubinemia (TBI 1.1 mg/dL, DBI 0.4 mg/dL), BUN/CRE: 50/1.6, GOP/GPT: 19/16, ALP: 94 (within normal range), and GGT: 47 (within normal range). KUB showed right upper quadrant opacity lesion, r/o gallbladder stone. Abdominal CT showed (1) multiple gallbladder stones (2) multiple liver cysts (3) incidentally, left adrenal mass and multiple regional retroperitoneal lymphadenopathies (LAPs), r/o malignancy.

Endocrine doctor was consulted and 24-hr urine for vanillomandelic acid (VMA, 1st set), and then for Catecholamine (epinephrine, norepinephrine, dopamine) (2nd set), and then for free cortisol (3rd set), ACTH, cortisol, aldosterone, plasma rennin activity (PRA), and DHEA-S (dehydroepiandrosterone) tests were suggested. But no specific finding was noted on these studies. After consulting GS Dr., laparoscopic cholecystectomy and left adrenalectomy were performed.

Laboratory result (Clinical Pathology)

Sample (date)	Item	Value	Range
Blood (3/14)	Cortisol	17.14 ug/dL	5~25
Blood	ACTH	34.9 pg/mL	10~46
Blood (3/20)	Aldosterone	58.3 pg/mL	(37~240)
Blood (3/20)	DHEA-S	15.6 ug/dL	281~606
Blood (3/21)	PRA	<0.13 ng/mL/hr	1.31~3.95
Urine (3/21) Catecholam	Epinephrin	<2.0 ug/24hrs	<22.4
	Norepineph	25.1 ug/24hrs	11.1~85.5
	Dopamin	91.4 ug/24hrs	50~450
Urine (3/21)	VMA	4.09 mg/24hrs	1.0~7.5
	Urine Vol.	1450 mL/24hrs	

Gross Finding:

The adrenal specimen was measured 6.0 x 5.0 x 4.0 cm in size. On cut, it is well defined, whitish lobulated with foci of cheese like necrosis.

The gallbladder specimen was measured 5.0 x 3.0 x 2.0 cm in size. Grossly, it is grayish and elastic.

CASE RESULT:

Histopathologic Finding:

Microscopically, the adrenal gland shows granulomatous inflammation with caseous necrosis and multinucleated giant cells formation diagnostic of tuberculosis. Acid-fast stain is a few TB bacilli.

The gallbladder shows chronic cholecystitis.

Diagnosis:

1. Adrenal gland, left, adrenalectomy, granulomatous inflammation, tuberculosis
2. Gallbladder, cholecystectomy, chronic cholecystitis

Discussion:

Solitary adrenal tuberculosis is rare. The clinical features of tuberculous adrenal mass are nonspecific such as fever, anorexia, weight-loss, and weakness. However, the adrenal function is usually reserved, although some patient with adrenal tuberculosis developed infection-related adrenal insufficiency due to bilateral involvement. Solitary adrenal tuberculosis is often an incidentally finding on abdominal CT scan, frequently leading to an erroneous diagnosis of a neoplastic disease such as our case.

The adrenal tuberculosis is almost always secondary tuberculosis elsewhere, most often the lung but sometimes the genitourinary tract. In solitary lesion of the adrenal gland, the tuberculosis is due to the reactivation of small lesions which were produced during a bacteremic phase of a previous primary infection. One possibility is that adrenal tuberculosis may be occurred originally with other tuberculous lesions and that adrenal gland remained involved while the other tuberculous lesions healed.

Using CT-guided percutaneous fine-needle aspiration biopsy, the diagnosis of adrenal tuberculosis may be confirmed in suspected patients who presents with adrenal gland mass seen incidentally on CT scanning. Demonstration of acid fast bacilli in the aspirate is one diagnostic option; however, acid fast bacilli were seen in one out of two cases in one report. Hence, histopathological confirmation is essential for a definitive diagnosis. However, the aspiration of material from adrenal gland mass may be difficult while even exact sampling might not confirm the diagnosis because of the difficulty in the cytological definition of malignant disease from the aspirate. So, surgical exploration is advised in all solid metabolically inactive adrenal masses greater than 3.5 cm with possible removal because of malignant potential. Masses smaller than 3.5 cm or less are usually benign and may safely be observed with serial CT scans.

The nonspecific symptoms of solitary adrenal gland will subsided after treating with anti-tuberculous therapy. But, in a few patients, when tuberculosis results in overt adrenal insufficiency, anti-tuberculous therapy does not appear to restore function. Steroid replacement therapy will be necessary. One must also be cognizant of the effect of rifampin, a potent hepatic

enzyme inducer on the metabolism of glucocorticoids. Failure to increase the dose of steroid replacement therapy may result in the development of adrenal crisis.

References

1. HI AlHadi, MA Hadi, SM Ali. The Incidentally Discovered Asymptomatic Adrenal Tuberculous Mass Mimicking Malignancy. Bangladesh Med. Res. COUIC.BIII. 1999; 25(I): 24-26
2. Jagriti Upadhyay, Praveen Sudhindra, George Abraham, and Nitin Trivedi. Tuberculosis of the Adrenal Gland: A Case Report and Review of the Literature of Infections of the Adrenal Gland. International Journal of Endocrinology Volume 2014, Article ID 876037, 7 pages

Case Number: 436

Slide no.: 140370F

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=844

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CASE HISTORY :**Signalment:** A 36-year-old male**Clinical History:**

A 36-year-old male was admitted (Feb. 06, 2014) due to abdominal pain and fullness sensation for three days and complained no passage of flatus or stool for one day.

Before five months admission, he presented with intermittent peri-umbilical pain and diarrhea, and dyspepsia and gastritis developed told at local medical center. Body weight loss with 10kg (78kg decreased to 68kg) was found in recent 2 months. Before one month admission, the colonoscopy was performed with non-significant finding at 臺東 local clinic. The laboratory findings, Hb was 9.6 g/dl, serum CEA level was 0.92 ng/mL, and CA199 level was 4.89 ng/mL. Unfortunately, he got the progressive abdominal pain persistently and fullness worse for three days, and then he visited at 臺東馬偕 Hospital. He has received the CT of abdomen imaging study showed colon intussusception with total intestinal obstruction. He is an active soldier. Before four days admission, he visited at our OPD of General Surgery Division and was referred to ER Division immediately and was admitted at Division of General Surgery for further evaluation and management.

Personal history & family history, he is Taiwanese. He had no familial history of malignancy. Denied of systemic disease or no history of operation, drug allergy, alcoholic, traveling and smoke habit. His father & mother had history of hypertension.

In ER Division, physical examination showed he was ill-looking alert. Vital signs: BT : 35.4°C, PR : 91/min, RR:15/min, BP: 170/89mmHg, Skin: normal skin turgor, no pressure sore. HEENT: pale conjunctiva (+), icteric sclera (-), no axillary lymphadenopathy or palpable neck mass. Heart: regular heart beat. Chest: symmetric chest wall expansion, auscultation: no rhonchi, no wheezing, no basal rales. Abdomen: soft and ovoid, decreased bowel sound, no shifting dullness, local tenderness of RLQ with muscle guarding and rebounding pain, abdominal fullness and distention. Extremities: no joint deformities and full range of motion. Neurologic examination : no remarkable findings, GCS: E4V4~5M6, cranial nerve: intact, MP: 5/5, DTR: ++/++. Others were non-contributions.

In review imaging study was performed at 臺東馬偕 Hospital. Chest X-ray was normal; abdominal plain radiography (KUB) films showed features of bowel obstruction. The axial view of contrast-enhanced computed tomography (CECT) scan of the abdomen showed a hypodense mass in the hepatic flexure of right-sided colon. Regional lymph node enlargement was also found. The coronal view of CECT scan demonstrated evident intussusception of the terminal ileum may be due to tumor or inflammation of ileum or ileocecal valve, bowel in bowel appearance or may identify mass within lumen. The tentative diagnosis that suggestive of ascending colon intussusception with total intestinal obstruction with unknown cause was impressed.

Subsequently, diagnostic procedure on exploration laparotomy with right hemicolectomy was performed under the acute bowel obstruction with mass in right hypochondrium with intussusception of ileocecum by GS Division. The operation with an enterotomy revealed an ulcerative fungating polypoid, round, and smooth-edge tumor mass measured 5 x 3 x 3 cm in size located at terminal ileum near ileocecal valve. Inspection found no enlarged local and regional lymph nodes. Under the impression of intussusception of ileocecum with intestinal obstruction and highly suspected gastrointestinal stromal tumor (GIST) was firstly considered. The histopathological examination of the resected terminal ileal specimen revealed as a malignant lymphoma was diagnosed. Postoperatively patient made an uneventful recovery. Gastrointestinal function returned on the second postoperative day and oral intake was started on the third day. Ten days later, he was transferred to Taipei Tri-Service General Hospital for further adjuvant management. The post-operative work-up, including bone marrow biopsy and computed tomographic (CT) scan and positron emission tomography–computed tomography (PET-CT), did not reveal any residual malignant process. The final stage, i.e., stage IIE of DLBCL, was diagnosed. Following the National Comprehensive Cancer Network® guidelines (2009) for DLBCL, he has received adjuvant chemotherapy (by CHOP (cyclophosphamide, adriamycin, vincristine, prednisone) in completely courses. Up to the present, he has completed 6 cycles and his condition is stable. Follow-up CT showed no evidence of para-aortic and mesenteric lymph node enlargement or other organ abnormalities.

