

中華民國比較病理學會
九十七年度第四十二次比較病理學研討會

【「骨骼肌肉及軟組織疾病之病理診斷」】



主辦單位：中華民國比較病理學會

台北市立動物園

時間：中華民國九十七年三月八日（星期六）

地點：臺北市文山區新光路二段 30 號

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中華民國比較病理學會九十七年度會員大會暨第四十二次比較病理學研討會
【「骨骼肌肉及軟組織疾病之病理診斷」或其他比較病理相關病例】
議程表

時間：中華民國九十七年三月八日（星期六）上午 08：40~下午 17：30

地點：台北市立動物園教育中心演講廳

地址：臺北市文山區新光路二段 30 號 TEL: 02-29382300#630 (<http://www.zoo.gov.tw/>)

主辦單位：中華民國比較病理學會 台北市立動物園

| 時 間 | 議 程 |
|-------------|---|
| 08:40~09:00 | 報 到 主持人 |
| 09:00~09:20 | 主席致詞 呂福江 理事長 來賓致詞 |
| 09:20~10:00 | 病例討論 Metastatic bone tumor 呂福江 理事長 Case 288 羅東聖母醫院-祝志平 主任 |
| 10:00~10:40 | 病例討論 T-spine, Primitive neuroectodermal tumor Case 289 羅東博愛醫院-施洽雯 主任 |
| 10:40~11:10 | Coffee Break |
| 11:10~11:50 | 病例討論 Acute Bacterial Skin Infection with Skull Hemorrhage in a Baby Formosa Macaque 祝志平 主任 Case 290 中興大學獸醫病理研究所-廖俊旺 教授 |
| 11:50~12:20 | 會 員 大 會 |
| 12:20~13:30 | 午 餐 (中華民國比較病理學會理監事會議) |
| 13:30~14:10 | 病例討論 Leptospirosis Case 291 台灣大學獸醫學研究所-邱國皓 獸醫師 |
| 14:10~14:50 | 病例討論 Epithelioid hemangioendothelioma, bone 施洽雯 主任 Case 292 花蓮慈濟醫院病理科-李明勳 醫師 |
| 14:50~15:30 | 病例討論 Malignant tumor with perivascular epithelioid differentiation Case 293 彰化基督教醫院病理科-許惠婷 醫師 |
| 15:30~15:50 | Rest |
| 15:50~16:30 | 病例討論 Vascular malformation of the lower extremity in a Siberian Husky 劉振軒 教授 Case 294 台灣大學獸醫學研究所-蔡依潔 獸醫師 |
| 16:30~17:10 | 病例討論 FIP(Feline infectious peritonitis) Case 295 中興大學獸醫病理所-陳明樺 獸醫師 |
| 17:10~17:30 | 綜 合 討 論 |

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

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

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

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

第五章 經費及會計

第二十九條 本會經費來源如下：

- 一、入會費：一般會員新台幣壹仟元，學生會員壹佰元，贊助會員伍仟元，於入會時繳納。
- 二、常年會費：一般會員新台幣五百元，學生會員壹佰元。
- 三、事業費。
- 四、會員捐款。
- 五、委託收益。
- 六、基金及其孳息。
- 七、其他收入。

第三十條 本會會計年度以國曆年為準，自每年一月一日起至十二月三十一日止。

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

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

第三十三條 本章程未規定事項，悉依有關法令規定辦理。

第三十四條 本章程經大會通過，報經主管機關核備後施行，變更時亦同。

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

病例摘要

Case 288 : 羅東聖母醫院 0706525A1

Clinical history: A 68 year old female, suffered from fracture over right femoral shaft when she got a sprain injury with the result of painful deformity over right thigh. Then she was sent to SER and X-ray film demonstrated fracture of right femoral shaft in the middle third and osteoporosis. Her past history revealed cervical cancer in stage Ib and received irradiation for 29 times. The PV examination showed no local recurrence of cervical cancer. Tc-99m MDP whole body scan showed increased MDP uptake in the L3 spine, bilateral shoulders and right femoral shaft. Operation finding showed severe osteoporosis and the tumor tissue in the fracture site was sent for pathological examination.

Case 289 : 羅東博愛醫院 LP-07-4610

Clinical history: This 14 y/o girl patient who suffered from back pain since one month ago. Physical examination showed numbness of bilateral legs and numbness over T6 and below T6 level. MRI of T-L spine with contrast enhancement showed a huge mass lesion at T1 vertebral body, spinal canal, posterior elements, paraspinal extension and adjacent muscles with compression of spinal cord. Laminectomy and excision of tumor was performed on June 1, 2007

Case 290 : 國立中興大學獸醫病理學研究所 CS 07-0418

Clinical history: A female baby Formosa Macaque (*Macaca cyclopis*) was accidentally found in banana field at Nanto county. Her umbilical cord has contracted recently. She presented anorexia and weakness when she was brought to the "Endemic Species Research Institute" for help on April 13, 2007. The veterinarians of ESRI gave a light to warm her body and fed with milk. Additionally, she was treated with nutritional fluid and antibiotic of Enrofloxacin treatment. However, multiple and numerous erythema, became yellowish to whitish plaques were gradually noted on her body. Unfortunately, she died after 2 days of treatment, and the carcass was brought to the Animal Disease Diagnostic Center, National Chung-Hsing University for pathological diagnosis.

Case 291 : 國立台灣大學獸醫學研究所 NTU07-752a

Clinical history: A 5 years old German shepherd presented with poor appetite, pale

mucosa and icterus. Routinely vaccine inoculation was performed every year regularly. The laboratory examination showed liver and renal dysfunction. At necropsy, the mucosa of the gastrointestinal tract and bilateral kidneys revealed yellowish. The liver revealed enlargement, fragile and yellowish in color.

Case 292 : 花蓮慈濟醫院病理科 S2004-3514A

Clinical history: This 4 year and 8month old boy was noted irritable crying while changing diaper and putting on shoes since pne year old. Image study revealed multiple osteolytic bony lesion over bilateral femoral, tibial, fibular, and humeral bones and hip joints. However, aspiration biopsy revealed no definite malignancy. Open biopsy at left femur proved malignancy. The microscopic slide submitted was from the left femur.

Case 293 : 彰化基督教醫院病理科

Clinical History: A 83 year-old man presented with poor appetite for several days. Epigastric pain and abdominal fullness were told. No fever, nausea or vomiting was noted. The physical examination showed oval and distended abdomen without tenderness or rebounding pain. Murphy's sign was negative. Abdominal ultrasound sonography revealed a huge mass, multiple hepatic cysts and left hydronephrosis. The computed tomography scan showed one huge retroperitoneal mass with central necrosis. The left ureter and descending colon had been pushed anteriorly due to the mass effect.

Case 294 : 國立台灣大學獸醫學研究所 ntu 07-81f

Clinical history: A 1-year-old, male Siberian Husky was presented for weight-bearing lameness. Severely congested vessels along with palpable superficial thrill were apparently seen on left thigh and arteriovenous disturbance was identified through the colored Doppler sonography. A network of vascular plexus (nidus) in the left thigh area was delineated on the computed tomogram (CT). The musculature was found drastically replaced by cavernous, blood-filling channels on gross postmortem examination of the left hindlimb.

Case 295 : 國立中興大學獸醫病理學研究所 CS 08-064-4

Clinical history: This 2-year-old mixed female cat was presented with mucoid nasal discharge , epiphora, sneezing, anorexia and jaundice on 10/1/2007. Blood examination for FeLV/FIV and Toxoplasma were negative. The cat was expired on 1/17/2008.

Comparative Pathology Case 288

Contributors :

祝志平 MD. MS., 羅東聖母醫院病理科

許永祥 MD. MS., 花蓮慈濟醫院病理科

Clinical History: A 68 year old female suffered from fracture over right femoral shaft when she got a sprain injury with a result of painful deformity over right thigh. Then she was sent to SER and X-ray demonstrated fracture of right femoral shaft in the middle third and osteoporosis was also noted. Her past history revealed cervical cancer, stage I b, and received irradiation for 29 times. The pelvic examination showed no local recurrence of cervical cancer. Tc-99m MDP whole body scan showed increased MDP uptake in the L3 spine, bilateral shoulder and right femoral shaft. The operation finding showed severe osteoporosis and tumor tissues, up to 3.2 x 1.8 x 1.2 cm. in the fractured site. Follow up thyroid aspiration showed follicular lesion.

Diagnosis:

SW10706525: Bone, femoral, right, biopsy, showing metastatic follicular carcinoma.
(NW10800275: Thyroid aspiration cytology: follicular neoplasm)

Immunohistochemistry surveys:

1. SW10776525: CK20, Hepatocyte::(-)
2. SW10776525: CK7, TTF-1: (+)

Histopathology: Both sections show solid nests of uniform cancer cells with clear cytoplasm and round nuclei, infiltrating within bone trabeculae.

Differential diagnosis:

1. metastatic cervical carcinoma, clear cell type.
2. metastatic carcinoma, from thyroid, liver or kidney.

Diagnostic criteria:

1. TTF-1 is rarely seen in ca outside the lung or thyroid
2. 2 of 286 adebicarcinomas of nonpulmonary and nonthyroid types exhibited TTF-1 immunoreactivity: prostate, urinary bladder, uterine cervix..
3. Immunophenotype: key diagnostic points of thyroid carcinomas:
 - A. CK 7 is 100 % positive in papillary and follicular ca.

- B. CK20 is 26 % positive in papillary and 12 % in follicular ca..
- C. High molecular weight CK(34bE12) is positive in more than 90 % of papillary ca.
- D. Vimentin is coexpressed regularly in thyroid ca.
- E. CEA is absent in follicular-papillary ca but positive in medullary ca.
- F. .PDCA contains less TGB than do better differentiated tumors.
- G. TBG is present in more than 95 % of papillary and follicular carcinomas.

