

WHAT
IS A
PATHOLOGIST?



病理獸醫師在經濟動物疾病防控 上擔任的角色

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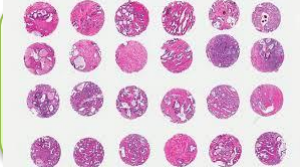
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獸醫病理學在疾病診斷上之應用



早期

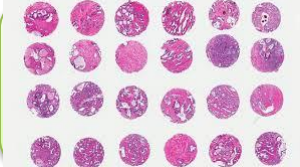
中期

末期

疾病是條延長線

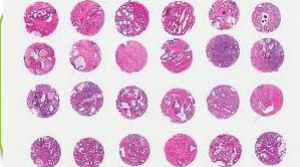
何謂獸醫病理學？





何謂獸醫病理學？

- ◆ 「隨著科學的急速發展，科學的分門別類，愈分愈細，病理學尤其是人醫方面，也有相同的趨勢。可是我們獸醫師研習病理學，最重要的目的是幫助達到正確的診斷，千萬不能離開病畜，而只往實驗室內鑽
- ◆ 更不能僅抓住象的尾巴而忘記看整個象的形狀。換言之，病理學與屍體剖檢，一定要與臨床診療聯繫起來，此其二。」

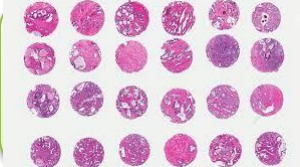


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何謂獸醫病理學？

- 切忌僅知細節而忘了病畜
- 當走進叢林樹間不要僅知樹木的枝葉，不見其木更不見其林，迷失了方向。凡對事處世，應有遠見與廣寬的胸襟，切忌偏狹。



獸醫病理學與疾病診斷的關係

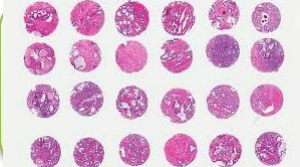
- 偵探辦案
- 找尋蛛絲馬跡
- 大膽假設
- 小心求證
- 明察秋毫
- 回溯生前的故事

- 臨床病理學
- 微生物學
- 分子生物學
- 電子顯微鏡



- 流行病學
- 健康的定義
- 活著、活得好
- 符合經濟效益(長得快)
- 經濟效益最大化

需要嫻熟基礎醫學知識解剖學、生理學、組織學、微生物學



病理獸醫師在面對傳染病診斷上的心法

- 歸零才能通靈
- 態度決定高度
- 格局決定結局
- 完全解剖(macro 重於 Micro)
- 剖檢動物是否具代表性
- 檢驗報告之判斷分析能力
- 追蹤回饋
- 大數據變現
- 溝通技巧
- 商業思維



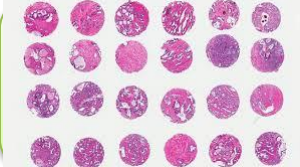
病理獸醫師之問診技巧



- 個人形象及魅力(標籤化、是個咖)
- 站在巨人肩膀上(人脈槓桿)
- 說故事的能力
(成功經驗及案例)
- 流行病學
- 關鍵字
- 資訊對等才不會誤判
- 說人話(翻譯專業術語)
- 到場觀察動物的生長狀況
- 活著、活得好
- 符合經濟效益(長得快)
- 牧場基本資料
- 人(甚麼樣的人養甚麼樣的動物)
- 管理團隊
- 感染鏈模式
- 經濟效益最大化

關鍵畫面影像

重大傳染病：劇情及版本
個人形象及魅力



獸醫師如何進行重要動物疫病採樣及確診

- **動物健康檢查**

臨床檢查要點

實施檢查應該要每天、經常性、定期

外觀檢查-皮膚及天然口

- **重要動物傳染病之診斷及採樣**

- **臨床樣品之採集、保存及運送要點**

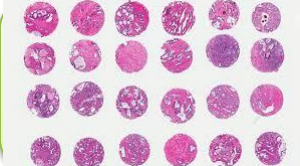
- 樣品採集要點-病毒性疾病、細菌性疾病、其他

- 保定豬隻與採集血液、拭子、組織或其他樣品

- 樣品保存

- 包裝及運送要點





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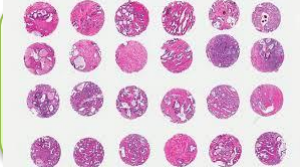


檢查日期： 月 日

項目	建議及立即改善事項
保育舍內豬隻年齡與體重	<div style="background-color: #d4edda; padding: 5px;"> <p>✓健康狀態</p> <p>✓攝食量</p> <p>✓環境品質</p> </div>
生長的整齊度	
水攝取	
飼料評估-飼料成分與品質	
飼養密度	
豬隻躺臥的型態	
環境-溫度、排換氣、溼度	
離乳後起算前 10 天內的生長速度	
呼吸道疾病-鼻炎、肺炎	
腸道疾病	
糞便狀態	
隔離	
有害動物控制-鼠	
蒼蠅控制	
皮膚狀態-疥癬蟲、油膩豬病	
跛腳	
動物福利	
設施維護情形	
其他處理或措施	

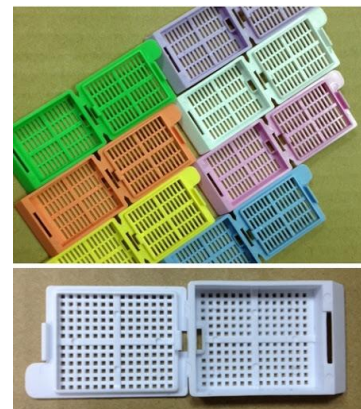
臨床檢查要點：
以豬為例

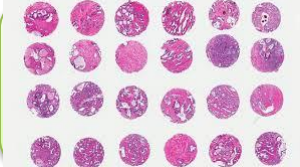




檢體採樣應注意事項

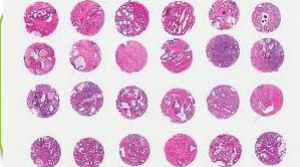
- ✓ 採樣前應收集完整流行病學(問診)
- ✓ 剖檢具代表性動物，完全解剖，完整採樣
- ✓ 樣材至少分兩部分保存(冷藏及福馬林固定)
- ✓ 解剖採樣獸醫師親自修片
- ✓ 一定要製作組織病理切片
- ✓ 採樣標準及處理流程依不同疾病而異，法定動物傳染病需依家畜衛生試驗所公布的方法執行
- ✓ 最短時間內實施剖檢採樣、採樣操作人員應做好個人生物安全防護措施
- ✓ 採樣後應進行環境清潔與消毒



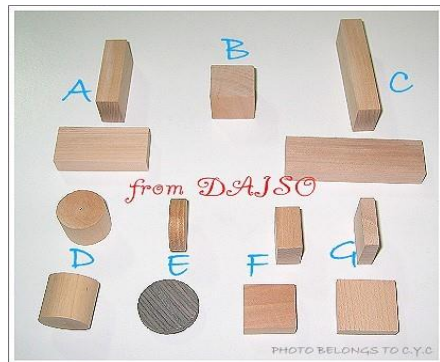


剖檢拍照技巧

- 取景：主要病變置於圖片正中央
- 背景：整潔、顯現出對比
- 清晰：屠體是立體的、要有景深的觀念
- 工具：公分小貼紙、小木塊或黏土、高解析度相機、翻拍台



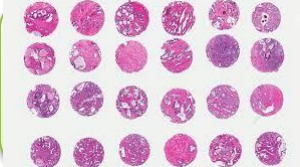
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翻拍台：固定相機
避免因手動導致失焦



利用公分小貼紙及小木塊(黏土)、高度與要對焦的病變處同高，數字清晰病變處就會清晰(背景淺藍色及蘋果綠最佳)



WHAT IS A PATHOLOGIST?