One year after surgery the patient underwent reevaluation, including CT scan, in which revealed no pathological findings. The positron emission tomography–computed tomography (PET-CT) and CT of the thorax and abdomen was normal. There were no signs in the bone marrow smear or trephine biopsy of infiltration by lymphoma. He was free of disease without signs of recurrence after one year of follow-up.

Laboratory results (Clinical Pathology) :

The laboratory blood and biochemical examinations: platelet count was 550 /mm³, others were in normal within level.

Gross Findings :

The specimen submitted consisted of included a segmental of terminal ileum, cecum, and partial ascending colon with brown to purple in color. A segmental terminal ileum measured 15 cm in

length and 4 cm in diameter. The cecum and ascending colon measured 25 cm in length and 6 cm in diameter. On sections, an intussusciens measured 8 x 4 x 4 cm with mucosa erosion appearance with coexistent an ill-circumscribed, diffusely infiltrating, ulcerative mass measured 5 x 3 x 3 cm and located adjacent to the ileocecal valve, respectively.

Case Number: 436

CASE RESULT :

Histopathologic Findings :

Microscopically, the histopathologic examination of the resected specimen revealed composed of diffuse large B-cell lymphoma (DLBCL) with highly atypical medium-to-large lymphocytes with oval-to-round vesicular nuclei and prominent nucleoli, infiltrating to the majority of ulcerative mucosa and submucosa of the terminal ileum and ileocecal mucosa involved. Based on these findings, the lesion was diagnosed as a DLBCL. Dissected regional lymph nodes taken from 9 dissected pericolic regional lymph nodes showed two of nine lymph nodes with positive tumor involvement. Histopathological investigation showed primary Non-Hodgkin Lymphoma (B-cell variety) of terminal ileum and ileocecal valve. There was also presented focal hemorrhage and extensive ulcer with necrosis.

Immunohistochemistry :

Immunohistochemical study, these tumor cells displayed diffusely strongly immunoreactivity for CD45, CD20, Bcl-2 and focal positive for BCL-6 and CD10 stains. In addition, there focally scattered reactive mature T-cells for CD3 stain, negative stains for CD30, Cyclin D1, TdT (immature T and B cells and multipotent hematopoietic stem cells or acute lymphoblastic leukaemia, AML), negative for EMA and pan-CK stains. There also revealed increased proliferative index K-67 with 40% of involved lymphoma cells.

Differential Diagnosis :

1. Pseudolymphoma (MALT-type lymphoma) or lymphoid hyperplasia
2. Malignant lymphoid tumors:
 - Burkitt's lymphoma, Hodgkin lymphoma, Plasmacytoma, Anaplastic large cell lymphoma, Myelocytic leukemia
3. Gastrointestinal stromal tumor (GIST)
4. Carcoid tumor, Poorly differentiated carcinoma

Diagnosis :

Terminal ileum, malignant lymphoma (non-Hodgkins lymphoma), diffuse large B-cell lymphoma (DLBCL) intermediate grade, with ileocecal intussusception, with regional lymph nodal involvement. (Primary non-Hodgkins lymphoma of terminal ileum).

Discussion :

Gastrointestinal (GI) tract is the commonest site for extranodal lymphoma. Primary GI tract lymphomas account for approximately 0.9% of all GI tract tumors. The GI tract is the most common extranodal location for non-Hodgkin's lymphoma (NHL) and accounts for up to 20%-40% of cases of NHL. The stomach (50%-60%) is the most frequently affected site, followed

by the small bowel (20%-30%), whereas 85% of primary GI lymphomas and 60%-80% of intestinal lymphomas are B-cell type (diffuse large B cell lymphoma, DLBCL) followed by T-cell NHL and Hodgkin's lymphoma.

Intussusception is invagination of a bowel segment, usually proximal, into distal bowel segment. Intussusception is most often seen in infants and children and only 5% of all cases occur in adults. It accounts for about 1% of all cases of adult bowel obstruction. Adult intussusception is rare and about 40% are related to malignant lesions. Malignant lesions account for up to 30% of all cases of intussusception in the small intestine. Intussusception occurring in the large bowel is more likely to be related to malignant lesions in 63%-68% of cases. Primary malignant tumors of the small intestine are very rare, accounting for less than 2% of all GI malignancies.

Malignant lesions resulting in intussusception in the small intestine include primary adenocarcinoma, gastrointestinal stromal tumors (GISTs), lymphoma and carcinoid tumors. The peak age for the GI NHL in children is 5-15 years with male sex preponderance 1.8-2.5 times that of females. Lymphoma primarily involving the ileocecal region is common anatomical site. Though uncommon of the primary NHL is found to be the lead point in intussusception, commonly involving the terminal ileum. The primary terminal ileal NHL presented as intussusception. Intussusception is a common cause of abdominal pain in infants and children. Although most cases are idiopathic, about 10% of cases have a pathologic lead point, especially in elderly patients. DLBCL is not a common etiology of intestinal intussusception, and is a particularly rare etiology of intestinal intussusception in adolescent. DLBCL-induced intussusception is more common in old patients (more than 60 years old) than in adolescent. Primary NHL presenting as ileocolocolic intussusception in paediatric age group is a very rare clinical entity. Most intussusceptions in adults are pathological and malignancy is the commonest cause and most are diagnosed intraoperatively.

For diagnosis of primary GI lymphomas the following criteria should be met: 1. No palpable superficial lymph nodes; 2. Normal CxR; 3. Normal white cell count, 4. At surgery a predominant alimentary tract lesion with nodes confined to the drainage area; 5. No involvement of liver and spleen. They are commonly derived from B-cells from the lymphoid tissue present in the lamina propria and submucosa.

Primary NHL of bowel may present as abdominal pain, nausea, vomiting and weight loss, abdominal mass, obstruction or perforation, bleeding or intussusception. Predominant symptoms of adult intussusceptions include abdominal cramping pain (75%), nausea and vomiting (68%), tenderness (60%), abdominal distention (45%), and a change of bowel habit (34%). Previous investigators showed that the relative risk factors include celiac disease, Crohn's disease, SLE, immunocompromised state and a history of chemotherapy or extra-intestinal lymphoma. In addition, such as chronic antigenic stimulation in an immunosuppressed host, malabsorption syndromes, ulcerative colitis, or the interaction of Epstein-Barr (EB) virus with immunosuppression, may predispose patients to develop primary intestinal lymphoma.

In the present case, intussusception caused by malignant lymphoma was diagnosed by a combination of CT scanning, which is the most accurate tool for diagnosing intussusception, and histological examination of the resected tumor. Our patient showed non-significant finding by

pre-operative colonoscopy. If the diagnosis by colonoscopic biopsy had been malignant lymphoma, resection of the segment of the bowel with lymphoma would still have been recommended in order to relieve obstruction, eliminate the risk of perforation, and reduce the likelihood of hemorrhage. The non-specific clinical presentation makes the preoperative diagnosis difficult. CT scan is one of the most useful preoperative diagnostic modalities for intussusception as it can show the thickened segment of bowel with an eccentrically placed crescent-like fatty area (bowel within bowel). If the patient does not have a complete intestinal obstruction, colonoscopy is helpful for the clinical and pathological diagnosis of intussusception. Positron emission tomography-computed tomography (PET-CT) is useful for detecting the primary benign or malignant lesion sites and the distal regions which may be involved in lymphoma, although it is not often routinely used. A number of diagnostic tools such as ultrasonography, contrast CT scan, barium studies, angiography and radionuclide scan are available but characteristic 'target mass' appearance on Contrast Enhanced Computed Tomography (CECT) of abdomen is the most sensitive test.

In majority of children the diagnosis is made at laparotomy. Surgery plays a pivotal role in the management. Spontaneous bowel perforation from the lymphoma or during surgical manipulation increases the risk of perioperative mortality. Complete resection of the tumor was shown to have the added advantage of avoiding bowel perforation, GI hemorrhage or the tumor-lysis syndrome after the initiation of chemotherapy. Chemotherapy represents a cornerstone in the treatment of these patients and offers an excellent chance for long term disease free survival. In view of significant macroscopic and possible microscopic residual disease there is a strong rationale for adjuvant treatment comprising 4 to 6 cycles of combination chemotherapy (CHOP/CYP) with abdominal radiotherapy to persistent residual abdominal disease. Localized disease, low stage disease and complete resection are favors for survival in lymphoma. Computed tomography confirmed the diagnosis of intussusception and NHL of B-cell was diagnosed by histological examination after surgical treatment. Various trials have been shown surgery combined with chemotherapy had improved the survival rate. However one study shows the recurrence rate after surgery with radiotherapy was 8.3%, chemoradiation was 13.3% and chemotherapy alone was 25% where radiotherapy associates with least recurrent disease.

Conclusion:

Adult intussusception is a rare cause of intestinal obstruction. In a significant percentage of patients malignancy is the etiology, this diagnosis should thus be considered in patients having long standing abdominal pain. Although abdominal sonography may be useful, CT scan is the investigation of choice due to its high sensitivity and specificity, its ability to diagnose the intussusceptions as well as to differentiate between benign or malignant lesions.