Discussion:

1. key diagnostic points of TTF-1:
 - A. nuclear immunostaining in all carcinomas of thyroid origin of any histology type—follicular type (100 %), papillary type (96 %), medullary type (90 %), Hurthle cell (20 %), anaplastic type (0%).
 - B. nuclear immunostaining of the vast majority of carcinomas of the lung—adenocarcinomas (75 %), SCLC (> 90 %), and large cell ca, with a minority of SQCC (10 %).
2. Thyroglobulin staining is invaluable for confirming the thyroid origin of a metastatic tumor.
3. The mean age of follicular carcinoma of thyroid in minimally invasive type is 48 years, while in widely invasive type: 55 years. RAS oncogene mutation and PAX8/PPAR γ fusion are noted. Most patients present with a thyroid mass, but up to 11 % of patients present initially with distant metastasis, such as bone pain, fracture or a pulsatile mass in soft tissue. The main mode of spread is hematogenous (predilection sites being bone and lung) rather than lymphatic. The metastatic deposits from follicular carcinoma are morphologically similar to the primary tumor, but they can be so deceptively bland as to mimic normal thyroid tissue. In widely invasive type, 29 % of patients died of disease, 41 % were alive with disease, and only 22 % were alive without disease. This type cancer is aggressive and has to be treated by total thyroidectomy, radioactive iodine and suppressive thyroxine. Distant metastasis at presentation is a highly unfavorable prognostic factor. Bone metastasis is particularly ominous. Unfavorable outcome with long-term mortality of 30- 50 % are noted.
4. Role of IHC in the diagnosis of follicular neoplasms.:
 1. IHC is usually not required except for tumors with unusual morphological features such as prominent fibrovascular septa, signet ring cells, clear cells or a hyalinizing trabecular pattern. The follicular nature can be confirmed by positive staining for thyroglobulin or TTF-1. Variable antibodies have been studied but none has so far been shown to be foolproof: CEA, p21, p27, ki67 EGF,

p-glycoprotein and HMGI(Y) have not been proven to be useful.

Although some antibodies, such as TPA, Leu-7, HBME-1, MMP-2, MMP-7 and COX-2 are reported to show differential staining of follicular adenoma and carcinoma, the low discriminatory power precludes their application for routine diagnostic purpose.

5. Clear cell adenocarcinoma of the cervix is a rare malignancy, which may occur sporadically or be associated with diethylstilbesterol (DES) exposure in uterus.

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Comparative Pathology Case 289

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Clinical history: This 14 y/o girl patient who suffered from back pain since one month ago. Physical examination showed numbness of bilateral legs and numbness over T6 and below T6 level. MRI of T-L spine with contrast enhancement showed a huge mass lesion at T1 vertebral body, spinal canal , posterior elements , paraspinal extension and adjacent muscles with compression of spinal cord. Laminectomy and excision of tumor was performed on June 1, 2007.

Diagnosis: Primitive neuroectodermal tumor (PNET), T-spine.

Gross findings: The specimen submitted consisted of about 15 bone and soft tissue fragments measuring up to 4.5 x 3.3 x 2.4 cm in size of the largest one. All the tissue fragments were fixed in formalin. The tissue fragments were grayish-white in color and soft or hard in consistency. Cut sections of tumor show grayish-white medullary cut surface.

Histopathological findings: Tissue specimen represented undifferentiated malignant tumor consisting of small round cells exhibiting little or no cytoplasm and rounded smooth contoured vesicular or dense hyperchromatic nuclei. Many mitotic figures and areas of necrosis are noted. The tumor cells were arranged in compact pattern. No well-defined Homer-Wright or ependymal rosettes were noted.

Immunohistochemistry: Immunohistochemical study was performed using eight primary antibodies : leukocyte common antigen (LCA), cytokeratin, vimentin, neuron specific antigen (NSE), chromogranin A, myogenin, FLI-1 and CD99. The tumor cells showed positive staining for vimentin, NSE, FLI-1 and CD99. The cytokeratin, LCA, chromogranin A and myogenin show negative staining.

Discussion: The term primitive neuroectodermal tumor (PNET) was defined by Hart and Earle in 1973 as a malignant, undifferentiated tumors of the cerebrum that did not fulfill the diagnostic criteria for neuroblastoma, ependymoblastoma, polar spongioblastoma, medulloepithelioma or pineal parenchyma tumors. PNETs are

malignant small round cell tumors of presumed neural crest origin. Ewing's sarcoma (ES), extraskeletal Ewing's sarcoma (EES) and PNET share immunohistochemical and cytogenetical features, therefore, they are considered to be closely related tumor. Furthermore, a single biologic entity, Ewing's sarcoma family of tumors (ESFT), which includes ES, EES and PNET, has been proposed and gradually accepted. PNETs can occur in the cerebellum, pineal gland, cerebrum, spinal cord, brain stem, and peripheral nerves. Cases of PNET have been increasingly reported in recent years but there is scarcity of reports of PNET originating primarily from the spinal cord.

Spinal PNETs tend to occur in young males with approximately 3:1 male: female ratio and 50% under 15 years and 85% under 30 years of age. PNETs occurring in spinal cord include the cauda equina and lower lumbar region (62%), the cervical cord (23%), and the thoracolumbar area (15%).

Microscopic findings consisted of prominent small round undifferentiated tumor cells with little cytoplasm, vesicular or dense hyperchromatic nuclei. Occasional differentiation along glial or neuronal lines can be found. Accurate diagnosis of small round cell tumors in bone and soft tissue is sometimes a challenge even to experienced pathologists. A group of small round cell tumors of bone and soft tissue comprises several entities such as lymphoma, small cell carcinoma, ES, EES, rhabdomyosarcoma and PNET. No single hematologic, biochemical or imaging method provides findings for a specific diagnosis of PNET. Therefore, obtaining a histologic specimen of the lesion in all patients is essential for diagnosis and planning therapy. Fine needle aspiration cytology/biopsy in conjunction with immunocytochemistry enables a rapid diagnosis of PNET.

Immunohistochemical analysis demonstrate positive staining with some markers suggesting neural differentiation and with CD99, an antigen determined by the MIC2 gene. CD99 is expressed in almost all cases of PNET but negative in other small round blue cell tumors. Translocations involving band q12 of chromosome 22 to chromosome 11 has been frequently observed in PNETs. The breakpoints in the translocation are localized within the EWS gene on chromosome 22 and within the human homologue of the murine FLI-1 gene on chromosome 11. The t(11,22) results in a transcript of the chimeric EWS-FLI-1 gene and the detection of the transcript has been reported as a specific and sensitive diagnostic test for PNET.

The differential diagnosis of a solid spinal tumor consists of nerve sheath tumors (ie, schwannoma, neurofibroma), meningiomas, hematogenic tumors, osteogenic tumors, ESFT and metastases. The definitive diagnosis of PNET relies on astute pathologic assessment. Light microscopy reveals a small, blue, round malignant tumor cells that are predominantly undifferentiated. Neuronal, glial, or myogenic differentiation may be evident on standard hematoxylin-eosin sections alone or with

special histologic stains. Immunohistochemical techniques and/or ultrastructural examination using electron microscopy will often reveal subtle attempts at differentiation along glial or neuronal lines that were not otherwise demonstrable .

Standard therapy for the PNET currently consists of gross total resection followed by irradiation, and results in 5 year survival rates of only 40% to 60%. Chemotherapy is the sole form of therapy used in children under two years of age, because of severe side effects of irradiation in this age group. Survival in the documented cases of spinal PNET from the time of diagnosis has ranged from 3 months to more than 3 years. Early diagnosis, surgical removal and aggressive radiation along with chemotherapy offers hope of long term and good quality survival .

The prognosis of the patients with primitive neuroectodermal tumor or extraskeletal Ewing sarcoma around the spinal column is very poor. Multiagent chemotherapy combined with en bloc resection and radiation therapy is the preferred treatment for patients with primitive neuroectodermal tumor or extraskeletal Ewing sarcoma around the spinal column.

Diagnostic criteria:

1. Histopathologic findings: small, round undifferentiated malignant tumor cells with little cytoplasm, vesicular or dense hyperchromatic nuclei.
2. Immunohistochemical stain : positive staining for vimentin, NSE, FLI-1 and CD99.

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Comparative Pathology Case 290

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Clinical history: A female baby Formosa Macaque (*Macaca cyclopis*) was

accidentally found in banana field at Nanto county. Her umbilical cord has contracted recently. She presented anorexia and weakness when she was brought to the “Endemic Species Research Institute” for help on April 13, 2007. The veterinarians of ESRI gave a light to warm her body and fed with milk. Additionally, she was treated with nutritional fluid and antibiotic of Enrofloxacin treatment. However, multiple and numerous erythema, became yellowish to whitish plaques were gradually noted on her body. Unfortunately, she died after 2 days of treatment, and the carcass was brought to the Animal Disease Diagnostic Center, National Chung-Hsing University for pathological diagnosis.

Gross findings: Grossly, numerous whitish to yellowish erotic to ulceric lesions with rash bulla were noted on the surface of eyelid, nose, and palm of skin. At necropsy, lungs displayed heavy and wet, and the septa between lobes were extended. Serous atrophy was noted in the heart. A hemorrhagic plaque was found on the skull.

Staining methods: The skins and various organs were fixed in 10% neutral buffered formalin. Tissues were embedded in paraffin and sections of 2 μ m were stained with hematoxylin and eosin (H&E) stain routinely.

Microbial examination: Microbial cultivations were taken from the liver, lungs, and skin and cultivated with blood agar and MaConky agar at 37°C for 24 hours.

Histopathological findings: Microscopically, acute to subacute, moderate to severe erotic to ulcerative lesions with focal necrosis and numerous neutrophilic infiltrations were noted on the epidermis and subdermis of skin. Lungs showed locally extensive liquid necrosis and bronchopneumonitis with basophilic liquid-like materials accumulation on the bronchial and alveolar spaces. Moreover, a large hematoma, congestion and hemorrhagic lesions were also found in the subdural of skull.