口蹄疫患豬鼻吻部大水疱



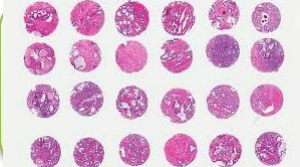
新竹縣竹北市首例口蹄疫爆發場全體肉豬落蹄，倒臥於地

重大傳染病：劇情及版本



滿地落蹄

豬隻口蹄疫

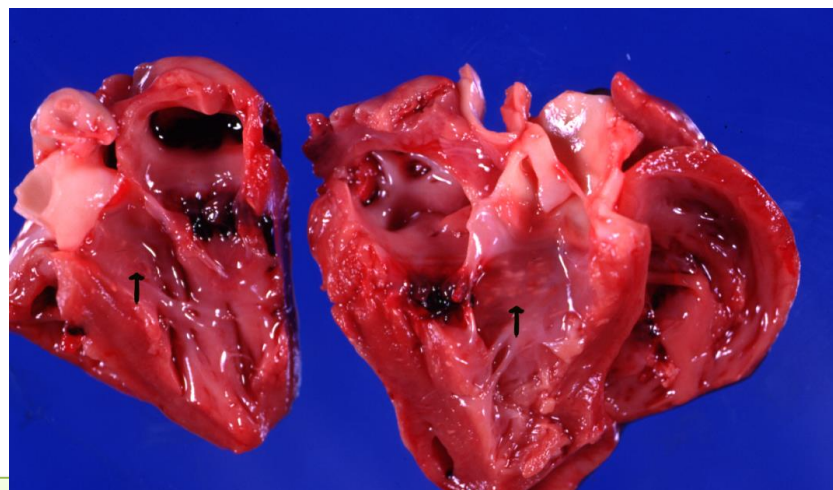
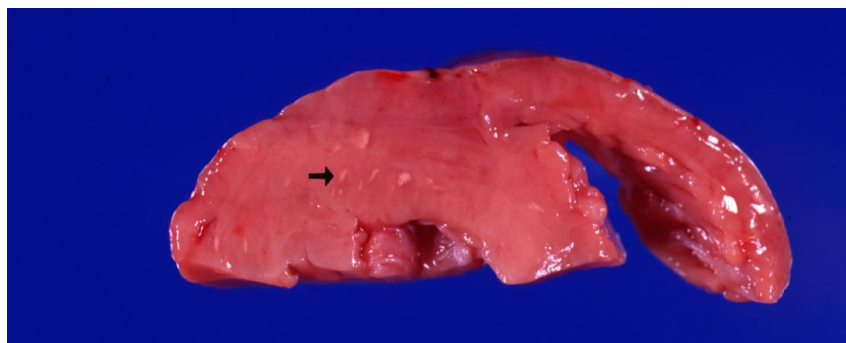
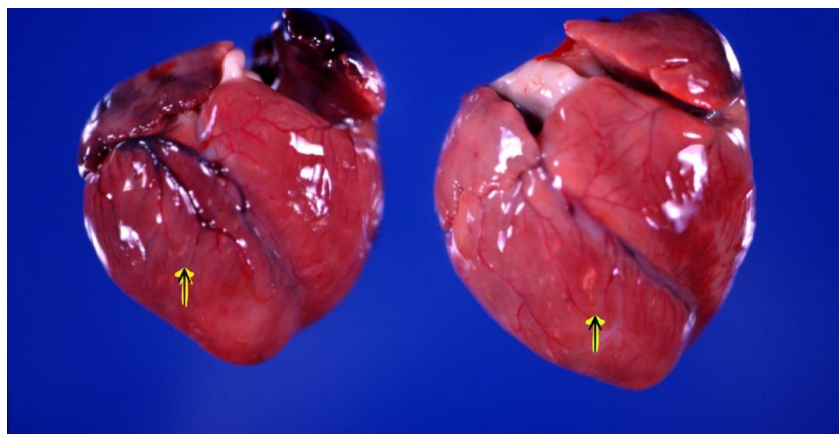
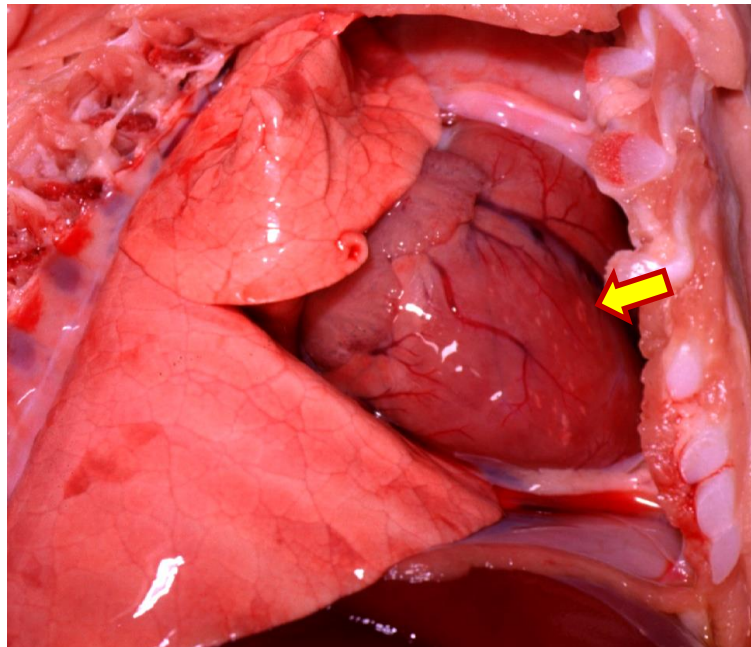


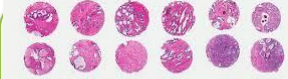
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豬隻口蹄疫