References :

1. Shah P Ramakantan R. Ileoceocolic intussusception produced by lymphoblastic lymphoma of ileum. Indian J Gastroenterol 8:302, 1989.
2. Zinzani PL, Magagnoli M, Pagliani G, Bendandi M, Gherlinzoni F, Merla E, Salvucci M, Tura S. Primary intestinal lymphoma: clinical and therapeutic features of 32 patients.

- Haematologica Oncol 82: 305-8, 1997.
3. Pandey M, Kothari KC, Wadhwa MK, Patel HP, Patel SM, Patel DD. Primary malignant large bowel lymphoma. *Am J Surg* 68: 121-6, 2002.
 4. D Amore Brinker, K. NHL of the gastrointestinal tract. A population-based analysis of incidence, geographic distribution, clinical, pathologic presentation features, and prognosis. *J Clin Oncol* 12: 1673-84, 1994.
 5. Bar-Ziv J, Solomon A. Computed tomography in intussusception. *Gastrointest Radiology*; 16: 264-66, 1991.
 6. Radman I, Jasminka K, Aurer I. Surgical resection in the treatment of primary gastrointestinal NHL, Retrospective study. *Croat Med J* 43: pp 555-560, 2000.
 7. Nam S, Kang J, Park H, Lee KY, Sohn SK. Adult ileocecal intussusception caused by malignant lymphoma. *Korean J Clinic Oncol* 10: 46-9, 2014.
 8. Sweetenham JW, Mead G.M, Wright' DH, McKendrick JJ, Jones DH, Williams CJ, Whitehouse JMA. Involvement of the ileocaecal region by non-Hodgkin's lymphoma in adults: clinical features and results of treatment. *Br J Cancer* 60:366-9, 1989.
 9. Khan SH, Ahmad M, Wani NA, Kharadi MY, Shah A, Javed' G, Qureshi TJ. Primary ileocaecal lymphoma: Clinico-pathological features and results of treatment. *J K Science* 2: 88-92, 2000.
 10. Chang YM, Yu CP, Chan DC, Lin YC, Chao TK. Extranodal diffuse large B-cell lymphoma Presenting as ileocolic intussusception in adolescent. *J Med Sci* 31:169-72, 2011.
 11. Engin G, Korman U. Gastrointestinal lymphoma: a spectrum of fluoroscopic and CT findings. *Diagn Interv Radiol* 17:255–65, 2011.
 12. Xu XO, Hong T, Li BL, Liu W. Ileo-ileal intussusception caused by diffuse large B-cell lymphoma of the ileum. *World J Gastroenterol* 19: 8449-52, 2013.
 13. Chenal M, Molina H, Mendez V, Poole J, Parellada C. Uncommon Presentations of Non-Hodgkin's Lymphoma. *American Society of Clinical Oncology* 21: 3 565-7, 2003.
 14. Koch P, del Valle F, Berdel W, et al: Primary gastrointestinal non-Hodgkin's lymphoma: I. Anatomic and histologic distribution, clinical features, and survival data of 371 patients registered in the German Multicenter Study GIT NHL 01/92. *J Clin Oncol* 19:3861–3873, 2001.
 15. Majdoub KI, El Bouhaddouti H, Ousadden A, Ankouz A, Boubou M, Tizniti S, Taleb KA. Non-Hodgkin's lymphoma revealed by an ilio-colic intussusception in a Moroccan patient: a case report. *Pan Afr Med J* 4:11, 2010.
 16. Shakya VC*, Agrawal CS, Koirala R, Khaniya S, Rajbanshi S, Pandey SR, Adhikary S. Intussusception due to non Hodgkin's lymphoma; different experiences in two children: two case reports. *Cases J* 2:6304, 2009.
 17. Akbulut S. Unusual cause of adult intussusception: diffuse large B-cell non-Hodgkin's lymphoma: a case report and review. *Eur Rev Med Pharmacol Sci* 16:1938-46, 2012.
 18. Huang CS, Chen CF, Chung MT, Lin HC. Adult intussusception caused by malignant lymphoma. *J Soc Colon Rectal Surgeon (Taiwan)* 20:100-3, 2009.
 19. Sarma D, Prabhu R, Rodrigues G. Adult intussusception: a six-year experience at a single

center. *Annals Gastro* 25:128-32, 2012.

20. Terada T. One patient with double lymphomas: simultaneous gastric MALT lymphoma and ileal diffuse large B-cell lymphoma. *Int J Clin Exp Pathol* 5:260-3, 2012.

Case Number: 437

Slide No.: LP-14-984

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=848

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CASE HISTORY:

Signalment: 31 year-old female

Clinical History:

A 31 year-old female who has suffered from vaginal spotting since last delivery on 2013-10-16. She received postpartum examination on 2013-12 at a local hospital in Hsinchu and a large right ovarian tumor was found which measuring 15 cm in diameter. On 2014/1/24, she came to our hospital due to abdominal fullness and stinging sensation intermittently at the left lower quadrant. TVS (Transvaginal sonography) shows left adnexal cystic tumor measuring 17.5 x 17.4 x 9.8 cm. No fluid is noted in the cul-de-sac. Laparoscopic left oophorocystectomy was performed on 2014-2-5. A large left cystic ovarian tumor was removed after drainage of 1500cc of serous fluid in the cyst. The cystic tumor was sent for pathologic examination. Grossly, the tissue is a large ruptured cystic tumor measuring 12.3 x 7.8 x 5.9 cm. The cystic wall is thin and smooth in general with only small areas show mild thickening.

Clinical Pathology:

BUN: 14 mg/dL (8-20 mg/dL), Creatinine: 0.7 mg/dL (0.6-1.1 mg/dL), Na: 139.0 mmol/L (135-145 mmol/L), K: 3.8 mmol/L (3.5-5.1 mmol/L), Cl: 104.4 mmol/L (96.0-110.0 mmol/L), RBC: 4.06×10^6 /uL ($4.2-5.4 \times 10^6$ /uL), Hb: 11.5 gm/dL (12.0-16.0 gm/dL), Hct: 34.1 % (37-47%), Plt: 18.6×10^4 /dL ($15-40 \times 10^4$ /dL), WBC: 5900/uL (4500-11000/uL), Lymphocyte: 22.7% (20.0-45.0%), Neutrophil: 69.3% (45.0-75.0%), Monocyte: 7.5% (0.0-9.0%), Eosinophil: 0.2% (1.0-3.0%), Glucose, (AC): 113 mg/dL (70-100 mg/dL), Ca-125: 12.85U/mL (<35.00U/mL), β -hCG: 4772.00 mIU/mL (<4.9 mIU/mL).

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CASE RESULT:

Histopathologic Findings:

Histologically, the cystic tumor is lined by one to several layers of luteinized granulosa cells and theca cells in areas. The luteinized cells show irregular in size and shape with abundant eosinophilic cytoplasm and indistinct nucleoli. Areas of proliferated atypical or bizarre cells with irregular large hyperchromatic nuclei and distinct nucleoli are also noted. Areas of the cyst wall contain nests of luteinized cells that are morphologically similar to the cyst lining cells. No significant mitosis is noted.

Immunohistochemistry:

The lining cells of the cystic tumor show positive staining for CK, calretinin and vimentin and negative for CK7, EMA, SMA, S-100 and HBME1.

Differential diagnosis:

1. Large solitary luteinized follicular cyst of pregnancy and puerperium.
2. Serous cystadenoma of borderline malignancy.
3. Mucinous cystadenoma of borderline malignancy.
4. Corpus luteum cyst.

Diagnosis: Large solitary luteinized follicular cyst of pregnancy and puerperium.

Comments:

Ovarian tumors and tumor-like masses related to pregnancy are uncommon, with an incidence of about 1%. Most neoplasms are benign, and about 4% are malignant. Tumor-like lesions include pregnancy luteoma, hyperreactio luteinalis, intrafollicular granulosa cell proliferation, hilus cell hyperplasia, ectopic decidua, and large solitary luteinized follicle cyst of pregnancy and puerperium (LSLFCPP). These lesions can simulate neoplasms by clinical, gross, and microscopic examinations. Regular prenatal check-up is routine and highly recommended for every pregnant woman. With routine obstetric ultrasound examinations, ovarian cysts are now more commonly diagnosed during pregnancy, and their management is still a challenging clinical issue among obstetricians. Most women are in a position to get pregnant using a corpus luteum cyst. Typically these cysts is not going to endanger nor interfere with all the pregnancy. Nevertheless, miscarriage is usually a chance and does arise in a modest percentage of females with cysts. A corpus luteum cyst in earlier pregnancy may possibly stay until eventually a afterwards trimester prior to it finally disappears. If the cyst is large, or is leading to considerable discomfort, or bleeds excessively it might need to have to generally be removed prior to pregnancy.

Ovarian luteinized follicular cyst is a relatively uncommon benign condition characterized by bilateral or solitary ovarian enlargement during pregnancy. It is a self-limiting disease that can

regress spontaneously after labor. The complications of the disease include ovarian torsion, intracystic hemorrhage, and rupture. Ovarian luteinized follicular cysts should be compared with luteoma. Luteoma is more frequent with multipara, whereas ovarian luteinized follicular cysts are more often seen with unipara. Ovarian luteinized follicular cysts and luteoma are usually found by chance. The pathology must be known because of their spontaneous regression after delivery.