Microbial cultivation results: In the microbial examination, *Staphylococcus* spp. was isolated from the skin and lungs. For the antibiotic sensitivity test, *Staphylococcus* spp. revealed sensitive to numerous antibiotics, including Amoxicillin, Ampicillin,.....

Final diagnosis: The morphological diagnosis of cellulitis, purulent, multifocal, subacute, and moderate; hemorrhage, focal, skull head, and bronchopneumonia,

purulent, inhaled, interstitial, locally extensive, acute, moderate were made in this case. The acute bacteria infection of *Staphylococcus* spp. was isolated from skin.

Discussion: *Macaca mulatta*, *M. cyclopis* and *M. fuscata* are three closely related species in the *fascicularis* species group. *M. mulatta* is wide-spread in Asia, while *M. cyclopis* and *M. fuscata* are restricted to Taiwan and Japan, respectively. Both *M. cyclopis* and *M. fuscata* are thought to be derived from ancient '*mulatta*' populations in the eastern Asia (Chu et al., 2007). The Formosan macaque is an endanger species (Hus and Agormoorthy, 1997), and is legally protected by the government in Taiwan. Farm crop damages by the Formosan macaque in central Taiwan were commonly found in the bamboo shoot, longan and banana fields. Monkey raids occurred mostly in the season of harvest (Chang, 2005). For this reason, a female baby Formosa Macaque in this case was accidentally found in banana field that might be related the living areas of monkey in the central Taiwan.

Coat damage has been reported frequently in captive rhesus macaques. Disturbances in environment and behavior controlling or influencing hair growth may lead to hair loss in captive rhesus macaques (*Macaca mulatta*), and it is a serious health problem because the hair coat functions as an anatomic and physiologic barrier between the animal and the environment (Steinmetz et al., 2005). This baby monkey might be bended by her mother for unknown reasons. The death of this monkey was related to the strong hit on her head and might be caused by falling down from high to ground. The skin lesions might be related to weakness or hungry for a while days, depression on her immune system and then secondary infected with bacteria. The liquid necrosis of lungs might be caused by inhaled liquid materials.

Acute bacterial skin infections are very common, with various presentations and severity. The acute nonnecrotizing infections of the hypodermis (erysipelas), forms with abscesses or exudates and necrotizing fasciitis were mainly found. These three types actually differ in risk factors, bacteriology, treatment and prognosis. It remains mainly due to streptococci. Foot intertrigo is an important risk factor. Necrotizing fasciitis is much rarer and usually occurs in patients with chronic diseases. Staphylococci, especially community-acquired methicillin-resistant strains in some areas, play a growing role in the intermediate form of cellulitis with abscesses and exudates. For erysipelas or noncomplicated cellulitis, antibiotic treatment at home, when feasible, is much less expensive and as effective as hospital treatment. Intermediate cases with collections and exudates often require surgical drainage. For necrotizing fasciitis early surgery remains essential in order to decrease the mortality rate ([Gabillot-Carré](#), and [Roujeau](#), 2007).

In our case, *Staphylococcus* spp. was isolated from the skin and lungs. For the

antibiotic sensitivity test, *Staphylococcus* spp. revealed sensitive to numerous antibiotics, including Amoxicillin, Ampicillin,...;however, antibiotic treatment of deep skin infections must be active on streptococci; the choice of a larger spectrum of activity depends on clinical presentation, risk factors and the burden of methicillin-resistant staphylococci in the environment (Gabillot- Carré, and Roujeau, 2007).

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Comparative Pathology Case 291

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Clinical history: A 5 year-old German shepherd presented with poor appetite, pale mucosa and icterus. Regular vaccination was performed every year. The laboratory examination showed liver and renal dysfunction.

CBC Examination

| Parameters | Patient value | Reference value |
|--------------------------------|------------------|-----------------|
| | 08/16/2007 | |
| RBC ($\times 10^6$ / μ L) | 5.29 | 5.5~8.5 |
| PCV (%) | 34.5 | 37~55 |
| Hb (g/dl) | 13.3 | 12~18 |
| MCV (fl) | 65.2 | 60~77 |
| MCH (pg) | 25.1 \uparrow | 19.5~24.5 |
| MCHC (g/dL) | 38.6 \uparrow | 32~36 |
| WBC (n/ μ l) | 19700 \uparrow | 6000~17000 |
| Segment (%) | 92 \uparrow | 60~77 |
| Lymphocytes (%) | 5 \downarrow | 12~30 |
| Monocytes (%) | 3 | 3~10 |
| Platlets (10^3 / μ L) | 197 | 200~900 |

Serum Biochemistry

| Parameters | Patient value | Reference value |
|--------------------------|-----------------|-----------------|
| | 08/16/2007 | |
| Total protein (g/dL) | 7.9 \uparrow | 6~7.5 |
| Total bilirubin (mg/dL) | 22.3 | 0.1~0.7 |
| ALKP (U/L) | 127 | 20~155 |
| ALT (U/L) | 147 \uparrow | 3~50 |
| AST (U/L) | 208 \uparrow | 1~37 |
| Glucose (mg/dL) | 78 | 67~147 |
| Amylase (U/L) | 1653 | 388~1007 |
| BUN (mg/dL) | 206 \uparrow | 4.5~30.5 |
| Creatinine (mg/dL) | 17.5 \uparrow | 0.5~1.5 |
| Lipase (U/L) | 1358 | 268~1769 |
| K ⁺ (mmol/L) | 6.8 \uparrow | 3.5~5 |
| Na ⁺ (mmol/L) | 160 \uparrow | 138~148 |

Diagnosis: Leptospirosis

Gross findings: At necropsy, the mucosa of the gastrointestinal tract and bilateral

kidneys revealed yellowish. The capsule of the kidney was difficult to peel off. The liver was enlarged, fragile and yellowish in color.

Histopathological findings: The majority of renal tubules show varying degrees of degeneration/necrosis, sloughing of epithelial cells into the lumen and presence of occasional regenerate epithelial cells and mineralization. The surrounding interstitium is fibrotic with fewer infiltrations of lymphoplasmacytic cells. A few endothelial cells of blood vessels are proliferated, and in some blood vessels, thrombi are noted and some are organized with calcification. The capsule of the kidney is thickened. The liver shows extensive dissociation of hepatic cells and congestion of sinusoids. The portal triads are prominent with disorganized collagen fibers, edema and dilated vessels.

Immunohistochemistry:

Immunohistochemistry for *Leptospira* (polyclonal Ab: 1:400) is positive in the kidney, liver, and lung.

Microscopic agglutination test (MAT):

The results of microscopic agglutination test for leptospira revealed Bataviae 3200× and Shermani 400×

Diagnostic criteria:

1. Immunohistochemical stain: Polyclonal anti-leptospiral antibody.
2. Microscopic agglutination test (MAT): Titer $\geq 400\times$.

Discussion: Leptospirosis is a worldwide zoonotic disease of domestic animals and wildlife. The infection may transmit to human by direct contact or indirect exposure to urine from mammalian hosts such as peri-domiciliary rodents and farm, wild and domestic animals. The kidney is an important target organ in leptospiral infection. Clinically, renal involvement in leptospirosis occurs in 16-40% of cases and is unique because of the atypical presentation of polyuria, hypokalemia, and sodium and potassium wasting. The pathogenesis may be related to direct toxic effects of leptospiral compounds on renal transporters and microcirculation or to indirect effects of the pro-inflammatory response, with severe tissue damage due to oxidative stress.

At experimental infectious animals, the frequency of interstitial nephritis occurs is about 4 weeks. Histopathological changes in the kidney are focal mild infiltration of lymphocytes, macrophages and plasma cells surrounding small cortical arteries. Few cases also showed multiple foci of calcification, glomerulonephritis or tubular

epithelial hyaline droplets. The most common histological change detected is interstitial nephritis with tubular degeneration and necrosis.

Tissue edema and disseminated intravascular coagulation (DIC) may occur in rapid and severe leptospirosis that results in acute endothelial injury and hemorrhage. *Leptospira* lipopolysaccharide stimulates neutrophils adherence and platelet activation, which may precipitate inflammatory and coagulation abnormalities. The liver is the second major parenchymous organ damaged during leptospiremia. Profound hepatic dysfunction may occur without major histological changes because of subcellular damage produced by leptospiral toxins. The degree of icterus in both canine and human leptospirosis usually corresponds to the severity of hepatic necrosis.

There is no age or gender predilection in dogs, although German Shepherds may be at increased risk compared with other breeds. Acute renal failure occurs in 80-90% of dogs that develop clinically significant disease. Serology is the most useful and frequently used diagnostic test for dogs. Other diagnostic tests, such as dark field microscopy, immunofluorescent, PCR, Warthin-Starry stain and histopathology are less frequently used.

In developed countries, leptospirosis continues to be a disease of considerable economic significance in animal husbandry, but the major burden of the human disease remains in tropical and subtropical developing countries. The majority of infections in people are among those who engage in water sports or who experience occupational exposure to wildlife or domestic animal hosts.

Urine is the most important source of leptospiral contamination after acute infection. Veterinary clinicians and staff should wear protective latex gloves when handling any dog with possible leptospirosis, as well as blood and bodily fluids from the animal. Areas soiled by the dog's urine should be cleaned with an iodine-based disinfectant (protective gloves should be worn during cleaning). *Leptospira* may continue to be shed in the urine for months despite clinical recovery and an effective immune response.

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Comparative Pathology Case 292

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Clinical History: This 4 year and 8 month old boy was noted irritable crying while changing diaper and putting on shoes since one year old. Image study revealed multiple osteolytic bony lesion over bilateral femoral, tibial, fibular, and humeral bones and hip joints. However, aspiration biopsy revealed no definite malignancy. After transferring to our hospital, open biopsy of left distal femur was performed and histopathologic examination revealed malignancy.