虎斑心 → 關鍵畫面影像





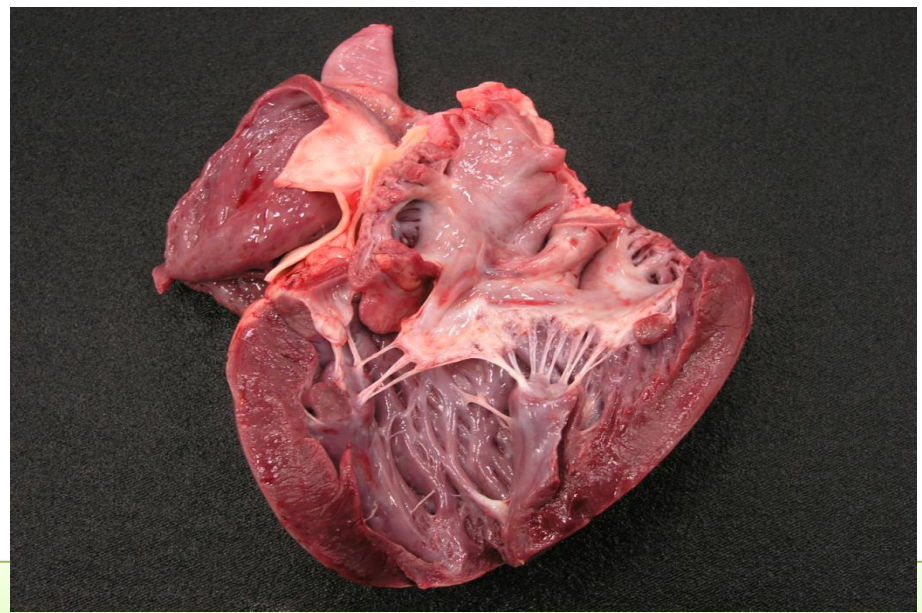
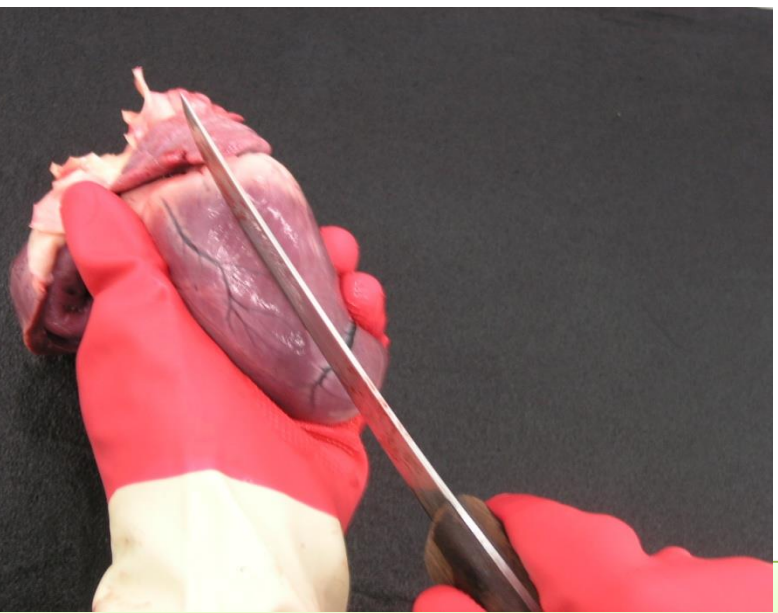
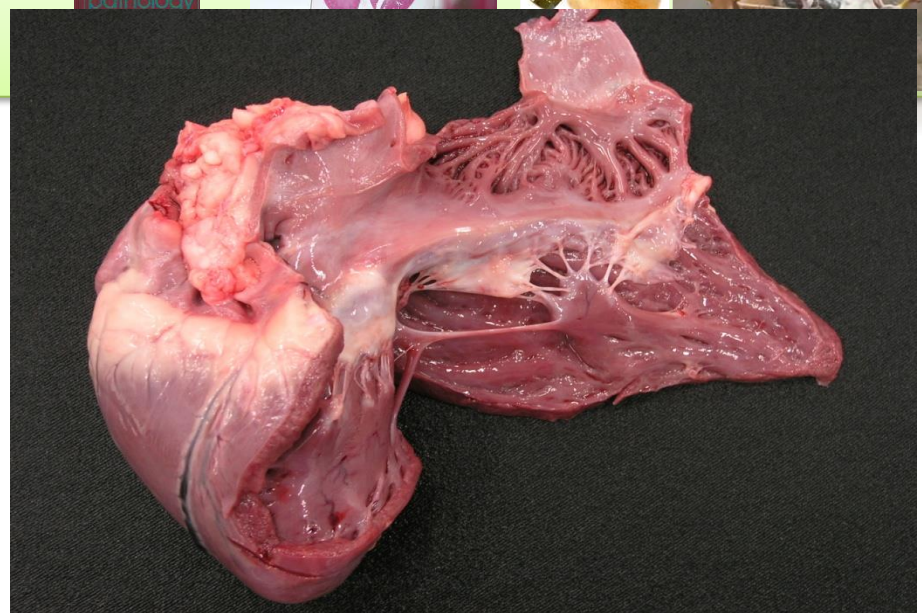
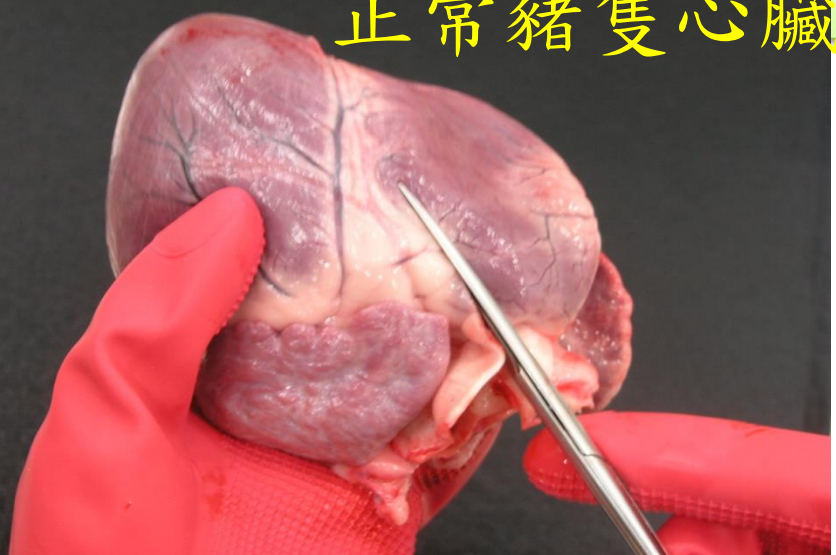
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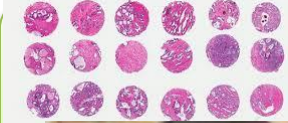


Veterinary pathology

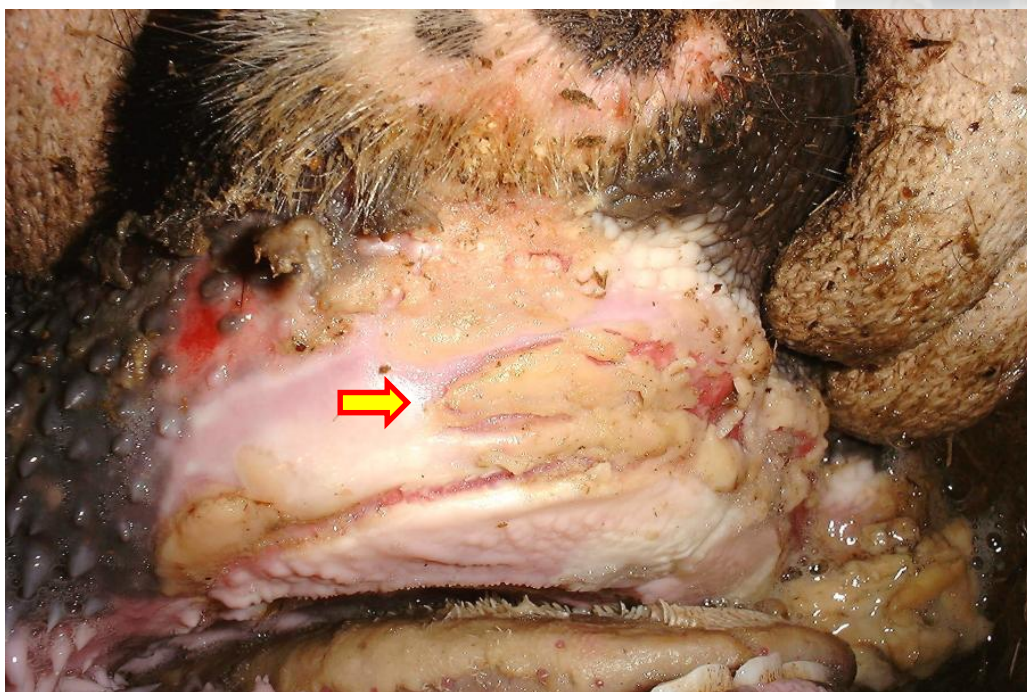
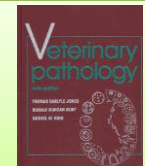


正常豬隻心臟





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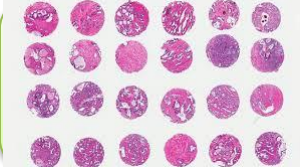
乳牛口蹄疫-口腔黏膜糜爛、潰瘍病變