LSLFCPP is a rare lesion, to date, only 2 cases of large bilateral ovarian luteinized follicular cysts associated with normal pregnancy and 14 cases of large solitary ovarian luteinized follicular cyst of pregnancy and puerperium have been reported.

Of particular interest is LSLFCPP for its enormous size and confusion with neoplasms. These cysts were found during pregnancy or puerperium, or with a unilateral ovarian cyst during cesarean delivery at term, and they had a median diameter of 25 cm.

The pathogenesis of LSLFCPP is unclear. Its occurrence during pregnancy suggests a role of hCG (human chorionic gonadotropin). This association is supported by the presence of numerous cystic follicles, which are known to be induced by hCG, in the remnant ovarian tissue. Usually, the cases of LSLFCPP have high serum hCG. However, several cases of LSLFCPP occurring late in the puerperium when hCG levels are low. These cases can be considered to be increased tissue sensitivity to hCG. LSLFCPP can also appear up to 3 months postpartum, when hCG has normally become undetectable. In such cases, Clement and Scully postulated that the development of these cysts is initially (prenatally) stimulated by hCG, albeit to a size that may remain unnoticed. A rise in the pituitary gonadotropins (follicle stimulating hormone/luteinizing hormone), if there is no lactation postpartum, may be responsible for their continuing enlargement.

The sonographic appearance of large luteinized cysts of pregnancy facilitates their differential diagnosis from other adnexal masses. Follicular and corpus luteum cysts are relatively common, but they rarely exceed 6–8 cm in diameter. Pregnancy luteoma and hyperreactio luteinalis only occur during pregnancy. Both of these masses can cause maternal virilization (25–35%), with luteomas also causing virilization of the female fetus in about one-third of cases. Luteomas are typically multiple and often occur bilaterally. Their appearance is predominantly solid, but they may also have cystic areas and are typically 6–10 cm in size, occasionally reaching 20 cm. Hyperreactio luteinalis is typically bilateral and is characterized by ovarian enlargement caused by numerous luteinized follicular cysts, often with hemorrhagic areas. In contrast to luteoma, hyperreactio luteinalis is seen in conditions with abnormally high levels of hCG (e.g. twins, hydatidiform mole, hydrops and choriocarcinoma). A diagnostic problem may arise with serous cystadenomas, which are usually unilocular (occasionally bilocular), with a thin, smooth wall, a thin, regular septum and homogeneous anechoic content.

Epithelial tumors of the ovary can be either benign (cystadenomas) or malignant (cystadenocarcinomas). However, there is an intermediate state of epithelial tumors of the ovary called 'borderline tumors'. Neither the oncological behavior of this intermediate group of tumors nor the histological changes of the cells of the ovarian epithelium meet the specific criteria of benignity or malignancy. In 1973, the

International Federation of Gynecology and Obstetrics (FIGO) gave this group of ovarian tumors a

'low malignant potential', and since then, the World Health Organization (WHO) has called them borderline ovarian tumors (BOTs).

A review of 1063 cases showed that 50% of BOTs were the serous, 46% mucinous, and 3.9% were mixed, endometrioid, clear cell or Brenner tumors.

Borderline serous tumors of the ovary, also known as ovarian tumors of low malignant potential, were first described in 1929 and were designated for separate classification in the early 1970s by the World Health Organization. The borderline category comprises approximately 4%–14% of all epithelial ovarian neoplasms and 15% of all serous tumors. They are unilateral in 70% of cases. The mean age of women affected by borderline tumors is approximately 10 years younger at manifestation than the mean age of women affected by malignant ovarian epithelial tumors. Microscopically, serous tumors of low malignant potential, characterized by broad, branching papillae (hierarchical branching) focally covered by stratified epithelium with mild to moderate atypia with few mitoses. Epithelial cells may be columnar, polygonal or round with moderate to abundant eosinophilic cytoplasm. Cilia or surface snouts may be present. Intracystic spaces may be clear or contain mucin. Stroma is fibrous and edematous with variable psammoma bodies. No stromal invasion; but may be associated with low-grade serous carcinoma. Serum CA-125 level is typically mildly elevated.

An ovarian borderline mucinous cystadenoma is a subtype of ovarian mucinous tumours and as the name stands is intermediate between a mucinous cystadenoma and a mucinous cystadenocarcinoma. Borderline mucinous cystadenoma represent 32% of all epithelial BOTs and account for 10-15% of all ovarian mucinous tumours. They are divided into two histologic subtypes: the intestinal (90%) and the Müllerian (endocervical type). They can show identical gross features to those of mucinous cystadenomas. They are microscopically characterized by cytologic atypia and epithelial stratification of the tall columnar epithelium with enlarged and hyperchromatic nuclei, distinct nucleoli and increased mitotic figures. However, stromal invasion is absent. In contrast to the serous BOT, the mucinous subtype is associated more rarely with peritoneal implants.

The potential for malignancy is always a concern when considering an ovarian mass, especially when it is enlarging. A malignant mass is usually expected to have a solid or predominantly solid appearance, irregularities in the wall and papillary projections or thick septa in its interior, which are not shared by the luteinized follicular cysts. However, an initially large and subsequently enlarging size is still a risk factor for malignancy, even in a simple mass. Fortunately, less than 1% of ovarian masses in pregnancy are malignant, about one-third of them being germ cell tumor. Close monitoring would be recommended for large masses during pregnancy, especially as the reliability of ancillary tests (CA 125, β -hCG or alpha-fetoprotein) is reduced as a result of the physiological adaptations of pregnancy. The β -hCG determination is essential to rule out choriocarcinoma, Alpha-fetoprotein as a marker for endodermal sinus tumors, lactic dehydrogenase (LDH) for dysgerminomas. An elevated serum CA-125 level is found in several malignant conditions, including serous epithelial ovarian. Serum CA-125 is elevated in 80 percent of all patients with serous cystadenocarcinoma of the ovary.

An ultrasound examination is the most valuable diagnostic study in the evaluation of an

adnexal or pelvic mass during pregnancy. Although operator dependent, an experienced ultrasonographer should be able to determine the size and complexity of the mass. Ultrasound can also indicate whether a mass is cystic or solid, whether its contour is smooth or contains excrescences, and whether it contains any internal septa or papillae. Each of the latter characteristics is suggestive of malignancy. The presence of ascites also may indicate a malignant process.

As with any adnexal mass during pregnancy, the management options include either expectant follow-up or surgical removal. The theoretical disadvantages of the first approach include the potential for development of complications such as rupture or torsion, or rarely progress in the case of malignancy, while a cystectomy may increase the risk of fetal complications. Although published data specifically concerning large luteinized follicular cysts of pregnancy are limited, their tendency to grow means that they are associated with higher risk, and removal was eventually required either before delivery or during puerperium. Fortunately, it appears that adnexal surgery in pregnancy is very safe.

In conclusion, large luteinized follicular cysts of pregnancy and puerperium are an uncommon type of cystic mass particular to pregnancy, which should be included in the differential diagnostic workup whenever a growing simple cyst is encountered. These cysts are characterized by the combination of a benign appearance and atypical or bizarre cells and a tendency to enlarge rapidly, eventually becoming symptomatic and most often necessitating surgery.

References:

1. Ueda M, Ueki M: ovarian tumors associated with pregnancy. *Int J Gyn Obstet* 1996, 55:59-65.
2. Clement PB: Tumor-like lesions of the ovary associated with pregnancy. *Int J Gynecol Pathol* 1993, 12:108-115.
3. Laohapand T, Suwanprakorn P, Budthimedhee V, Stitnimankarn T. Bilateral multiple luteinized follicular cysts associated with normal pregnancy: a case report. *J Med Assoc Thai* 1981;64: 312-4.
4. Roth LM, Ehrlich CE, Ellis GH. Large luteinized follicular cyst of pregnancy and puerperium. *South Med J* 1988;81:805-6.
5. Clement PB, Scully RE: Large solitary luteinized follicle cyst of pregnancy and puerperium: A clinicopathological analysis of eight cases. *Am J Surg Pathol* 1980, 4:431-438.
6. Fang YM, Gomes J, Lysikiewicz A, Maulik D: Massive luteinized follicular cyst of pregnancy. *Obstet Gynecol* 2005, 105:1218-1221.
7. Thomas S, Krishnaswami H, Seshadri L: Large solitary luteinized follicle cyst of pregnancy and puerperium. *Acta Obstet Gynecol Scand* 1993, 72:678-679.
8. Haddad A, Mulvany N, Billson V, Arnstein M: Solitary luteinized follicle cyst of pregnancy. Report of a case with cytological findings. *Acta Cytol* 2000, 44:454-458.
9. Albukerk JN, Berlin M. Unilateral lutein cyst in pregnancy. *N Y State J Med* 1976;76:259-61.
10. Kott MM, Schmidt WA. Massive postpartum corpus luteum cyst: a case report. *Hum Pathol* 1981;12:468-70.
11. Caspi E, Schreyer P, Bukovsky J. Ovarian lutein cysts in pregnancy. *Obstet Gynecol*

1973;42:388–98.

12. Degrolard M, Douvier S, Feldman JP, Henriques E, Mavel A. Luteinized cystic hyperplasia of the ovaries during pregnancy: a case report. *J Gynecol Obstet Biol Reprod (Paris)* 1992;21: 569–72.