Diagnosis: Hemangioendothelioma of bone

Gross findings:

- (1) The lesional tissue is usually grossly red and bloody
- (2) Tumors vary in consistency but are generally soft.
- (3) Residual bony trabeculae may be present.
- (4) Necrotic tumor may be present.

Histopathological findings:

- (1) In low grade tumor, vascular space are easily seen. In high grade lesion, it shows spindle cells proliferation without obvious vessels formation.
- (2) Vascular space is lined with endothelial cells with variable morphology, mostly round, epithelioid or even spindle cells.
- (3) Alternating areas with pictures reminiscent of capillary hemangioma and Kaposi sarcoma are seen.
- (4) Glomeruloid structures with hyaline globules.
- (5) Tumor cells are variably positive for CD 31 and CD 34.

Discussion: Previous WHO classification on bone tumors, considering hemangioendotheliomas as tumors of intermediate or borderline malignancy without any metastatic potential, was not followed in recent studies.

In cases of kaposiform hemangioendothelioma, they show no tendency to regress and the eventual outcome is strongly influenced by site, clinical extent, and the development of consumption coagulopathy. Although some patients are cured with surgical excision, those with Kasabach-Meritt phenomenon had poor prognosis. (Weiss SW)

One of the most remarkable differences between kaposiform hemangioendothelioma (KH) and juvenile hemangioma (JH) is the strong association of kaposiform hemangioendothelioma and Kasabach-Meritt phenomenon (KMP). It now appears that the majority of cases of KMP occur in the setting of KH or the closely related tufted angioma (TA), rather than JH as was previously thought. Three large recent studies, which examined the underlying pathologic changes in KMP, concluded that at least 90% are secondary to KH.

The epithelioid or glomeruloid islands located within the vascular nodules appear to represent specialized zones in which platelet trapping and blood destruction occur. These areas consist of centrally placed capillaries flanked by prominent accumulations of alpha-smooth muscle actin-positive pericytes and contain vestiges of blood breakdown such as hemosiderin granules, hyaline globules, and CD61-positive fibrin thrombi.

Diagnostic criteria:

Differential diagnoses include: (1) Hemangioma, (2) Massive osteolysis, (3) Epithelioid hemangioendothelioma, (4) Kaposiform hemangioendothelioma, (5) Kaposi Sarcoma, (6) Angiosarcoma of bone

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Comparative Pathology Case 293

Contributors:

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Clinical history: A 83 year-old man presented with poor appetite for several days. Epigastric pain and abdominal fullness were told. No fever, nausea or vomiting was noted. The physical examination showed oval and distended abdomen without tenderness or rebounding pain. Murphy's sign was negative. Abdominal ultrasound sonography revealed a huge mass, multiple hepatic cysts and left hydronephrosis. The computed tomography scan showed one huge retroperitoneal mass with central necrosis. The left ureter and descending colon had been pushed anteriorly due to the mass effect.

Diagnosis: Malignant tumor with perivascular epithelioid differentiation, favored malignant PEComa

Gross finding: One multi-lobular, yellow to gray and firm mass measuring 12x10x8 cm in size is submitted. On cut, the surface reveals grayish-white with focal myxoid degeneration, focal necrosis, and hemorrhage. Small amount of fat tissue attached on the external surfaces of the tumor is seen.

Histopathological finding: Microscopically, it shows a picture of malignant tumor with well-circumscribed border and composed of malignant spindle to ovoid tumor cells and geographic coagulative necrosis. There are relatively well differentiated areas composed of spindle tumor cell containing abundant eosinophilic cytoplasm and arranged in fascicular pattern as well as poorly differentiated areas composed of small tumor cells with epithelioid or clear cell appearance. Bizarre tumor giant cells and brisk mitotic figures are also frequently seen. Besides, some irregularly shaped and dilated vessels inside the tumor are found. Some adjacent fibroadipose tissues are attached to the tumor. No fat component inside the tumor and no lipoblast is

found.

Immunoprofile: The tumor cells are diffusely positive for vimentin, smooth muscle actin and focal for desmin but negative for cytokeratin, S-100 protein, CD117 and CD34 by immunohistochemical studies. Focal HMB-45 and Melan-A positive cells are also noted.

Discussion: In 1992, Bonetti et al first pointed out the distinct perivascular epithelioid cells showing the immunoactivity with melanocytic markers. [1] Subsequently, Zamboni et al suggested the term PEComas for neoplasms with perivascular epithelioid cell differentiation in 1996. [2] The tumor can occur in gynecologic (34.4%), somatic soft tissue/skin (45.9%), visceral (16.4%), and bone (3.3%) locations. [1] Retroperitoneal location is relatively rare. The tumor size ranges from 0.5 to 29 cm (median, 5.3 cm). [1] Female gender is more predominant than male. [1] Clear cell sugar tumor of lung, lymphangiomyomatosis, renal or extrarenal angiomyolipoma, clear cell myomelanocytic tumor of the falciform ligament/ligamentum teres, uterus, vulva, rectum, and heart as well as unusual clear cell tumors of the pancreas are all belong to this tumor family. [2] Typically, these tumors show biphasic growth patterns composed of epithelioid/polygonal cells with nest pattern and spindle cells with clear to granular eosinophilic cytoplasm predominantly arranged in perivascular location. Immunohistochemical studies reveal tumor cells are positive for both melanocytic (HMB-45 and/or melan A) and smooth muscle (actin (SMA) and/or desmin) markers.

Most PEComas have histologically bland features and clinically benign course. To date, thirty-six cases of malignant PEComas has been reported. [3] However, general acceptable malignant criteria for PEComas are not well established. Some histologic parameters indicating malignancy are described in the literatures such as infiltrative growth, marked hypercellularity, nuclear enlargement and hyperchromasia, high mitotic activity, atypical mitotic features and coagulative necrosis. [4] Some authors prescribe the categories of “benign”, “of uncertain malignant potential”, or “malignant” for PEComas. [1] Small tumors without any worrisome histologic features belong to benign. Nuclear pleomorphism alone (“symplastic”) and large tumors without other worrisome features have uncertain malignant potential. Tumors with more than two worrisome histologic features should be considered malignant. In our case, tumor size larger than 5 cm in size, high nuclear grade with multinucleated giant cells, high cellularity, coagulative necrosis and mitotic features larger than 1/ 50 HPF are all noted.

The tumorigenesis of PEComa is not clear according to non-known normal cellular counterpart and acceptable precursor lesions. [2]

Some tumors may also show HMB-45 immunoreactivity and this makes some problems in distinguish PEComa from other mimics in daily practice. Aberrant HMB-45 immunoreactivity especially in high-grade leiomyosarcoma that also displays muscle markers has been described. [5, 6] Therefore, making a diagnosis of PEComas only based on a single unspecific immunohistochemical marker is insufficient. To our best knowledge, the issue between high grade leiomyosarcoma and malignant PEComa is still unresolved. Some authors suggest that the immunoprofile of HMB-45 in high grade leiomyosarcoma tends to very focal and Melan-A immunoreactivity has never been noted. [1] In our case, the tumor cells are distinctly positive for HMB and focally positive for Melan-A. Hence, a diagnosis of malignant PEComas may be suitable.

In 2008, Yoshin et al reported CD1a expression in all of nineteen PEComas. CD1a expression is suggestive for a new marker for PEComas by the author and also supports the distinct and integrated disease entity of PEComas. CD1a is a non-polymorphic major histocompatibility complex class I-related cell surface glycoprotein and expressed in association with β -2 microglobulin. However, the mechanism of CD1a expression in PEComas is still not known. [7]

The differential diagnoses of retroperitoneal tumor with spindle and epithelioid features include gastrointestinal stromal tumor (GIST), liposarcoma, leiomyosarcoma, follicular dendritic cell tumor, angioepithelioma etc. Adequate sampling and an immunostain panel are needed. Adding HMB-45 immunostain into the panel in this setting is recommended.

In conclusion, we report a case of malignant tumor with perivascular epithelioid differentiation in the retroperitoneum. Malignant PEComa is preferred rather than high-grade leiomyosarcoma according to immunoprofiles of HMB-45 and Melan-A. However, the issue between malignant PEComa and high grade leiomyosarcoma is still controversial without universal consensus. Additionally the tumorigenesis and clinical behavior of this tumor group should be clarified. Therefore, more clinical and histological studies are needed.

Diagnostic criteria:

1. Biphasic growth pattern containing nests or sheets of epithelioid/polygonal cells as well as spindled cells with clear to granular eosinophilic cytoplasm arranged around perivascular location
2. Immunoreactivity for melanocytic markers such as HMB-45, melan A, tyrosinase, microphthalmia transcription factor, and NKIC3, and muscle markers, such as SMA, muscle actin, muscle myosin, and calponin
3. CD1a can be used as new additional marker for PEComas

Acknowledges:

1. Dr. HY Huang, Kaoshiung Chang Gung Memorial Hospital
2. Dr. MC Lin, National Taiwan University Hospital

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| Comparative Pathology Case 294 |
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Contributors:

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Clinical History: The 1-year-old, intact, male Siberian Husky was presented with

edematous swelling and partial weight-bearing lameness of the left hindlimb. Especially in the left thigh area, disseminated thrill on the medial side was easily palpated and the superficial blood vessels on the lateral side were extremely congested. On the ultrasound sonogram, multiple heterogenous and anechoic spaces were showed and in combination with the colored Doppler sonogram, areas of arteriovenous disturbance were displayed. The iliac artery and vein, left internal and external iliac arteries, left femoral artery and vein were found markedly dilated on the computed tomography (CT) which also displayed a bulge of vascular plexus (nidus) in the left thigh area. Other physical examinations revealed grade III-IV/VI of systolic heart murmur and gallop, increased vertebral heart scale (VHS) of heart. Unfortunately, the patient was passed away due to severe hemorrhage during the surgery.