傳染病在不同品種物/傳染鏈模式

選擇最佳監測 / 管控模式

做好、做大、做輕鬆

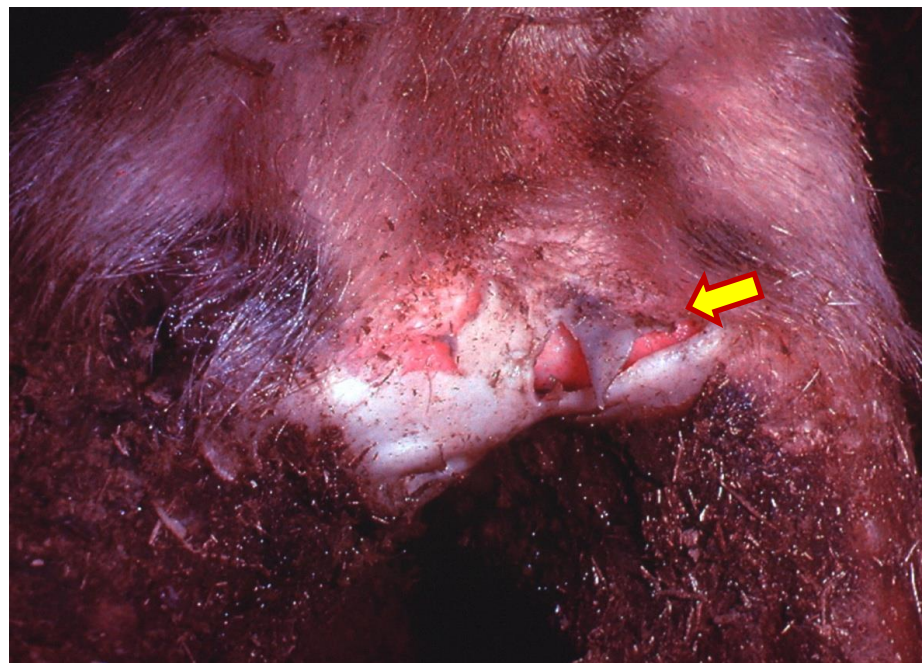
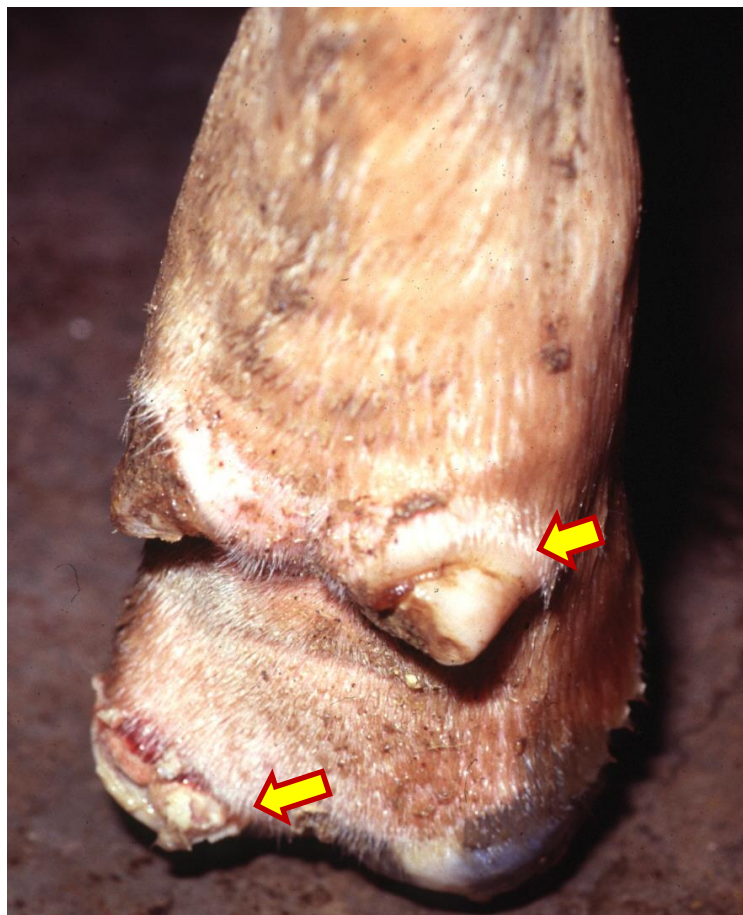
乳牛口蹄疫-流涎



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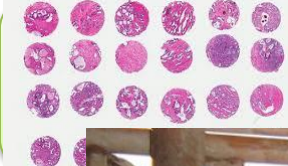


乳牛口蹄疫-蹄部病變



蹄冠部上皮病變

關鍵畫面影像



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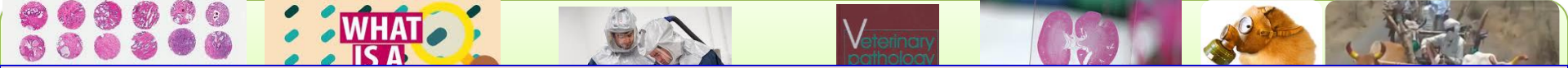
乳牛口蹄疫-吐舌