Case Number: 438

Slide No.: NTW014-1723

Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=851

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CASE HISTORY:

Signalment: A 12-year-old, spayed female beagle

Clinical History:

A 12-year-old, spayed female beagle was attended to the National Taiwan University Veterinary Hospital (NTUVH) due to frequent panting and coughing since half a year ago. The patient was alert and most clinical examination showed unremarkable findings. Radiology and computed tomography (CT), however, revealed a 7x 7x 9 cm in size, heart base mass with central necrosis and resultant dislocation of trachea, heart and great vessels. A CT-guide Tru-Cut biopsy was performed.

Clinical Pathology:

The imprint smear cytology revealed numerous nucleated cells arranged in variably sized clusters or occasionally appearing individually with lysed cytoplasm, presenting as naked nuclei. Small amount of extracellular eosinophilic material was noted regionally.

Gross Findings:

The submitted specimens were small, soft and whitish, with foci of brownish discoloration.

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CASE RESULT:

Histopathological Findings:

The submitted tissues are chiefly composed of uniform, polygonal neoplastic cells arranged in sheets and vague nodular patterns separated by fine fibrovascular stroma. Scattered glandular growths are occasionally observed. The neoplastic cells have abundant eosinophilic and vacuolated cytoplasm and distinct cell borders with one round, centrally located nucleus and a single conspicuous magenta nucleolus. No mitotic figure is noted in the selected section. Mild hemorrhage and inflammation are observed in the surrounding fibrous connective tissues.

Immunohistochemistry:

The neoplastic cells show positive immunoreactivity for TTF-1 and thyroglobulin and negative staining for synaptophysin.

Pathological Diagnosis: Ectopic thyroid gland tumor, heart base region

Differential diagnosis:

1. Aortic body tumor (chemodectoma)
2. Ectopic thyroid gland tumor

Discussion:

Ectopic thyroid tissue (ETT), a congenital displacement of thyroid glands, is a consequence of migrating defect of thyroid embryogenesis and can be found up to 50 % of adult dogs according to some autopsy series. It can occur at any position along the pathway of the descent, from the base of the tongue to the mediastinum, and because the lateral thyroid primordia lie on a close position to the aortic sac that will later develop to interventricular septum, the abnormal incorporation may result in intracardiac ETTs. The parafollicular cells or C cells, however, are usually not present for they derive from different origin and fuse with the thyroid primordia after seeding of ETTs. Interestingly, in human, the most common location of ETTs is at the base of the tongue, whereas in dogs, they predominantly occur at the heart base.

Neoplastic transformation of ETTs is relatively rare in dogs, comparing to other neoplasms. Just like their eutopic counterparts, carcinomas are more prevalent than adenomas and the majority of the ectopic thyroid carcinomas arise from follicular epithelium. As in the case of benign ETTs, the ectopic thyroid gland tumors (ETGTs) occur most frequently at the base of the heart and represent approximately 5-10 % of canine heart base tumors. For ectopic thyroid carcinoma, they share similar histological patterns of growth as the eutopic thyroid tumors which are divided to three morphological variants: follicular, papillary and compact (solid) types. Unlike in human, the papillary carcinoma is the most common type; in dogs, admixtures of both follicular and compact patterns are encountered most frequently. The follicular carcinomas are characterized by neoplastic

cells predominantly form recognizable follicles with presence of marked cell atypia and invasiveness but often low mitotic activity. The compact carcinomas are diagnosed when tumor cells are arranged in a solid sheet separated by a fibrous stroma. There is usually none or little formation of follicles. The cells are polygonal and have abundant, finely granulated or vacuolated cytoplasm. It is worth noting that both the growth pattern and cell morphology make thyroid carcinomas with compact pattern easily be mistaken for neuroendocrine tumors, such as C cell carcinomas in eutopic location or chemodectomas at the heart base. Papillary carcinomas are extremely rare entities in domestic animals in contrast to their frequency in human. In papillary carcinomas, the tumor cells form variably sized papillae extending into cystic spaces and display characteristic nuclear pseudoinclusion or Orphan Annie-eye nuclei caused by invagination of nuclear membrane. When the neoplasms lack a characteristic pattern, they are classified to be undifferentiated. Carcinosarcomas, which comprise both malignant follicular cells and mesenchymal (usually osteogenic or cartilaginous) elements in both normal anatomic and ectopic locations have also been reported in dogs.

The clinical signs associated with ETGTs are usually non-specific, like inappetence, coughing, exercise intolerance, and depend on the locations, size and invasiveness for they create variable degrees of space occupying effect or functional defects due to expansion or infiltration of tumor cells, respectively. Because both ETTs and ETGTs are usually non-functional, the thyroid status is seldom altered and hence, the serum thyroid functional test is usually normal.

The diagnosis of ETGTs may be clinically challenging. Fine needle aspiration (FNA) are considered controversially to have diagnostic value. Although one article reported that the cytology and histopathology of thyroid carcinomas are in a close agreement, the majority of veterinary pathologists still regard FNA as unrewarding work because of frequent blood contamination and low possibility to differentiate benign tumors from malignant ones. To improve the diagnostic accuracy, assistant ultrasound guidance could be applied. However, histopathology is still required for the definitive diagnosis. As we have mentioned, an exclusively compact pattern may make a diagnosis of ETGTs problematic due to similar histological appearance with neuroendocrine tumors; immunohistochemistry is helpful in that situation. The recommended panel should include at least two of follows: 1. thyroid transcription factor-1 (TTF-1), the most convincing evidence of thyroid origin which can be expressed by both follicular epithelium and C cells; 2. markers for neuroendocrine tumors (synaptophysin, neuron specific enolase, chromogranin A) and, 3. thyroglobulin or calcitonin, to further differentiating whether the tumor originate from follicular cells or C cells. Thyroid scintigraphy, a promoting non-invasive nuclear imaging modality in veterinary medicine, not only provides valuable diagnostic information about the functional activity, the location and size, but also benefit the post-treatment follow-up and management.

Some criteria have been proposed for assessing the malignancy with prognostic significance investigated as well. Generally, the benign tumors are small, variably encapsulated, well demarcated and movable and show consistent growth pattern and minimal cytological atypia. In contrast, the thyroid carcinomas are usually large, irregularly shaped and may become fixed and poorly circumscribed because of extensive tumor involvement. Microscopically, there are frequent necrosis,

hemorrhage and presence of capsular or lymphatic/vascular invasion. It is believed that the size is proportional to the invasiveness, which determines the resectability. When the primary tumor volume exceeds 100 cm³, the metastatic potential is considered 100%.

Treatment for dogs with ETGTs is dictated by the size of the mass, extent of invasion and presence or absence of gross metastatic disease. When tumors are freely movable, surgery alone can be curative and provides the best outcome. However, when there is multicentric disease or metastasis, surgical resection is no longer recommended and alternative therapies, such as radiation or a carboplatin or adreomycin-based chemotherapy, should be considered.

References:

1. Campos, M., Ducatelle, R., Rutteman, G., Kooistra, H.S., Duchateau, L., de Rooster, H., Peremans, K., Daminet, S., 2014. Clinical, pathologic, and immunohistochemical prognostic factors in dogs with thyroid carcinoma. *Journal of veterinary internal medicine / American College of Veterinary Internal Medicine* 28, 1805-1813.
2. Ciaputa, R., Nowak, M., Kandefer-Gola, M., Dziedzic, K., Halupka, P., Pula, B., Kielbowicz, M., 2014. Morphological and immunohistological characteristics of follicular-compact thyroid carcinoma in dog. *Folia histochemica et cytobiologica / Polish Academy of Sciences, Polish Histochemical and Cytochemical Society* 52, 157-161.
3. Deim, Z., Szalay, F., Glavits, R., Bauer, A., Cserni, G., 2007. Carotid body tumor in dog: a case report. *The Canadian veterinary journal. La revue veterinaire canadienne* 48, 865-867.
4. Fischer, S., Asa, S.L., 2008. Application of immunohistochemistry to thyroid neoplasms. *Archives of pathology & laboratory medicine* 132, 359-372.
5. Ibrahim, N.A., Fadeyibi, I.O., 2011. Ectopic thyroid: etiology, pathology and management. *Hormones (Athens, Greece)* 10, 261-269.
6. Ip, Y.T., Dias Filho, M.A., Chan, J.K., 2010. Nuclear inclusions and pseudoinclusions: friends or foes of the surgical pathologist? *International journal of surgical pathology* 18, 465-481.
7. Kang, M.H., Kim, D.Y., Park, H.M., 2012. Ectopic thyroid carcinoma infiltrating the right atrium of the heart in a dog. *The Canadian veterinary journal. La revue veterinaire canadienne* 53, 177-181.
8. Liptak, J.M., 2007. Canine thyroid carcinoma. *Clinical techniques in small animal practice* 22, 75-81.
9. Noussios, G., Anagnostis, P., Goulis, D.G., Lappas, D., Natsis, K., 2011. Ectopic thyroid tissue: anatomical, clinical, and surgical implications of a rare entity. *European journal of endocrinology / European Federation of Endocrine Societies* 165, 375-382.
10. Paltrinieri, S., Riccaboni, P., Rondena, M., Giudice, C., 2004. Pathologic and immunohistochemical findings in a feline aortic body tumor. *Veterinary pathology* 41, 195-198.
11. Ramos-Vara, J.A., Miller, M.A., Johnson, G.C., Pace, L.W., 2002. Immunohistochemical detection of thyroid transcription factor-1, thyroglobulin, and calcitonin in canine normal, hyperplastic, and neoplastic thyroid gland. *Veterinary pathology* 39, 480-487.
12. Roth, D.R., Perentes, E., 2012. Ectopic thyroid tissue in the periaortic area, cardiac cavity and

aortic valve in a Beagle dog - a case report. Experimental and toxicologic pathology: official journal of the Gesellschaft für Toxikologische Pathologie 64, 243-245.