Diagnosis: Arteriovenous malformation of the left hindlimb

Gross findings: Postmortem examination revealed that the cranial and caudal vena cava, iliac vein and artery, left internal and external iliac arteries and other branching blood vessels were all extremely dilated and congested. The normal skeletal muscles were replaced or occupied by variably sized blood channel-like structures in a honeycomb appearance. These channels were 0.1 mm to 3 cm in diameter and lined by thin to thick, smooth-surfaced, fibrous thickening walls. There was interconnection between these channels. These channels were filled with blood and variably sized, attached thrombi were also noted in some of the channels. The heart was markedly enlarged and displayed a pumpkin-shape with both ventricles dilated. The leaflets of the mitral valves were prolapsed and became slightly thickened and tortuous. Some verrucous growths were seen on the valves.

Histopathological findings: Microscopically, there were considerable numbers of variably ecstatic, irregular shaped and partially blood-filled vascular channels present in the left thigh which was devoid of normal intervening skeletal muscular structures. The larger vessels were often present as expansive, communicating and tortuous channels and lined by one layer of endothelial cells and a thin to thick rim of trichrome positive-collagenous connective tissue wall with discrete layers of smooth muscle actin (SMA)-positive cells. The small ones were only composed of a single layer of endothelial cells. All endothelial cells of variably-sized vessels displayed positive reactivity to factor-8. Besides growth of the vascular channels, proliferating primitive cells positive for factor-8 were noted infiltrating in the supporting stroma. Stromal cells also stained strongly positive with SMA. These cells were mildly variable in size with plump, ovoid to spindle in shape. The nuclei were open-faced

displaying ovoid, polygonal to beam shape and contained prominent nucleoli. No mitotic figures were found.

Discussion: Vascular malformations are rare disorders in human and animal population. They represent errors in vascular development and often are confused with the vascular birthmark and infantile hemangioma. In human, classification adopted today is made by Mulliken and Glowacki in 1982, and they group the vascular birthmarks into two major categories: hemangiomas and malformations. Thereafter, this classification was further modified by the International Society for the Study of Vascular Anomalies (ISSVA) that includes other types of important vascular tumors which exhibit different clinical and histologic characteristics, including kaposiform hemangioendotheliomas, tufted angiomas, and others. Vascular malformations are also further subdivided into groups based on their vascular components and flow characteristics in this classification, that is comprised of slow-flow capillary, venous, or lymphatic channels, fast-flow arterial channels, or a combination of each. This classification has not been defined in veterinary literatures.

Specifically, hemangiomas are differentiated from vascular malformations by their clinical appearance, histopathologic features, and biologic behavior. The natural history of hemangiomas involves rapid proliferation for the first several months of life with subsequent spontaneous regression, often leaving fibrous fatty deposition. Vascular malformations are often recognized at birth and grow proportionately with the child, with many becoming more prominent at puberty. Histologically, ³H-thymidine incorporation of endothelial cells can be detected in the proliferating phase of hemangiomas, while there is no ³H-thymidine incorporation demonstrated in vascular malformations that consist of mature often combined, capillary, arterial, venous and lymphatic vascular elements. There are also some markers of cellular proliferation, such as proliferating cell nuclear antigen, type IV collagenase, vascular endothelial growth factor, and basic fibroblast growth factor can be detected and show elevation in hemangiomas but not in vascular malformations. This is helpful to distinguish these two types of vascular anomalies.

Pathologic feature of the present case resembles the description of hemangioblastoma which is an intracranial tumor in human and has also been reported in dogs. The tumor is composed of two main components: endothelial cells forming a vascular network and larger interstitial cells whose histogenesis is obscure. In the hemangioblastoma, the endothelial cells stain with Factor-8, whereas the interstitial cells stain strongly positive for NSE and many cells also stained with vimentin. In the parenchyma of this case, there are also interstitial cells of uncertain origin packed between the randomly oriented vessels. Thus the hemangioblastoma

should be taken into consideration of the differential diagnosis. In the present case, characteristics of these interstitial cells are under investigation.

The pathogenesis of vascular malformations is not well-elucidated. It is speculated that they arise as a result of abnormalities in the process of normal vascular development. To date, there have been only a few reports of vascular malformations of animal species so that very little is known about these lesions.

Differential diagnosis:

1. Vascular hamartoma
2. Infantile Hemangioma
3. Hemangioblastoma
4. Arteriovenous malformation

Diagnostic criteria:

1. Clinically, infantile hemangioma will be self-regressed subsequently during the growing up, while the present lesion was non-regressive and grew proportionally with age.
2. No mitosis figure displayed by cells in this present case was found indicating the non-neoplastic or proliferating characteristics.
3. Varying sized of vascular structures in this case are all muscular vessels with discrete layer of smooth muscle actin-positive cells.

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Comparative Pathology Case 295

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Clinical History : A 2-year-old, mixed female cat weighed 2.0 kg, was presented with mucoid nasal discharge, epiphora, sneezing, anorexia and jaundice on 10/1/2007. Her right eye was hyperemic and the mucoid nasal discharge and epiphora became less on 10/16. Diarrhea and fever(40.0°C) with jaundice decreased on 10/22. The cat stayed at home between 10/30 to 12/20, and came back to the veterinary hospital on 12/21. Both of her hind limbs were weak but still sensitive to warm pad on 12/21.

Finally the cat was expired due to failure of multiple organs on 1/17/2008. The blood examination for the FeLV/FIV and Toxoplasma were negative.

Diagnosis: Feline infectious peritonitis (FIP)

Gross Findings: At necropsy, the anterior chamber of the right eye was stuffed with small amount of blood, and there were many white nodules in the abdominal viscera and nodules are 1 to 8 mm in diameter. Some spot-like or plaque-like nodules covered on omentum, mesentery, liver, spleen, kidneys, pancreas and brain. The shell was rough.

Histopathological Findings: Microscopically, there are adherences of fibrino-necrotic material on the serosal surface of heart, liver, kidney, with extension into the muscular layer of heart. The lesions contain with three layers, the first layer,

pink-like fibrin or fiber is adhered with small the amount of mononuclear cells and necrotic cells. The major components of these mononuclear cells are lymphocytes. The lesions on the spleen are only seen on the surface. Besides, brain, lung, gastrointestinal tract and the serosa of the abdomen are also involved. Hyperplasia of vessels can be observed around all lesions.

Discussion: The feline infectious peritonitis virus, belonged to the family Coronaviridae, induces feline infectious peritonitis (FIP). Coronaviridae is a single-stranded RNA, pleomorphic, and enveloped virus. FIP occurs sporadically in catteries or multicat households. The incidence is reported to be higher in pedigree cats. Although cats of any age may be affected, those less than three years of age appear to be most susceptible. Incidence also higher in male, especially the stray cat, because the male would run away during the oestrus.

Infected cats shed virus in faces and oronasal secretions. Transmission is mainly by ingestion or inhalation, although the possibility of spread by fomites (on clothing, bedding, feeding bowls, litter pans, etc.) also exists. In utero transmission is suggested by observations of FIP in stillborn kittens, but the frequency of this type of transmission is not known.

Three forms of FIP are recognized, of which effusive (wet) form, noneffusive (dry) form and the mixed form. The third form of FIP, which occasionally is seen, represents a combination of the other two forms and the dry forms always occur after effusive form. When FIP virus infects the cats, the virus will replicate in macrophage. Deposition of virus-infected mononuclear cells and virus-antibody immune complexes within blood vessel walls produces an intense vasculitis, with complement-dependent damage of vessels and subsequent escape of fibrin-rich serum components into the intercellular space. The noneffusive form of FIP, in comparison, is though to occur when partial cell-mediated immunity develops, and finally it becomes the type four hypersensitivity.

In the noneffusive form of FIP, clinical findings are less characteristic. Signs referable lesions in organs or tissues in abdominal cavity are present in about 50% of affected cats. Weight loss, depression, anemia, and fever are almost always seen, but fluid accumulation is usually minimal. These nonspecific signs may be present for several weeks or months to manifestation of organ-specific localizing signs. Clinical signs of renal or hepatic insufficiency, pancreatic disease, or ocular and nervous system disease may be observed in cats with severe organ important. Neurologic and ocular abdnormalitis are more common in this form of this disease.

The lesions are surface-oriented and associated with vessels frequently. The serosal surfaces of the abdomen or thorax or both are covered by a diffuse or multifocal, necrotic fibrinous exudate that frequently is most appears on the spleen

and liver. The omentum, mesentery and mesenteric lymph nodes, liver, spleen, kidney, and pancreas are most often involved. Granulomatous or pyogranulomatous lesions appear as multifocal, white or yellow to gray, plaque-like nodules that are 1 to 10 mm in diameter and have a noticeable surface orientation. In long-standing cases, these adhesions may be extensive and involve more of the abdominal viscera.

Currently, histological examination of affected tissues is the only procedure available for the definitive diagnosis of FIP, and the examination should take from biopsy or necropsy specimens. There are too many “FIP-alike” disease producing similar clinical signs or grossly visible lesions that affect cats, including lymphoma and other neoplasm, pyothorax, tubercuculosis, cardiomyopathy, nephrotic syndrome, internal abscesses, peritonitis, liver disease, septic peritonitis, diaphragmatic hernia, toxoplasmosis, and cryptococcosis. Diagnostic serological test, including IFA and ELISA do not distinguish between cats infected with FIPV and FCoV. In indirect immunofluorescence, antibody titers may very high in some FIP cases. In other cases antibody titers are negligible. RT-PCR can be used to detect virus shed in the faeces and for the identification of carriers. It is not that accurate quantification of FCoV (Felin Coronavirus) RNA in faeces is impossible but that each individual assay should be carefully evaluated before it is used in a clinical setting.

There is no specific treatment for FIP. Supportive therapy and broad spectrum antibiotics, glucocorticoids and cytotoxic drugs may be useful for treating affected cats in good physical condition. An intranasal vaccine was developed recently in northern American and Europe, but is very expensive.

Diagnostic Criteria: Microscopically, there are adherences of fibrino-necrotic material on the serosal surface of many organs and histological examination of affected tissues is the only procedure available for the definitive diagnosis of FIP.