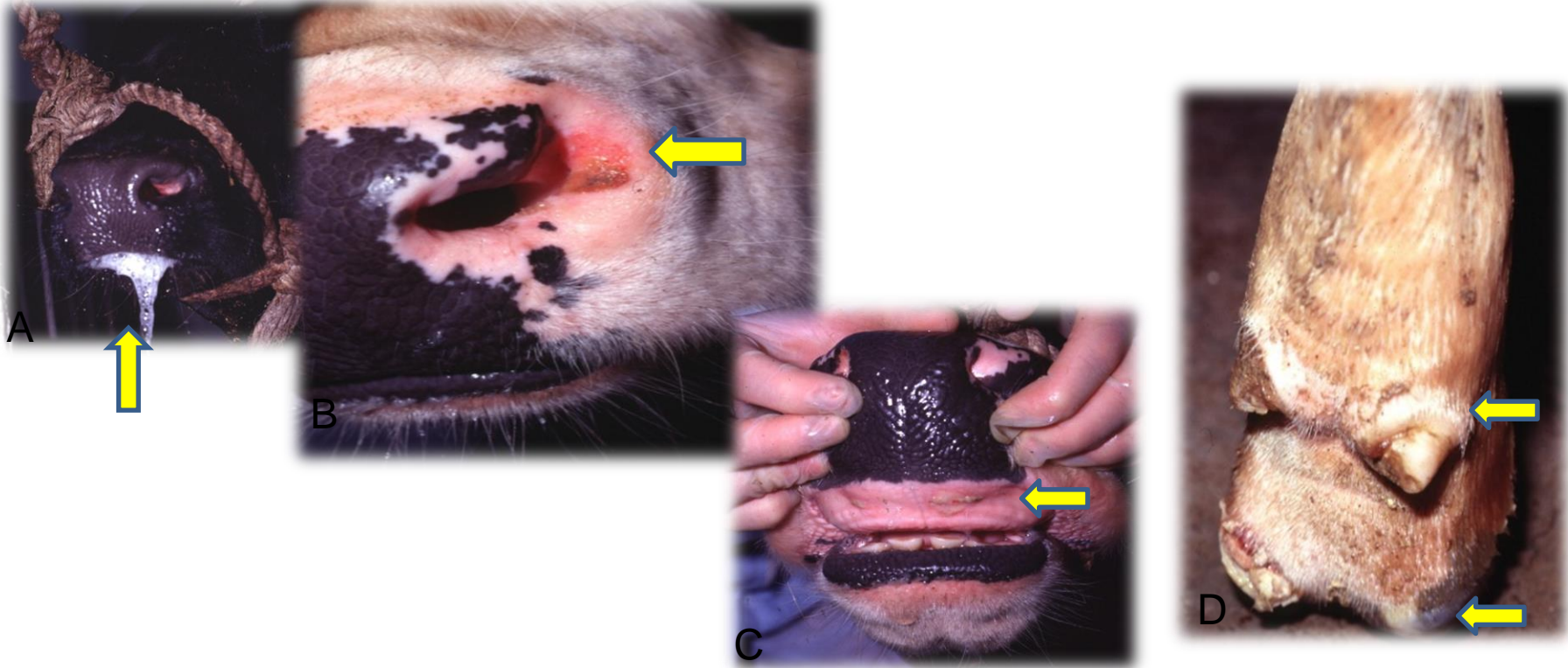
舌頭上皮水泡形成



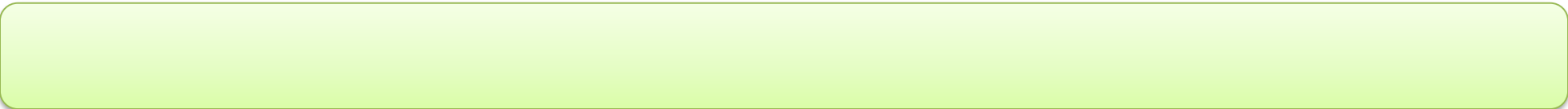
乳頭水泡

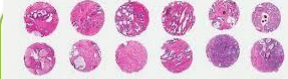


Pathogenic characteristics of the Taiwan 1999 isolate of foot-and-mouth disease virus strain (O/Taiwan/99) in experimentally infected pigs, cattle, Taiwan yellow cattle, Taiwan water buffalo and goats



(A) Infected dairy cattle No.99. Lameness, salivation and diarrhea were noticed on 9 DPI. (B) Infected dairy cattle No.99. Rectal temperature rose on 3 DPI. Erosive lesions on nasal mucosa were seen on 3 DPI (C) Lesions were noticed on upper gum on 2 DPI, infected dairy cattle (arrow). (D) Swollen and ruptured vesicles of coronary bands were noticed on 10 DPI. Lesions started healing on 14 DPI (arrow).

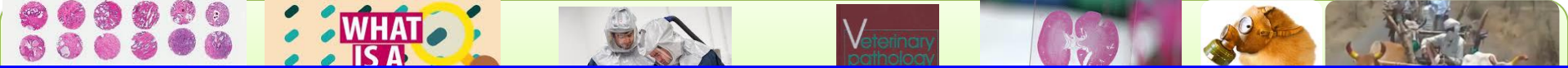




Pathology and viral distributions of the porcophilic foot-and-mouth disease virus strain (O/Taiwan/97) in experimentally infected pigs

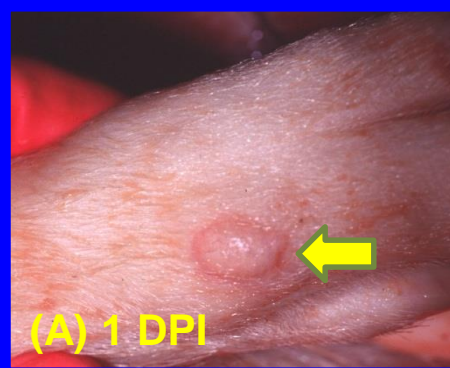


Clinical signs including depression, lost appetite, lameness, clawing on its knees and chewing movement were observed at 24 hrs after inoculation



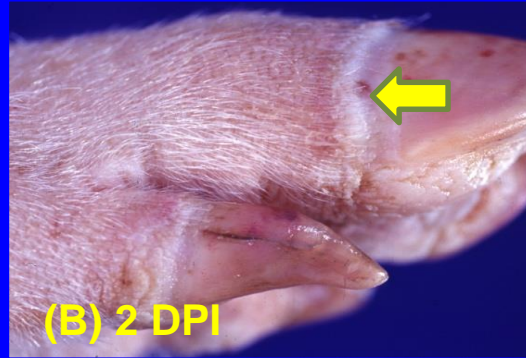
Pathology and viral distributions of the porcineophilic foot-and-mouth disease virus strain (O/Taiwan/97) in experimentally infected pigs

Gross findings



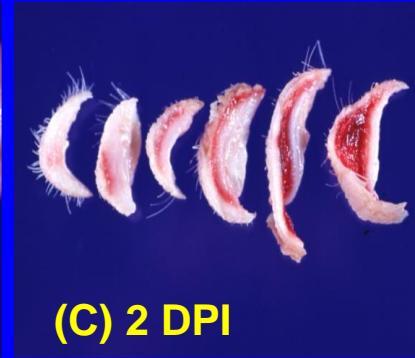
(A) 1 DPI

A vesicle with 1 cm diameter on the skin of metatarsus



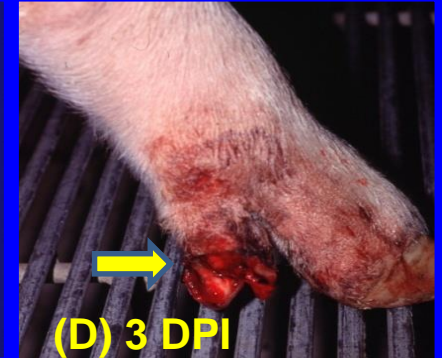
(B) 2 DPI

Petechiae hemorrhagic and swelling presented on the surface of coronary band



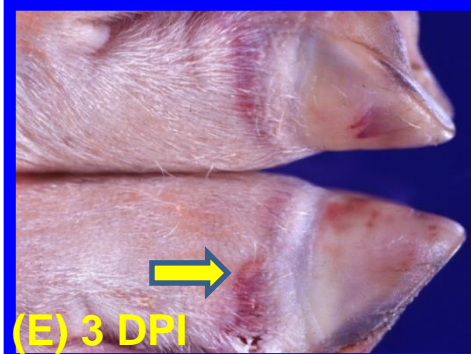
(C) 2 DPI

Diffuse hemorrhagic areas on the cross-sections of coronary band



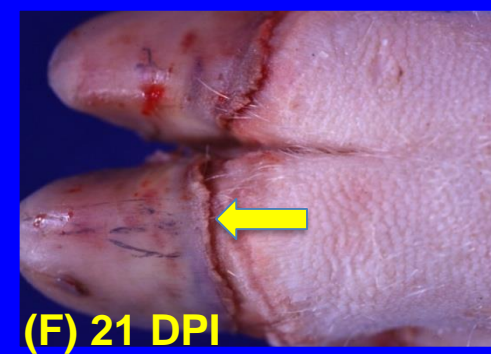
(D) 3 DPI

The hooves of supernumerary digits were detached after the infected pig walked under force