Case Number: 439

Slide No.: CO15-069-B3

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CASE HISTORY:

Signalment: Wet tissues of swine intestine were submitted from slaughterhouse.

Clinical History:

The intestines of a market hog, which were found abnormal by a slaughter inspection veterinarian, were submitted to GIVP of NCHU for pathological diagnosis.

Gross Findings:

The samples of jejunum and ileum were characterized by thickness of intestine wall which has more foldings than normal pigs. Incrassate mucosa and muscular layer, including circular layer and longitudinal layer, were distinct on the cross section.

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CASE RESULTS:

Histopathological Findings:

There were hypertrophy of the muscular layers of ileum, adenomatous proliferation of mucosa, and inflammatory cells consisting epithelioid cells and multinucleated giant cells infiltrated in the mucosa and submucosa. Much cellular debris and exfoliated epithelial cells accumulated in the lumen.

Differential Diagnosis

1. Salmonellosis
2. Swine dysentery
3. Whipworms

Diagnosis: Porcine proliferative enteritis (PPE)

Discussion:

Proliferative enteritis can occur in any pig past weaning age but is most commonly observed in finishing hogs, bred gilts, sows and boars. The disease occurs throughout the year. In statistics, there are generally 1-10% of bred gilts, sows, boars, or finishing hogs are affected in USA. Up to 50% of feeder pigs may be affected. The death rate is extremely variable.

The most common clinical signs of feeder pigs are persistent or intermittent diarrhea for several days to weeks. Their feces are soft to fluid and are yellow to dark brown. Blood-tinged feces or feces with flecks of yellow fibrin may also be observed. Nonhemorrhagic form of the disease often affects 18-36 kg body weights pigs and is characterized by sudden onset of diarrhea. Feeder pigs lose weight and eventually appear stunted and emaciated. Feed conversion efficiency (FCE) of the affected pigs is usually reduced. A few sows, boars, and finishing hogs may have similar clinical signs. Death often ensues within 24 to 72 hours after the onset of hemorrhagic diarrhea.

The disease is so named because a constant observation at necropsy is a thick-walled distal jejunum and ileum and proliferation (increased numbers) of crypt epithelial cells is observed upon microscopic examination of tissue specimens from the affected intestine. The cecum and proximal colon may be similarly affected. While opening affected intestine, the lumen usually contains combination of clotted blood and yellow pseudomenbranes. Removal of this material reveals a demonstrably thick and red mucosal surface. In our cases, red mucosal surface was not as common as the research because of the samples were wet tissue that has fixed by formalin.

Etiology of PPE is *Lawsonia intracellularis*, an intracellular, gram-negative, small rod-shaped bacterium. This agent has been identified as a member of the genus *Campylobacter* before. More specifically, two agents from this genus, *Campylobacter sputorum* subspecies *mucosalis* and *Campylobacter hyointestinalis*, have been associated with the disease. Based on 16SrRNA gene sequence, *Lawsonia intracellularis* is related to *Desulfovibrio*, a sulfate-reducing bacteria and *Bilophila wadsworthia*. The organism has been cultivated only in cell cultures, and attempts to

propagate it in cell-free medium have failed. Koch's postulates have been fulfilled by inoculation of pure cultures of *L. intracellularis* into conventionally reared pigs; typical lesions of the disease were produced, and *L. intracellularis* was reisolated from the lesions. Inoculation of *L. intracellularis* into gnotobiotic pigs does not cause the disease; therefore, other factors in the conventionally reared pig may contribute to development of lesions.

Natural infection has not been detected in either wild or laboratory mice. However, lab mice studies represent a potential reservoir, therefore studies have further implications for the ecology and epidemiology of proliferative enteropathy, also referred to as proliferative ileitis, which is caused by infection with *L. intracellularis*, particularly in pigs. Though the major animal that is most susceptible are pigs, *L. intracellularis* has been detected laboratory animals such as primates pig, horse, dog, rat, guinea pig, rabbit and hamster. Though there is evidence of infection in primates, there is currently no direct evidence that *L. intracellularis* can infect humans.

Proliferative enteritis is diagnosed by gross and microscopic examination of the intestinal lesions. A thick ileum with either fibrinous exudate or blood in the lumen is usual findings at necropsy. However, in some cases lesions are mild and require microscopic evaluation. In contrast to the lesions associated with PPE, the lesions of swine dysentery are confined to the large intestine and consist of a catarrhal to fibrino-hemorrhagic colitis. Mucus mixed with fibrin and flecks of blood usually covers the mucosa, sometimes forming a thick pseudomembrane. Necrosis occurs in advanced cases but is typically superficial. The causative organism, *Treponema hyodysenteriae*, can be demonstrated in colonic smears or cultured from the colon of affected pigs. Enteric lesions of porcine salmonellosis are also most severe in the large intestine. The caecum and colon are usually full of fluid and there may be focal or diffuse necrosis of the mucosa. Discrete "button ulcers" may occur, especially in resolving cases. Mild lesions may be present in the ileum. Histologically the lesions of swine dysentery and salmonellosis are characteristic and can usually be differentiated from PPE.

Reference:

1. I. Dinev, M. Lyutskanov, I. Nikiforov, V. Urumova. Cases of porcine proliferative enteropathy in Bulgaria and testing of some alternative methods of diagnostics. No. 2, P. 133-139. Bulgarian Journal of Veterinary Medicine, September, 2006.
2. K. G. Thompson, P. Verhock. Porcine proliferative haemorrhagic enteropathy and its differential diagnosis. Vol. 12, No.3, P.2-3. Surveillance, 1985.
3. L. Larry, G. Robert, K. Harold, T. Leon. Porcine proliferative enteritis (intestinal adenomatousis, necroproliferative enteropathy, proliferative ileitiss). Pork industry handbook. Michigan state university. Extension Bulletin E-1912, July 1985.
4. S. Mcorist, C. J. Gebhart, R. Boid, S.M. Barns. Characterization of *Lawsonia intracellularis* gen. nov., sp. nov., the Obligately Intracellular Bacterium of Porcine Proliferative Enteropathy. Vol. 45. P. 820-825. International journal of systematic bacteriology, October, 1995.

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Slide view: http://www.ivp.nchu.edu.tw/slide_view.php?id=850

http://www.ivp.nchu.edu.tw/slide_view.php?id=849

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CASE HISTORY:

Signalment:

A 54-year-old male with an ulcerative mass of L't retromolar trigone and posterior buccal mucosa

Clinical History:

This 54-year-old male came to dental visit due to a huge ulcerative mass over the L't cheek since 2-3months ago. He had personal habits of alcohol drinking betel nuts chewing, and smoking. He received incision biopsy and report was squamous cell carcinoma. Surgical intervention was suggested but the patient declined. After five months, he decided to receive surgical intervention due to facial skin perforation. However, liver and spleen scan reported liver metastasis was suspected. Abdomen echo showed two hypoechoic tumor of liver Seg 5, 7, 8 area. Echo-guide biopsy was done and report was hepatoma. Surgical resection was advised and he received right hepatectomy and cholecystectomy. He was discharged 8 days after the operation. After one month, he received tumor wide excision of R't buccal tumor, radical neck dissection and double free flap reconstruction. The pathologic diagnosis was showed below. Postoperative course was uneventful and he was discharged after 22 days.

Clinical pathology:

WBC: 7190 /uL;Hgb: 12.9 g/dL; PLT: 202000/uL; AST: 27 U/L; ALT: 19 U/L;BUN: 6 mg/dL; CREA: 0.65 mg/dL; Na: 135 mmol/L; K: 4.0 mmol/L; Glu 312 mg/dL;Alb: 3.1 g/dL; ALP: 72 U/L; T-Bil: 0.9 mg/dL; D-Bil: 0.1 mg/dL; HBsAg (-); HCV-Ab (-); AFP: 8.5 ng/mL; CA-199: 30.8 U/mL; SCC: 1.2 U/mL; CEA: 2.4 U/mL

Gross Findings:

Liver

The specimen of liver tissue was already partially cut open, measuring 17x 12 x 9 cm in size, in fresh state. There were two lesions. The larger one was located at Seg 5, measuring 5.5x4.5x4.1cm, immediate beneath the liver capsule, grossly. Gray-white color and soft consistency, partial encapsulation. The smaller one, measuring 4.2x3.0x3.0cm, was located at Segment 7-8 area, also lying immediate beneath hepatic capsule, light yellow-tan and soft- elastic.

Oral and neck

The specimen of oral tumor and neck measured 20x15.5 x5.5cm as a whole, facial skin, partial

mandible and left neck tissues were all included as one. The tumor was irregular gray-black and focal light red fungating buccal verrucous tumor, emerged into retromolar irregular tumor growth, measuring 5 cm in greatest dimension, 3.6 in maximal invasion depth.