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中華民國比較病理學會
第一次至第四十次比較病理學研討會病例分類一覽表

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

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|------|--|--------------------|---------------|
| 64. | 1.Adenocarcinoma of sigmoid colon 2.Old schistosomiasis of rectum | Human | 省立新竹醫院 |
| 71. | Myelolipoma | Human | 台北耕莘醫院 |
| 72. | Reticulum cell sarcoma | Mouse | 國家實驗動物繁殖及研究中心 |
| 73. | Hepatocellular carcinoma | Human | 新光吳火獅紀念醫院 |
| 74. | Hepatocellular carcinoma induced by aflatoxin B1 | Wistar strain rats | 台灣省農業藥物毒物試驗所 |
| 81. | Angiomyolipoma | Human | 羅東博愛醫院 |
| 82. | Inverted papilloma of prostatic urethra | Human | 省立新竹醫院 |
| 84. | Nephrogenic adenoma | Human | 國泰醫院 |
| 86. | Multiple myeloma with systemic amyloidosis | Human | 佛教慈濟綜合醫院 |
| 87. | Squamous cell carcinoma of renal pelvis and calyces with extension to the ureter | Human | 台北病理中心 |
| 88. | Fibroepithelial polyp of the ureter | Human | 台北耕莘醫院 |
| 90. | Clear cell sarcoma of kidney | Human | 台北醫學院 |
| 93. | Mammary gland adenocarcinoma, complex type , with chondromucinous differentiation | Dog | 台灣大學獸醫學系 |
| 94. | 1.Breast, left, modified radical mastectomy, showing papillary carcinoma, invasive 2.Nipple, left, modified radical mastectomy, papillary carcinoma, invasive 3.Lymph node, axillary, left, lymphadenectomy, papillary carcinoma, metastatic | Human | 羅東聖母醫院 |
| 95. | Transmissible venereal tumor | Dog | 中興大學獸醫學系 |
| 96. | Malignant lymphoma, large cell type, diffuse, B-cell phenotype | Human | 彰化基督教醫院 |
| 97. | Carcinosarcomas | Tiger | 台灣養豬科學研究所 |
| 98. | Mucinous carcinoma with intraductal carcinoma | Human | 省立豐原醫院 |
| 99. | Mammary gland adenocarcinoma, type B, with pulmonary metastasis, BALB/cBYJ mouse | Mouse | 國家實驗動物繁殖及研究中心 |
| 100. | Malignant fibrous histiocytoma and paraffinoma | Human | 中國醫藥學院 |
| 102. | Pleomorphic adenoma (benign mixed tumor) | Human | 佛教慈濟綜合醫院 |
| 103. | Atypical central neurocytoma | Human | 新光吳火獅紀念醫院 |
| 104. | Cardiac schwannoma | SD rat | 國家實驗動物繁殖及研究中心 |
| 109. | Desmoplastic infantile ganglioglioma | Human | 高雄醫學院 |

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|------|--|---------|-------------|
| 107. | 1.Primary cerebral malignant lymphoma 2.Acquired immune deficiency syndrome | Human | 台北市立仁愛醫院 |
| 111. | Schwannoma | Human | 三軍總醫院 |
| 114. | Osteosarcoma | Dog | 美國紐約動物醫學中心 |
| 115. | Mixed germ-cell stromal tumor, mixed sertoli cell and seminoma-like cell tumor | Dog | 美國紐約動物醫學中心 |
| 116. | Krukenberg's Tumor | Human | 台北病理中心 |
| 117. | Primary insular carcinoid tumor arising from cystic teratoma of ovary. | Human | 花蓮慈濟綜合醫院 |
| 119. | Polypoid adenomyoma | Human | 大甲李綜合醫院 |
| 120. | Gonadal stromal tumor | Human | 耕莘醫院 |
| 122. | Gestational choriocarcinoma | Human | 彰化基督教醫院 |
| 123. | Ovarian granulosa cell tumor | Horse | 中興大學獸醫學系 |
| 129. | Kaposi's sarcoma | Human | 華濟醫院 |
| 131. | Basal cell carcinoma (BCC) | Human | 羅東聖母醫院 |
| 132. | Transmissible venereal tumor | Dog | 臺灣大學獸醫學系 |
| 137 | Canine Glioblastoma Multiforme in Cerebellopontine Angle | Dog | 中興大學獸醫病理研究所 |
| 143 | Osteosarcoma associated with metallic implants | Dog | 紐約動物醫學中心 |
| 144 | Radiation-induced osteogenic sarcoma | Human | 花蓮慈濟綜合醫院 |
| 145 | Osteosarcoma, osteogenic | Dog | 臺灣大學獸醫學系 |
| 146 | Pleomorphic rhabdomyosarcoma | Human | 行政院衛生署新竹醫院 |
| 147 | Papillary Mesothelioma of pericardium | Leopard | 屏東科大學獸醫學系 |
| 148 | Cystic ameloblastoma | Human | 台北醫學院 |
| 149 | Giant cell tumor of bone | Canine | 中興大學獸醫學院 |
| 150 | Desmoplastic small round cell tumor (DSRCT) | Human | 華濟醫院 |
| 152 | Hepatocellular carcinoma | Human | 羅東聖母醫院 |
| 158 | Hemangiopericytoma | Human | 羅東聖母醫院 |
| 160 | Cardiac fibroma | Human | 高雄醫學大學病理學科 |
| 166 | Nephroblastoma | Rabbit | 紐約動物醫學中心 |
| 168 | Nephroblastoma | Pig | 台灣動物科技研究所 |
| 169 | Nephroblastoma with rhabdomyoblastic differentiation | Human | 高雄醫學大學病理科 |
| 172 | Spindle cell sarcoma | Human | 羅東聖母醫院 |
| 174 | Juxtaglomerular cell tumor | Human | 新光醫院病理檢驗科 |
| 190 | Angiosarcoma | Human | 高雄醫學大學病理學 |

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| 192 | Cardiac myxoma | Human | 彰化基督教醫院病理科 |
| 194 | Kasabach-Merrit syndrome | Human | 慈濟醫院病理科 |
| 195 | Metastatic hepatocellular carcinoma, right atrium | Human | 新光醫院病理科 |
| 197 | Papillary fibroelastoma of aortic valve | Human | 新光醫院病理科 |
| 198 | Extraplacental chorioangioma | Human | 耕莘醫院病理科 |
| 208 | Granulocytic sarcoma (Chloroma) of uterine cervix | Human | 高雄醫學大學病理學科 |
| 210 | Primary non-Hodgkin's lymphoma of bone, diffuse large B cell, right humerus | Lymphoma | 彰化基督教醫院病理科 |
| 213 | Lymphoma, multi-centric type | Dog | 中興大學獸醫系 |
| 214 | CD30 (Ki-1)-positive anaplastic large cell lymphoma (ALCL) | Human | 新光醫院病理科 |
| 215 | Lymphoma, mixed type | Koala | 台灣大學獸醫學系 |
| 217 | Mucosal associated lymphoid tissue (MALT) lymphoma, small intestine | Cat | 臺灣大學獸醫學研究所 |
| 218 | Nasal type NK/T cell lymphoma | Human | 高雄醫學大學病理科 |
| 222 | Acquired immunodeficiency syndrome (AIDS)with disseminated Kaposi's sarcoma | Human | 慈濟醫院病理科 |
| 224 | Epithelioid sarcoma | Human | 彰化基督教醫院病理科 |
| 226 | Cutaneous B cell lymphoma , eyelid , bilateral | Human | 羅東聖母醫院病理科 |
| 227 | Extramammary Paget's disease (EMPD) of the scrotum | Human | 萬芳北醫皮膚科,病理科 |
| 228 | Skin, back, excision, CD30+diffuse large B cell lymphoma, Soft tissue, leg , side not stated, excision, vascular leiomyoma | Human | 高雄醫學大學附設醫院病理科 |
| 231 | Malignant melanoma, metastasis to intra-abdominal cavity | Human | 財團法人天主教耕莘醫院病理科 |
| 232 | Vaccine-associated rhabdomyosarcoma | Cat | 台灣大學獸醫學系 |
| 233 | 1. Pleura: fibrous plaque, 2. Lung: adenocarcinoma, 3. Brain: metastatic adenocarcinoma | Human | 高雄醫學大學附設中和醫院病理科 |
| 235 | 1. Neurofibromatosis, type I 2. Malignant peripheral nerve sheath tumor (MPNST) | Human | 花蓮慈濟醫院病理科 |
| 239 | Glioblastoma multiforme | Human | 羅東聖母醫院 |
| 240 | Pineoblastoma | Wistar rat | 綠色四季 |
| 241 | Chordoid meningioma | Human | 高醫病理科 |