(E) 3 DPI

Swelling of skin above coronary accompanied with linear hemorrhage



(F) 21 DPI

Regrowth of new hooves



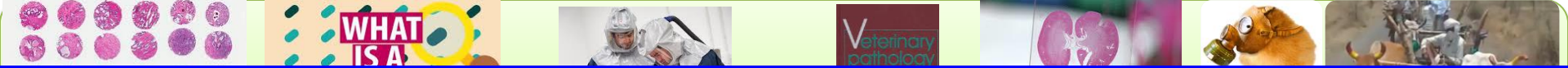
(G) 36 DPI

disease progress, new-growth hoof has displaced the ruined ones



(H) 63 DPI

newly-formed hooves pushed the old ones downward

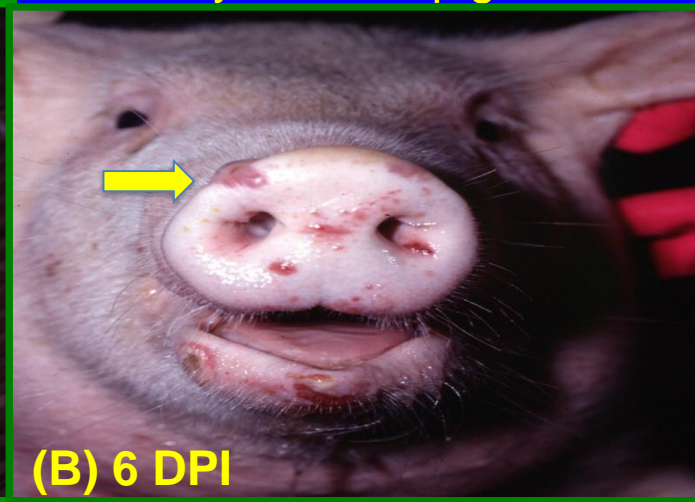


Pathology and viral distributions of the porcineophilic foot-and-mouth disease virus strain (O/Taiwan/97) in experimentally infected pigs



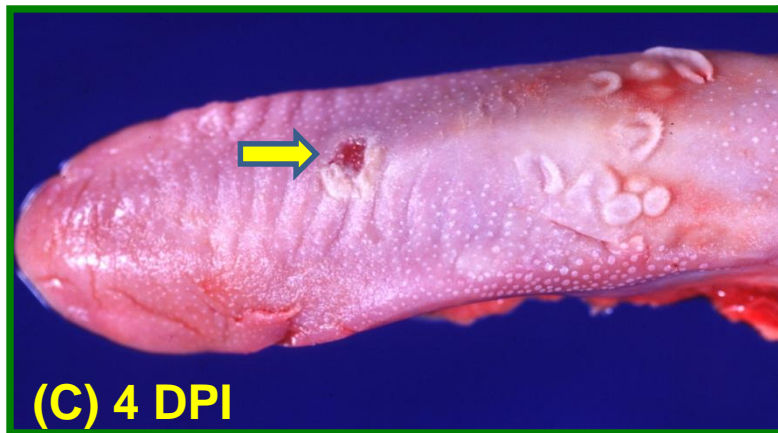
(A) 3 DPI

3 cm in diameter transparent vesicle on the snout



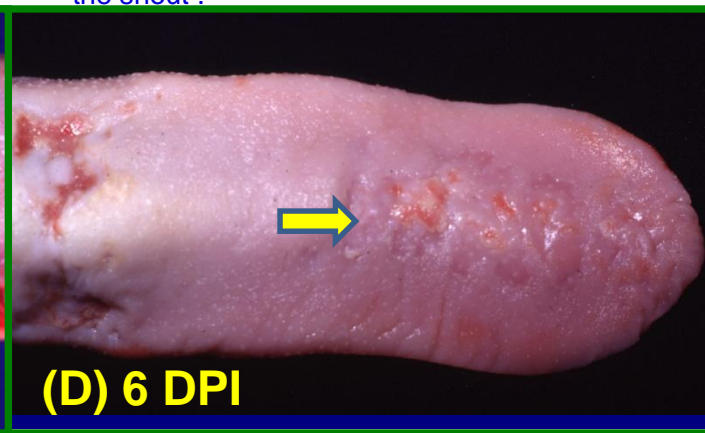
(B) 6 DPI

Some smaller vesicles and dark-red vesicles on the snout.



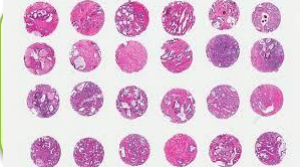
(C) 4 DPI

Vesicles ranged from 0.1 to 0.6 cm in diameter were found on the surface of the tongue



(D) 6 DPI

Large area of erosion on the surface of tongue

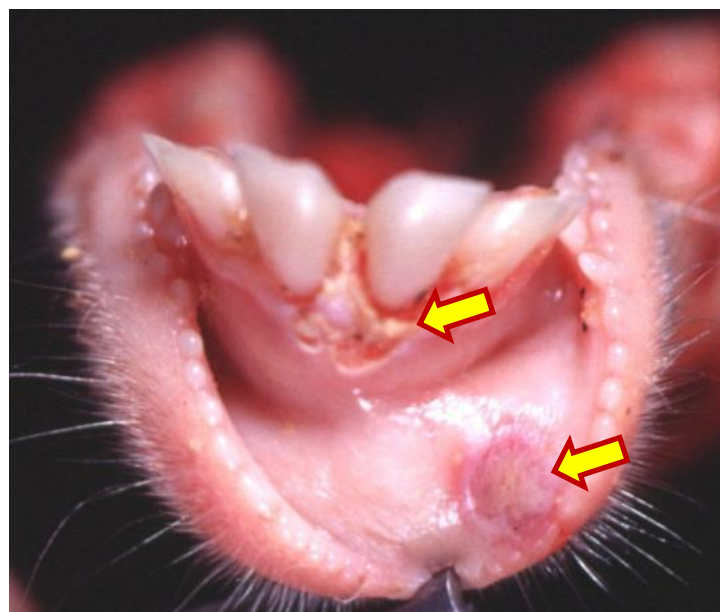


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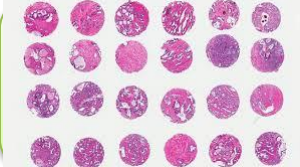


羊口蹄疫-肉眼病變

● 虎斑心



● 嘴唇及齒齦潰瘍



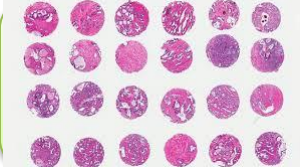
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小反芻獸疫



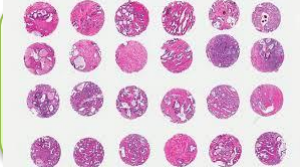
口眼鼻大量分泌液



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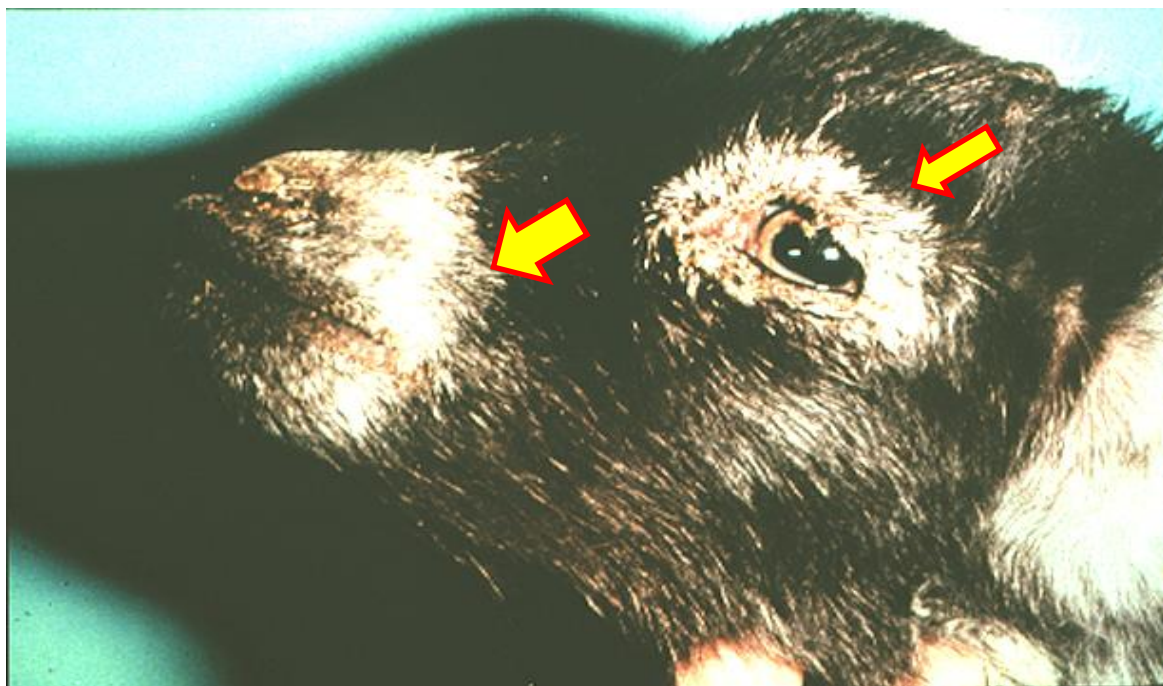
- Paramyxoviridae
- 本症亦為羊隻之牛瘟
- 斑馬條紋（zebra striped）的特徵