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CASE RESULTS:

Histopathologic Findings:

Sections of the liver tumor show grade II hepatocellular carcinoma composed of atypical liver cells arranged in compact solid and trabecular pattern. Focal tumor necrosis is also noted. Macrovesicular fatty change and mild fibrosis are noted in the non-tumor liver part.

Sections of the retromolar tumor show well differentiated keratinized squamous cell carcinoma composed of atypical squamous cells with invasion through cheek tissue and muscular bundles into facial skin.

Differential Diagnosis:

Metastatic oral squamous cell carcinoma

Diagnosis:

Hepatocellular cell carcinoma, Seg5, 7,8 area, pT3aN0M0, stage IIIA.

Squamous cell carcinoma, pT4aN0M0, stage IVa.

Discussion:

The incidence of other primary neoplasms in patients with HCC has been reported to range from 2.95% to 20.3%. Risk factors include cirrhosis, hepatitis C, hepatitis B, diabetes mellitus and smoking. A second primary tumor in the setting of HCC is relatively common, with clustering of genitourinary and gastrointestinal malignancies. But cases of oral cancer coexisting with HCC have rarely been reported.

A retrospective study revealed that there was no statistically significant difference in overall survival between patients with HCC and a second primary malignancy and those with HCC only. It suggested that association of a second primary malignancy with HCC maybe not confer a worse prognosis.

According to our standing, it is the first case of successful resection of synchronous advanced oral SCC and HCC.

References:

1. Lai CR, Liu HC. Hepatocellular carcinoma coexisted with second malignancy--a study of 13 cases from a consecutive 440 autopsy cases of HCC. *Zhonghua yi xue za zhi (Taipei)* 46: 202-207, 1990.
2. Kanematsu M, Imaeda T, Yamawaki Y, et al. Hepatocellular carcinoma with extrahepatic primary neoplasms. *Gastrointest Radiol* 17: 53-57, 1992.
3. de Pangher Manzini V, Calucci F, Terpin MM, et al. Multiple primary malignant tumors in patients with hepatocellular carcinoma. A review of 29 patients. *Tumori* 82: 245-248, 1996.
4. Wong LL, Lurie F, Takanishi DM, Jr. Other primary neoplasms in patients with hepatocellular

cancer: prognostic implications? Hawaii Med J C. Y. Hung et al./JCOS 24(2008) 243-250
24966: 204, 206-208, 2007.

Case Number: 441

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CASE HISTORY:

Signalment: Dog, mongrel, female (spayed), 6 year-old

Yellowish urine and jaundice were noted since 27 May, 2012. The X- ray showed microhepatica and the ultrasonic findings revealed increased echogenicity of liver parachyma and gall bladder was very small. Cholangiohepatitis / cholestasis with hepatic dysfunction were tentative diagnosed. Initially, the dog was treated with fresh frozen plasma, antibiotic and fluid therapy. With the time, the dog showed more clinical signs associated with hepatic dysfunction, such as PU/PD, soft gray stool, weight loss, vomiting, chewing-like behavior (neurological sign) and ecchymosis. Ranitidine, metoclopramide, lactulose, Vit-K, Vit- B, folic acid, SAME, Urso, prednisolone (only a short time) were added for symptomatic therapy. However, persistent hypoalbuminemia, ascites and edema of the four limbs were still noted since Aug. 2012. Mushy hematochezia and dermatological lesions (superficial necrotic dermatitis) were observed during the week before death. The dog was euthanized on 16 Oct., 2012 because of severe anemia and poor body condition.

Gross Findings:

Wet tissues submitted for histopathological diagnosis.

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CASE RESULT:

Serum biochemistry :

ALKP 2649 U/L(0-488)

ALT 1520 U/L(19-52, female)

AST 659 U/L (21-47, female)

Total bilirubin 15.3 mg/dL(0.9-3.9 umol/L)

Mild hypoglycemia (postprandial glucose 78 mg/dL)

Histopathological Findings:

1. Hepatic cells degeneration and necrosis, with passive congestion, centrilobular , zone 3, subacute, severe, liver
2. Hemosiderosis and bile stasis, centrilobular to diffuse, subacute, severe, liver
3. Mononuclear cells infiltration and bile duct proliferation, moderate, periportal triad, liver
4. Mineralization, subacute, moderate, hepatic arteriole, liver
5. Epidermatitis and dermatitis, pyo-granulomatous, compatible with GMS and PAS positive single and endosporulating protothecal cells, severe, skin
6. Lymphadenitis,plasmahistiocytic, compatible with GMS and PAS positive single and endosporulating protothecal cells, diffuse, subacute, severe, lymph node

Differential Diagnosis:

1. Other endosporulators: Chytrid, chlorella, rhinosporidium, coccidioides
2. *Prototheca zopfii* (2-12 um) and *P. wickerhamii* (10-25 um)
3. Stain with PAS, GMS, mucicarmine, gram positive
4. Cell wall lacks muramic acid and glucosamine
5. Gross findings includes nodules in kidney, papillary necrosis, nodules in intestine serosa, thickened wall, ulceration and necrosis, yellow discoloration of liver, exudate in anterior chamber of eye and vitreous
6. Histopathological findings includes lymphoplasmacytic to pyogranulomatous inflammation with algae in macrophages and free

Dagnosis:

1. Protothecosis, disseminated form, green algal infection, compatible with GMS and PAS staining positive single and endosporulating protothecal cells, severe, subacute, involving lymph node, spleen and skin
2. Idiopathic chronic active hepatitis, liver
3. Hepatic cells degeneration and necrosis, with passive congestion, centrilobular , zone 3, subacute, severe, liver

4. Arterial medial mineralization, subacute, moderate, hepatic arteriole, liver

Discussion:

Protothecosis is caused by *Prototheca*, a saprophytic achlorophyllous alga that is closely related to the green algae of the genus *Chlorella*. In culture or tissue, the cells are spherical to oval and range from 1.3 to 13.4 μm in diameter and 1.3 to 16.1 μm in length. The size varies with the stage of development, the species, and the medium used for culture. Organisms have a hyaline cell wall approximately 0.5 μm thick; a granular, basophilic cytoplasm; and a small, centrally located nucleus. In smaller, immature forms, a nucleus may not be evident. Reproduction is by endosporulation, with irregular nuclear and cytoplasmic cleavage resulting in 2 to 20 or more endospores. The mother cell ruptures, discharging tiny replicas that enlarge, mature, and repeat the life cycle. Empty cell casings scattered among intact algal cells may be seen in lesions. The prognosis for the canine disseminated form of protothecosis is grave. *Prototheca* are ubiquitous in the environment. Three species are currently recognized as *P. stagnans*, *P. wickerhamii* and *P. zopfii* of which the last two have been incriminated as pathogens. Any animal brought to the hospital with history of protracted bloody diarrhoea coupled with ocular lesions should be suspected for protothecosis. Ecologically, *Prototheca* species are primarily found in raw and treated sewage, slime flux of trees, and animal wastes. From these sources, *Prototheca* organisms secondarily contaminate water systems, soil, and food, from which they may be ingested by or come into contact with injured skin or mucosa of people and animals. Although *Prototheca* organisms can be isolated from freshly voided human and animal feces, the algae are regarded as transient contaminants and only rarely cause disease. Protothecosis is a sporadic illness that primarily develops when the host's immune resistance is suppressed or altered, often by a preexisting or concurrent disease.

References:

1. Greene CE, Rakich PM, Latimer KS. Protothecosis. In: Greene CE, ed. Infectious diseases of the dog and cat. 3rd ed. Saunders Elsevier, St. Louis, Mo., 659-665, 2006.
2. Hsu CD, Liu KH, Shen WC, Yen IF, Chien YC, Liu CH. Case report: canine cutaneous protothecosis caused by *Prototheca wickerhamii* in a Dog. Taiwan Vet J 39 (1): 50-58, 2013.
3. Souza LN, Estrela-Lima A, Moreira ELT, Ribeiro LGR, Xavier MN, Silva TMA, Costa EA, Santos RL. Systemic canine protothecosis. Braz J Vet Patho 2: 102-106, 2009.