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| | 243 | Infiltrating lobular carcinoma of left breast with meningeal carcinomatosis and brain metastasis | Human | 花蓮慈濟醫院病理科 |
| | 245 | Microcystic Meningioma. | Human | 耕莘醫院病理科 |
| | 247 | Well-differentiated fetal adenocarcinoma without lymph node metastasis | Human | 新光吳火獅紀念醫院 |
| | 249 | Adenocarcinoma of lung. | Human | 羅東聖母醫院 |
| | 252 | Renal cell carcinoma | Canine | 國立台灣大學獸醫學系獸醫學研究所 |
| | 253 | Clear cell variant of squamous cell carcinoma, lung | Human | 高雄醫學大學附設中和醫院病理科 |
| | 256 | Metastatic adrenal cortical carcinoma | Human | 耕莘醫院病理科 |
| | 258 | Hashimoto's thyroiditis with diffuse large B cell lymphoma and papillary carcinoma | Human | 高雄醫學大學附設中和醫院病理科 |
| | 262 | Medullar thyroid carcinoma | Canine | 臺灣大學獸醫學系 |
| | 264 | Merkel cell carcinoma | Human | 羅東博愛醫院 |
| | 266 | Cholangiocarcinoma | Human | 耕莘醫院病理科 |
| | 268 | Sarcomatoid carcinoma of renal pelvis | Human | 花蓮慈濟醫院病理科 |
| | 269 | Mammary Carcinoma | Canine | 中興大學獸醫學系 |
| | 270 | Metastatic prostatic adenocarcinoma | Human | 耕莘醫院病理科 |
| | 271 | Malignant canine peripheral nerve sheath tumors | Canine | 臺灣大學獸醫學系 |
| | 272 | Sarcomatoid carcinoma, lung | Human | 羅東聖母醫院 |
| | 273 | Vertebra, T12, laminectomy, metastatic adenoid cystic carcinoma | Human | 彰化基督教醫院 |
| | 274 | rhabdomyosarcoma | Canine | 臺灣大學獸醫學系 |
| | 275 | Fetal rhabdomyosarcoma | SD Rat | 中興大學獸醫學系 |
| | 276 | Adenocarcinoma, metastatic, iris, eye | Human | 高雄醫學大學 |
| | 277 | Axillary lymph node metastasis from an occult breast cancer | Human | 羅東博愛醫院 |
| | 278 | Hepatocellular carcinoma | Human | 國軍桃園總醫院 |
| | 279 | Feline diffuse iris melanoma | Feline | 中興大學獸醫學系 |
| | 280 | Metastatic malignant melanoma in the brain and inguinal lymph node | Human | 花蓮慈濟醫院病理科 |
| | 281 | Tonsil Angiosarcoma | Human | 羅東博愛醫院 |
| | 282 | Malignant mixed mullerian tumor | Human | 耕莘醫院病理科 |
| | 283 | Renal cell tumor | Rat | 中興大學獸醫學系 |
| | 284 | Multiple Myeloma | Human | 花蓮慈濟醫院病理科 |
| | 285 | Myopericytoma | Human | 新光吳火獅紀念醫院 |
| | 287 | Extramedullary plasmacytoma with amyloidosis | Canine | 臺灣大學獸醫學系 |
| 細菌 | 6. | Tuberculosis | Monkey | 臺灣大學獸醫學系 |
| | 7. | Tuberculosis | Human | 省立新竹醫院 |
| | 12. | H. pylori-induced gastritis | Human | 台北病理中心 |

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| 13. | Pseudomembranous colitis | Human | 省立新竹醫院 |
| 26. | Swine salmonellosis | Pig | 中興大學獸醫學系 |
| 27. | Vegetative valvular endocarditis | Pig | 台灣養豬科學研究所 |
| 28. | Nocardiosis | Human | 台灣省立新竹醫院 |
| 29. | Nocardiosis | Largemouth bass | 屏東縣家畜疾病防治所 |
| 32. | Actinomycosis | Human | 台灣省立豐原醫院 |
| 33. | Tuberculosis | Human | 苗栗頭份為恭紀念醫院 |
| 53. | Intracavitary aspergilloma and cavitory tuberculosis, lung. | Human | 羅東聖母醫院 |
| 54. | Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM. | Human | 林口長庚紀念醫院 |
| 58. | Tuberculous enteritis with perforation | Human | 佛教慈濟綜合醫院 |
| 61. | Spirochetosis | Goose | 國立嘉義農專獸醫科 |
| 63. | Proliferative enteritis (<i>Lawsonia intracellularis</i> infection) | Porcine | 屏東縣家畜疾病防治所 |
| 68. | Liver abscess (<i>Klebsillae pneumoniae</i>) | Human | 台北醫學院 |
| 77. | 1. Xanthogranulomatous inflammation with nephrolithiasis, kidney, right. 2. Ureteral stone, right. | Human | 羅東聖母醫院 |
| 79. | Emphysematous pyelonephritis | Human | 彰化基督教醫院 |
| 89. | 1. Severe visceral gout due to kidney damaged 2. Infectious serositis | Goose | 中興大學獸醫學系 |
| 108. | Listeric encephalitis | Lamb | 屏東縣家畜疾病防治所 |
| 113. | Tuberculous meningitis | Human | 羅東聖母醫院 |
| 134. | Swine salmonellosis with meningitis | Swine | 中興大學獸醫學系 |
| 135. | Meningoencephalitis, fibrinopurulent and lymphocytic, diffuse, subacute, moderate, cerebrum, cerebellum and brain stem, caused by <i>Streptococcus</i> spp. infection | Swine | 國家實驗動物繁殖及研究中心 |
| 140 | Coliform septicemia of newborn calf | Calf | 屏東縣家畜疾病防治所 |

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| 病毒 | 161 | Porcine polyserositis and arthritis (Glasser's disease) | Pig | 中興大學獸醫學院 |
| | 162 | Mycotic aneurysm of jejunal artery secondary to infective endocarditis | Human | 慈濟醫院病理科 |
| | 170 | Chronic nephritis caused by Leptospira spp | Pig | 中興大學獸醫學院 |
| | 173 | Ureteropyelitis and cystitis | Pig | 中國化學製藥公司 |
| | 254 | Pulmonary actinomycosis. | Human | 耕莘醫院病理科 |
| | 259 | Tuberculous peritonitis | Human | 彰化基督教醫院病理科 |
| | 260 | Septicemic salmonellosis | Piglet | 屏東科技大學獸醫系 |
| | 261 | Leptospirosis | Human | 慈濟醫院病理科 |
| | 267 | Mycobacteriosis | Soft turtles | 屏東科技大學獸醫系 |
| | 21. | Newcastle disease | Chickens | 台灣大學獸醫學系 |
| | 22. | Herpesvirus infection | Goldfish | 台灣大學獸醫學系 |
| | 30. | Demyelinating canine distemper encephalitis | Dog | 台灣養豬科學研究所 |
| | 31. | Adenovirus infection | Malayan sun bears | 台灣大學獸醫學系 |
| | 50. | Porcine cytomegalovirus infection | Piglet | 台灣省家畜衛生試驗所 |
| | 55. | Infectious laryngo-tracheitis (Herpesvirus infection) | Broilers | 國立屏東技術學院獸醫學系 |
| | 69. | Pseudorabies (Herpesvirus infection) | Pig | 台灣養豬科學研究所 |
| | 78. | Marek's disease in native chicken | Chicken | 屏東縣家畜疾病防治所 |
| | 92. | Foot- and- mouth disease (FMD) | Pig | 屏東縣家畜疾病防治所 |
| | 101. | Swine pox | Pig | 屏東科技大學獸醫學系 |
| | 110. | Pseudorabies | Piglet | 國立屏東科技大學 |
| | 112. | Avian encephalomyelitis | Chicken | 國立中興大學 |
| | 128. | Contagious pustular dermatitis | Goat | 屏東縣&台東縣家畜疾病防治所 |
| | 130. | Fowl pox and Marek's disease | Chicken | 中興大學獸醫學系 |
| | 133. | Japanese encephalitis | Human | 花蓮佛教慈濟綜合醫院 |
| | 136 | Viral encephalitis, poliovirus infection | Lory | 美國紐約動物醫學中心 |
| | 138 | 1.Aspergillus spp. encephalitis and myocarditis 2.Demyelinating canine distemper encephalitis | Dog | 台灣大學獸醫學系 |
| | 153 | Enterovirus 71 infection | Human | 彰化基督教醫院 |
| | 154 | Ebola virus infection | African Green | 行政院國家科學委員 |

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| | | monkey | 會實驗動物中心 |
| 155 | Rabies | Longhorn Steer | 台灣大學獸醫學系 |
| 163 | Parvoviral myocarditis | Goose | 屏東科技大學獸醫學系 |
| 199 | SARS | Human | 台大醫院病理科 |
| 200 | TGE virus | swine | 臺灣動物科技研究所 |
| 201 | Feline infectious peritonitis(FIP) | Feline | 台灣大學獸醫學系 |
| 209 | Chicken Infectious Anemia (CIA) | Layer | 屏東防治所 |
| 219 | 1.Lymph node:Lymphadenitis, with lymphocytic depletion and intrahistiocytic basophilic cytoplasmic inclusion bodies. Etiology consistent with Porcine Circovirus(PCV)infection. 2.Lung: Bronchointerstitial pneumonia,moderate, lymphoplasmacytic, subacute. | Pig | 臺灣動物科技研究所 |
| 220 | Cytomegalovirus colitis | Human | 彰化基督教醫院病理科 |
| 221 | Canine distemper virus Canine adenovirus type II co-infection | Canine | 國家實驗動物繁殖及研究中心 |
| 223 | 1. Skin, mucocutaneous junction (lip): Cheilitis, subacute, diffuse, severe, with epidermal pustules, ballooning degeneration, proliferation, and eosinophilic intracytoplasmic inclusion bodies, Saanen goat. 2. Haired skin: Dermatitis, proliferative, lymphoplasmacytic, subacute, diffuse, severe, with marked epidermal pustules, ballooning degeneration, acanthosis, hyperkeratosis, and eosinophilic intracytoplasmic inclusion bodies. | Goat | 台灣動物科技研究所 |
| 238 | Hydranencephaly | Cattle | 國立屏東科技大學獸醫學系 |
| 248 | Porcine Cytomegalovirus (PCMV) infection | Swine | 國立屏東科技大學獸醫學系 |
| 250 | Porcine respiratory disease complex (PRDC) and polyserositis, caused by co-infection with pseudorabies (PR) virus, porcine circovirus type 2 (PCV 2), porcine reproductive and respiratory syndrome (PRRS) virus and <i>Salmonella typhimurium</i> . | Swine | 屏東縣家畜疾病防所 |
| 255 | Vaccine-induced canine distemper | gray foxes | 國立台灣大學獸醫學系 |
| 265 | Bronchointerstitial pneumonia | Swine | 台灣大學獸醫學系 |