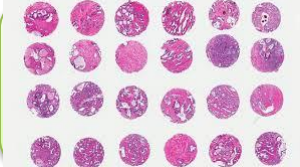
WHAT IS A PATHOLOGIST?



小反芻獸疫



口眼鼻周圍毛髮脫落上皮組織淺層糜爛



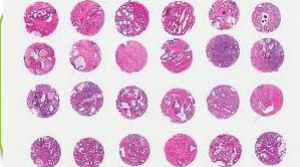
WHAT IS A PATHOLOGIST?



小反芻獸疫



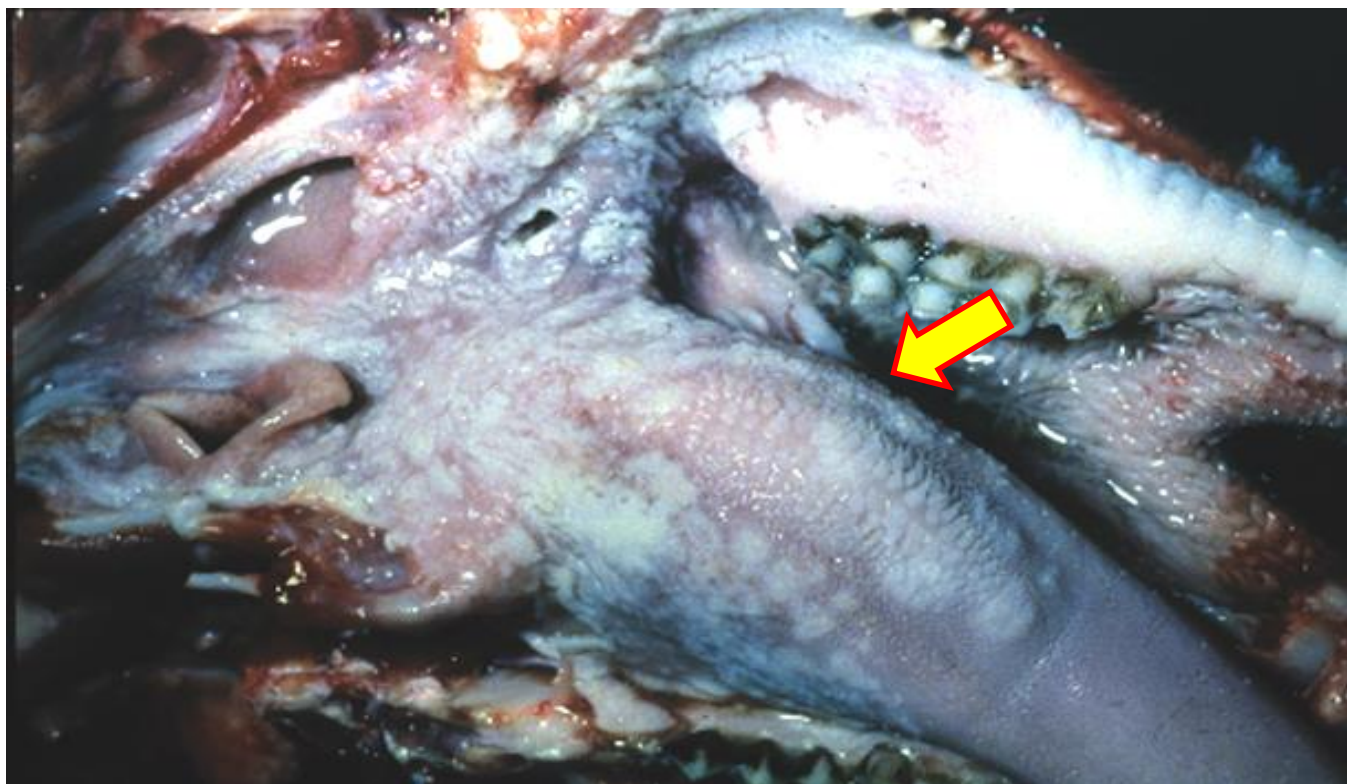
嘴唇周圍組織出血糜爛



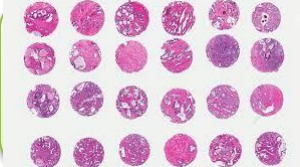
WHAT IS A PATHOLOGIST?



小反芻獸疫



舌根部上皮組織淺層糜爛



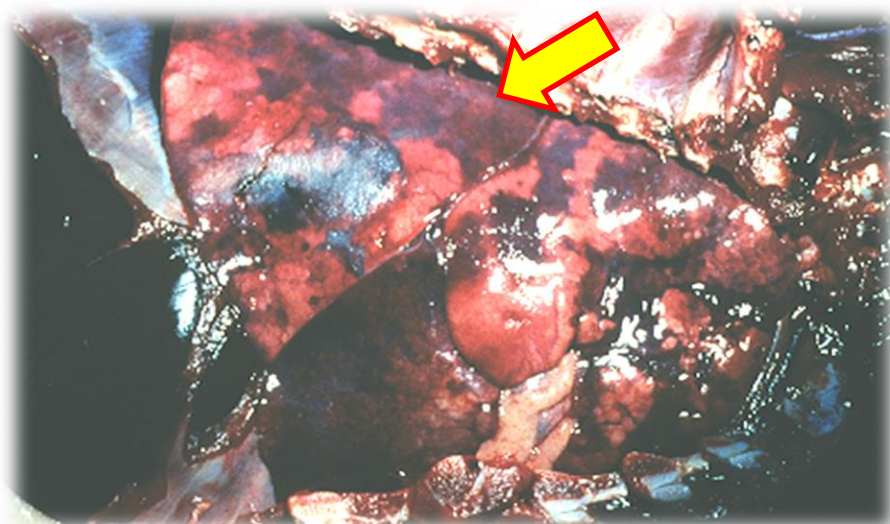
WHAT IS A PATHOLOGIST?



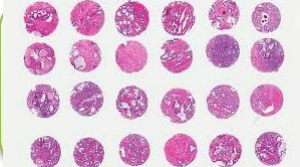
小反芻獸疫



正常羊之肺臟



肺炎

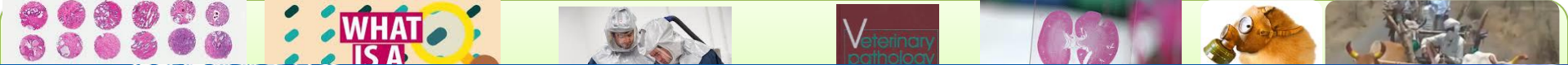


WHAT IS A PATHOLOGIST?