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。

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. case435-440)

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	Ependyoblastoma	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, papillary carcinoma, metastatic	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

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

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)-positive 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
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	Feline	中興大學獸醫學系
280	40	Metastatic malignant melanoma in the brain and inguinal lymph node	Human	花蓮慈濟醫院病理科
281	41	Tonsil Angiosarcoma	Human	羅東博愛醫院
282	41	Malignant mixed mullerian tumor	Human	耕莘醫院病理科
283	41	Renal cell tumor	Rat	中興大學獸醫學系
284	41	Multiple Myeloma	Human	花蓮慈濟醫院病理科
285	41	Myopericytoma	Human	新光吳火獅紀念醫院
287	41	Extramedullary plasmacytoma with amyloidosis	Canine	臺灣大學獸醫學系
288	42	Metastatic follicular carcinoma	Human	羅東聖母醫院病理科
289	42	Primitive neuroectodermal tumor (PNET), T-spine.	Human	羅東博愛醫院病理科
292	42	Hemangioendothelioma of bone	Human	花蓮慈濟醫院病理科
293	42	Malignant tumor with perivascular epithelioid differentiation, favored malignant PEComa	Human	彰化基督教醫院
297	43	Mucin-producing cholangiocarcinoma	Human	基隆長庚醫院
300	43	Cutaneous epitheliotropic lymphoma	Canine	臺灣大學 獸醫專業學院
301	43	Cholangiocarcinoma	Felis Lynx	臺灣大學 獸醫專業學院
302	43	Lymphoma	Canine	臺灣大學 獸醫專業學院
303	43	Solitary fibrous tumor	Human	彰化基督教醫院

304	43	Multiple sarcoma	Canine	臺灣大學 獸醫專業學院
306	44	Malignant solitary fibrous tumor of pleura	Human	佛教慈濟綜合醫院暨 慈濟大學
307	44	Ectopic thymic carcinoma	Human	彰濱秀傳紀念醫院 病理科
308	44	Medullary carcinoma of the right lobe of thyroid	Human	彰化基督教醫院病 理科
309	44	Thyroid carcinosarcoma with cartilage and osteoid formation	Canine	臺灣大學 獸醫專業學院
312	44	Lymphocytic leukemia/lymphoma	Koala	臺灣大學 獸醫專業學院
313	45	Neuroendocrine carcinoma of liver	Human	佛教慈濟綜合醫院暨 慈濟大學
314	45	Parachordoma	Human	羅東博愛醫院病理科
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

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 lymphangiomyomatosis	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			
腫瘤	402	57	1. Leukemia, nonlymphoid, granulocytic, involving bone marrow, spleen, liver, heart, lungs, lymph nodes, kidney, hardian gland, duodenum and pancreas. 2. Pinworm infestation, moderate, large intestines. 3. Fibrosis, focal, myocardium.	Mouse	國家實驗動物中心
	403	57	Non-secretory multiple myeloma with systemic amyloidosis	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	404	57	1. Hepatocellular adenocarcinoma, multifocal, severe, liver 2. Hemorrhage, moderate, acute, body cavity 3. Bumble foot, focal, mild, chronic, food pad 4. cyst and atherosclerosis, chronic, testis	Goose	國立中興大學獸醫病理生物學研究所
	406	57	Castleman's disease	Human	羅東博愛醫院
	407	58	Hepatoid adenocarcinoma of colon with multiple liver metastases	Human	羅東博愛醫院
	408	58	Cardiac and pulmonary melanoma	Pig	國立中興大學獸醫病理生物學研究所
	409	58	Double Tumors: (1) small cell carcinoma of lung (2) Hodgkin's lymphoma, mixed cellularity type. Acrokeratosis paraneoplastica	Human	佛教慈濟綜合醫院暨慈濟大學病理科
	410	58	Von Hippel–Lindau disease	Human	奇美醫院病理部
	411	58	Multiple neoplasia	Tiger	國立屏東科技大學獸醫教學醫院病理科
	412	58	Hepatocellular carcinoma and multiple myeloma	Human	中山醫學大學醫學系病理學科暨附設醫院病理科
	413	59	DEN plus AAF carcinogens induced hepatic tumor in male rats	Rat	中興大學獸醫病理生物學研究所
	417	59	Alveolar soft part sarcoma	Human	高雄醫學大學附設中和紀念醫院病理科
	418	60	Seminoma associated with supernumerary testicles	Human	羅東博愛醫院
	422	61	Retinoblastoma in a baby girl	Human	彰化基督教醫院
	423	61	Colloid goiter in a female Radiated tortoise (<i>Astrochelys radiata</i>)	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	
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 cavitory 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 (<i>Lawsonia intracellularis</i> infection)	Porcine	屏東縣家畜疾病防治所
68.	9	Liver abscess (<i>Klebsillae pneumoniae</i>)	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 <i>Streptococcus</i> 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 <i>Leptospira</i> 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

細菌	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	<i>Staphylococcus</i> 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, <i>Coxiella burnetii</i>	Goat	台灣動物科技研究所
	321	46	Pneumonia, <i>Burkholderia pseudomallei</i>	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	<i>Chromobacterium violaceum</i> Septicemia	Gibbon	Bogor Agricultural University, Indonesia
	353	50	Salmonellosis	Pig	國立中興大學 獸醫學院
	367	52	Melioidosis (<i>Burkholderia pseudomallei</i>), lung	Human	花蓮慈濟醫院
	370	52	Suppurative bronchopneumonia (<i>Bordetella trematum</i>) with <i>Trichosomoides crassicauda</i> infestation	Rat	國立中興大學 獸醫學院
	374	53	Pulmonary coccidiomycosis	Human	彰化基督教醫院
	375	53	Paratuberculosis in <i>Macaca cyclopis</i>	<i>Macaca cyclopis</i>	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, <i>Mycobacterium abscessus</i>	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	<i>Neisseria</i> Infected Pneumonitis	Cat	中興大學獸醫學系
385	54	<i>Mycobacteria avian complex dacryocystitis</i>	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 <i>Streptococcus</i> 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	
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	台灣大學獸醫學系

			sun bears	
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	Pseudorabies	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, polyomavirus 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
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

病毒	221	31	Canine distemper virus Canine adenovirus type II 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 <i>Salmonella typhimurium</i> .	Swine	屏東縣家畜疾病防所
	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.	Human	三軍總醫院

		Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary)			
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 cavitory 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	
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	
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

寄生蟲	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 <i>Toxocara canis</i> 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 <i>Angiostrongylus cantonensis</i>	Human	台北榮民總醫院 病理檢驗部
	156	19	<i>Parastrongylus cantonensis</i> infection	Formosan gem-faced civet	中興大學獸醫學院
	157	19	<i>Capillaria hepatica</i> , <i>Angiostrongylus cantonensis</i>	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	<i>Psoroptes cuniculi</i> 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	<i>Capillaries philippinesis</i>	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 <i>Spironucleus (Hexamita) muris</i>	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	<i>Trichosomoides crassicauda</i> , 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 (<i>Bordetella trematum</i>) with <i>Trichosomoides crassicauda</i> 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
原蟲	4.	1	Cryptosporidiosis	Goat	臺灣養豬科學研究所
	15.	2	Amoebiasis	Lemur fulvus	臺灣養豬科學研究所
	16.	2	Toxoplasmosis	Squirrel	臺灣養豬科學研究所
	17.	2	Toxoplasmosis	Pig	屏東技術學院 獸醫學系
	51.	7	<i>Pneumocystis carinii</i> 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	臺灣養豬科學研究所
	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
立 克 次 體	229	32	Necrotizing inflammation due to scrub typhus	Human	佛教慈濟醫院病理科
	251	36	Scrub typhus with diffuse alveolar damage in bilateral lungs.	Human	佛教慈濟醫院病理科
皮 膚	216	30	Cytophagic histiocytic panniculitis with terminal hemophagocytic syndrome	Human	佛教慈濟綜合醫院病 理科
	359	51	Eosinophilic granuloma with fungal infection, Skin	Cat	國立臺灣大學 獸醫專業學院
	360	51	Septa panniculitis with lymphocytic vasculitis	Human	慈濟綜合醫院暨慈濟 大學
其 它	9.	2	Perinephric pseudocyst	Cat	台灣大學獸醫學系
	10.	2	Choledochocyst	Human	長庚紀念醫院
	11.	2	Bile duct ligation	Rat	中興大學獸醫學系
	37.	4	Myositis ossificans	Human	台北醫學院
	75.	9	Acute yellow phosphorus intoxication	Rabbits	中興大學獸醫學系
	76.	10	Polycystic kidney bilateral and renal failure	Cat	美國紐約 動物醫學中心
	80.	10	Glomerular sclerosis and hyalinosis, segmental, focal, chronic, moderate Benign hypertension	SHR rat	國防醫學院 & 國家 實驗動物繁殖及研究 中心
	83.	10	Phagolysosome-overload nephropathy	SD rats	國家實驗動物 繁殖及研究中心
	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 endometrial 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	

其它

				治所
159	20	Hypertrophic cardiomyopathy	Pig	台灣大學獸醫學系
165	21	Chinese herb nephropathy	Human	三軍總醫院 病理部及腎臟科
167	21	Acute pancreatitis with rhabdomyolysis	Human	慈濟醫院病理科
171	21	Malakoplakia	Human	彰化基督教醫院
183	25	Darier's disease	Human	高雄醫學大學病理科
191	27	1. Polyarteritis nodosa 2. Hypertrophic Cardiomyopathy	Feline	台灣大學獸醫學系
193	27	Norepinephrin cardiotoxicity	Cat	台中榮總
196	27	Cardiomyopathy (Experimental)	Mice	綠色四季
212	30	Kikuchi disease (histiocytic necrotizing lymphadenitis)	Lymphadenitis	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	Eosinophilic 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

其他	361	51	Hepatotoxicity of SMA-AgNPs	Mouse	國立中興大學獸醫病理生物學研究所
	363	51	Hypertrophy osteopathy	Cat	國立臺灣大學獸醫專業學院
	372	52	Snake bite suspected, skin and spleen	Monkey (red guenon)	國立臺灣大學獸醫專業學院
	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 (<i>Iguana iguana</i>)	Iguana	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满兩年者。
- (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，學生會員一百元，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，學生會員一百元。

【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。