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| | | (PCV II infection) | | |
| 黴菌 | 23. | Chromomycosis | Human | 台北病理中心 |
| | 47. | Lung: metastatic carcinoma associated with cryptococcal infection. Liver: metastatic carcinoma. Adrenal gland, right: carcinoma (primary) | Human | 三軍總醫院 |
| | 48. | Adiaspiromycosis | Wild rodents | 台灣大學獸醫學系 |
| | 52. | Aspergillosis | Goslings | 屏東縣家畜疾病防治所 |
| | 53. | Intracavitary aspergilloma and cavitary tuberculosis, lung. | Human | 羅東聖母醫院 |
| | 54. | Fibrocalcified pulmonary TB, left Apex. Mixed actinomycosis and aspergillosis lung infection with abscess DM, NIDDM. | Human | 林口長庚紀念醫院 |
| | 105. | Mucormycosis Diabetes mellitus | Human | 花蓮佛教慈濟綜合醫院 |
| | 127. | Eumycotic mycetoma | Human | 花蓮佛教慈濟綜合醫院 |
| | 138 | 1.Aspergillus spp. encephalitis and myocarditis 2.Demyelinating canine distemper encephalitis | Dog | 台灣大學獸醫學系 |
| 寄生蟲 | 14. | Dirofilariasis | Dog | 台灣省家畜衛生試驗所 |
| | 15. | Pulmonary dirofilariasis | Human | 台北榮民總醫院 |
| | 20. | Sparganosis | Human | 台北榮民總醫院 |
| | 46. | Feline dirofilariasis | Cat | 美國紐約動物醫學中心 |
| | 49. | Echinococcosis | Human | 台北榮民總醫院 |
| | 60. | Intestinal capillariasis | Human | 台北馬偕醫院 |
| | 64. | 1.Adenocarcinoma of sigmoid colon 2.Old schistosomiasis of rectum | Human | 省立新竹醫院 |
| | 66. | Echinococcosis | Chapman's zebra | 台灣大學獸醫學系 |
| | 67. | Hepatic ascariasis and cholelithiasis | Human | 彰化基督教醫院 |
| | 106. | Parasitic meningoencephalitis, caused by Toxocara canis larvae migration | Dog | 臺灣養豬科學研究所 |
| | 139 | Disseminated strongyloidiasis | Human | 花蓮佛教慈濟綜合醫院 |
| | 141 | Eosinophilic meningitis caused by Angiostrongylus cantonensis | Human | 台北榮民總醫院病理檢驗部 |
| | 156 | Parastrongylus cantonensis infection | Formosan | 中興大學獸醫學院 |

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| | | gem-faced civet | |
| | 157 | Capillaria hepatica, Angiostongylus cantonensis | Norway Rat 行政院農業委員會農業藥物毒物試驗所 |
| | 202 | Colnorchiasis | Human 高雄醫學院附設醫院 |
| | 203 | Trichuriasis | Human 彰化基督教醫院 |
| | 204 | Psoroptes cuniculi infection (Ear mite) | Rabbit 農業藥物毒物試驗所 |
| | 205 | Pulmonary dirofilariasis | Human 和信治癌中心醫院 |
| | 206 | Capillaries philippinesis | Human 和信治癌中心醫院 |
| | 207 | Adenocarcinoma with schistosomiasis | Human 花蓮佛教慈濟綜合醫院 |
| | 286 | Etiology- consistent with <i>Spironucleus (Hexamita) muris</i> | Rat 國家實驗動物繁殖及研究中心 |
| 原蟲 | 4. | Cryptosporidiosis | Goat 台灣養豬科學研究所 |
| | 15. | Amoebiasis | Lemur fulvus 台灣養豬科學研究所 |
| | 16. | Toxoplasmosis | Squirrel 台灣養豬科學研究所 |
| | 17. | Toxoplasmosis | Pig 屏東技術學院獸醫學系 |
| | 51. | Pneumocystis carinii pneumonia | Human 台北病理中心 |
| | 57. | Cecal coccidiosis | Chicken 中興大學獸醫學系 |
| | 65. | Cryptosporidiosis | Carprine 台灣養豬科學研究所 |
| | 211 | Avian malaria, African black-footed penguin | Avian 臺灣動物科技研究所 |
| | 242 | Neosporosis | Cow 國立屏東科技大學獸醫學系 |
| | 263 | Intestinal amebiasis | Human 彰化基督教醫院病理科 |
| 立克次體 | 229 | Necrotizing inflammation due to scrub typhus | Human 佛教慈濟醫院病理科 |
| | 251 | Scrub typhus with diffuse alveolar damage in bilateral lungs. | Human 佛教慈濟醫院病理科 |
| 皮膚 | 216 | Cytophagic histiocytic panniculitis with terminal hemophagocytic syndrome | Human 佛教慈濟綜合醫院病理科 |
| 其它 | 9. | Perinephric pseudocyst | Cat 台灣大學獸醫學系 |
| | 10. | Choledochocyst | Human 長庚紀念醫院 |
| | 11. | Bile duct ligation | Rat 中興大學獸醫學系 |
| | 37. | Myositis ossificans | Human 台北醫學院 |
| | 75. | Acute yellow phosphorus intoxication | Rabbits 中興大學獸醫學系 |
| | 76. | Polycystic kidney bilateral and renal failure | Cat 美國紐約動物醫學中心 |
| | 151 | Osteodystrophia fibrosa | Goat 台灣養豬科學研究所 & 台東縣家畜疾病防治所 |
| | 80. | 1.Glomerular sclerosis and hyalinosis, | SHR rat 國防醫學院 & 國家 |

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| | segmental, focal, chronic, moderate 2.Benign hypertension | | 實驗動物繁殖及研究中心 |
| 83. | Phagolysosome-overload nephropathy | SD rats | 實驗動物繁殖中心 |
| 85. | Renal amyloidosis | Dog | 台灣養豬科學研究所 |
| 89. | 1.Severe visceral gout due to kidney damaged 2.Infectious serositis | Goose | 中興大學獸醫學系 |
| 91. | Hypervitaminosis D | Orange-rumped agoutis | 台灣大學獸醫學系 |
| 118. | Cystic endometrical hyperplasia | Dog | 臺灣養豬科學研究所 |
| 121. | Cystic subsurface epithelial structure (SES) | Dog | 國科會實驗動物中心 |
| 124. | Superficial necrolytic dermatitis | Dog | 美國紐約動物醫學中心 |
| 125. | Solitary congenital self-healing histiocytosis | Human | 羅東博愛醫院 |
| 126. | Alopecia areata | Mouse | 實驗動物繁殖及研究中心 |
| 142 | Avian encephalomalacia (Vitamin E deficiency) | Chicken | 國立屏東科技大學獸醫學系 |
| 159 | Hypertrophic cardiomyopathy | Pig | 台灣大學獸醫學系 |
| 165 | Chinese herb nephropathy | Human | 三軍總醫院病理部及腎臟科 |
| 167 | Acute pancreatitis with rhabdomyolysis | Human | 慈濟醫院病理科 |
| 171 | Malakoplakia | Human | 彰化基督教醫院 |
| 183 | Darier's disease | Human | 高雄醫學大學病理科 |
| 191 | 1. Polyarteritis nodosa 2. Hypertrophic Cardiomyopathy | Feline | 台灣大學獸醫學系 |
| 193 | Norepinephrin cardiotoxicity | Cat | 台中榮總 |
| 196 | Cardiomyopathy (Experimental) | Mice | 綠色四季 |
| 212 | Kikuchi disease (histiocytic necrotizing lymphadenitis) | Lymphadenitis | 耕莘醫院病理科 |
| 225 | Calcinosis circumscripta, soft tissue of the right thigh, dog | Dog | 台灣大學獸醫所 |
| 230 | Hemochromatosis, liver, bird | Bird | 台灣大學獸醫學系 |
| 234 | Congenital hyperplastic goiter | Holstein calves | 屏東縣家畜疾病防治所 |
| 236 | Hepatic lipidosis (fatty liver) | Rats | 中興大學獸醫學病理學研究所 |
| 237 | Arteriovenous malformation (AVM) of cerebrum | Human | 耕莘醫院病理科 |
| 244 | Organophosphate induced delayed neurotoxicity in hens | Hens | 中興大學獸醫學病理學研究所 |
| 257 | Severe lung fibrosis after | Human | 慈濟醫院病理科 |

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| | | chemotherapy in a child with Ataxia-Telangiectasia | | |
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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

402 台中市南區國光路 250 號

中興大學獸醫學院動物疾病診斷中心 張文發秘書長 收

Tel: (04) 22840894

Fax: (04) 22852186

e-mail address: boovet@mail.vm.nchu.edu.tw

-----中華民國比較病理學會-----

會員資料更改卡

姓 名：_____ 會員類別：☐一般會員

☐學生會員

☐贊助會員

最高學歷：_____

服務單位：_____職 稱：_____

永久地址：_____

通訊地址：_____

電 話：_____傳 真：_____

E-Mail Address：_____

中 華 民 國 比 較 病 理 學 會

誠摯邀請您加入

入 會 辦 法

一、 本會會員申請資格為：

- (一) 一般會員：贊同本會宗旨，年滿二十歲，具有國內外大專院校（或同等學歷）生命科學及其它相關科系畢業資格或高職畢業從事生命科學相關工作滿兩年者。
- (二) 學生會員：贊同本會宗旨，在國內、外大專院校生命科學或其他相關科系肄業者（請檢附學生身份證明）。
- (三) 贊助會員：贊助本會工作之團體或個人。
- (四) 榮譽會員：凡對比較病理學術或會務之推廣有特殊貢獻，經理事會提名並經會員大會通過者。

二、 會員：

- (一) 入 會 費：一般會員新台幣一仟元，學生會員一百元，贊助會員伍仟元，於入會時繳納。
- (二) 常年會費：一般會員新台幣伍佰元，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、請填妥入會申請表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 號中興大學獸醫學院動物疾病診斷中心張文發秘書長收
電話：04-22840894-112、傳真 04-22852186。

中華民國比較病理學會入會申請及會員卡

會籍電腦編號

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