動物感染里夫谷熱之病理學診斷





行政院農業委員會



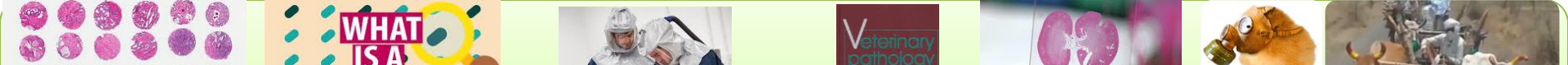
家畜衛生試驗所

AHRI

ANIMAL HEALTH RESEARCH INSTITUTE, COUNCIL OF AGRICULTURE, EXECUTIVE YUAN



- 里夫谷熱是一種急性，靠節肢動物傳播且在幼年動物引起高死亡率的病毒性疾病。
- 主要感染動物為綿羊、牛及山羊，臨床狀以肝炎及流產為主。



行政院農業委員會

家畜衛生試驗所

ANIMAL HEALTH RESEARCH INSTITUTE, COUNCIL OF AGRICULTURE, EXECUTIVE YUAN



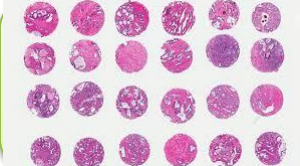
里夫谷熱



流產



病羊口鼻分泌物增加

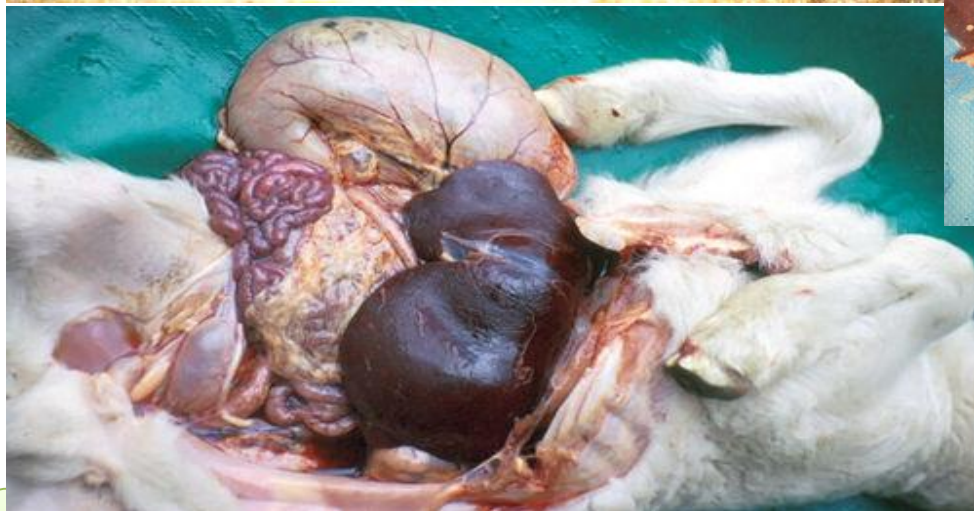
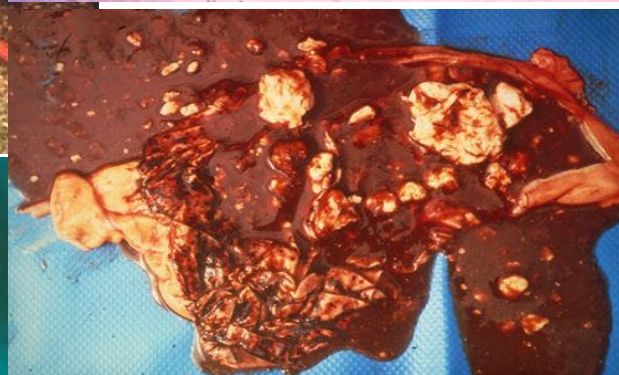
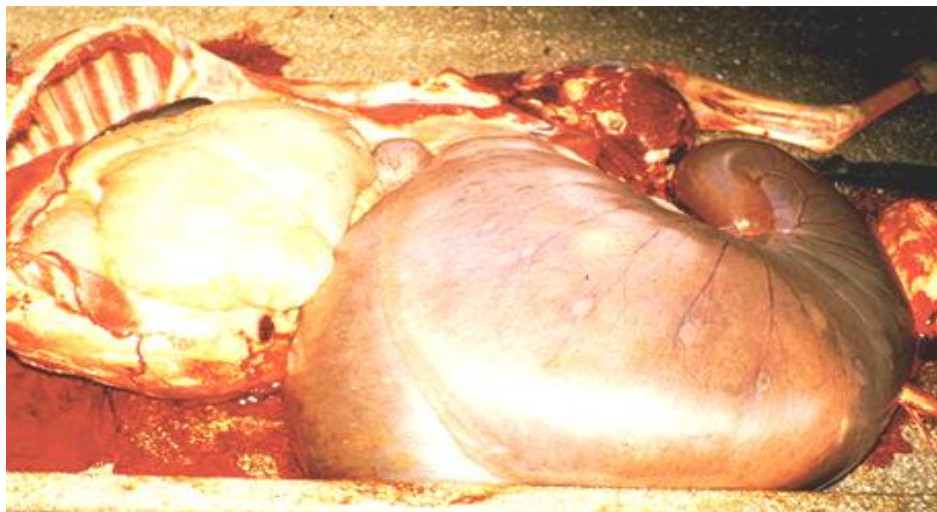


WHAT IS A PATHOLOGIST?

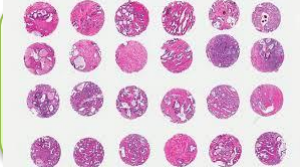


流產

里夫谷熱(Rift Valley fever)



流產胎兒肝臟病變



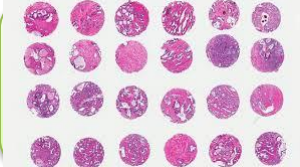
WHAT IS A PATHOLOGIST?



里夫谷熱(Rift Valley fever)



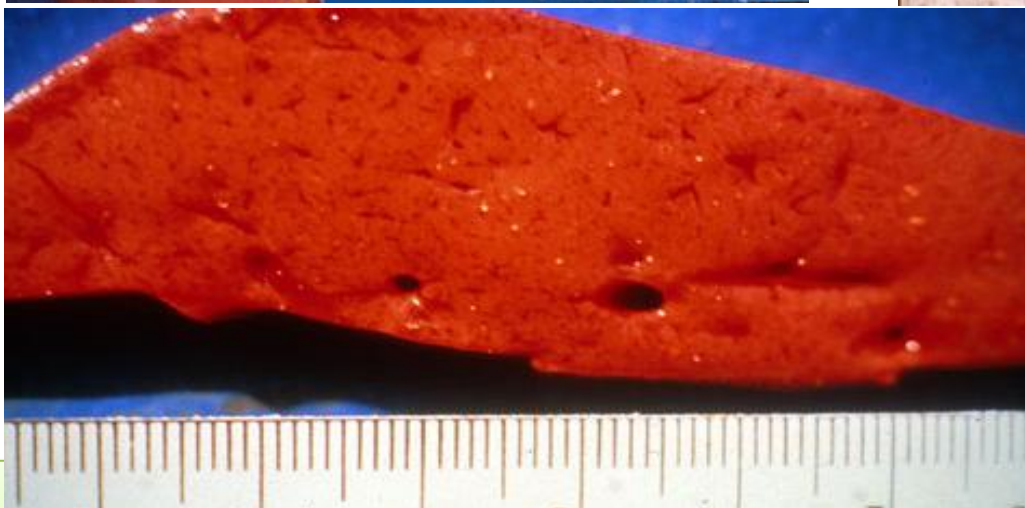
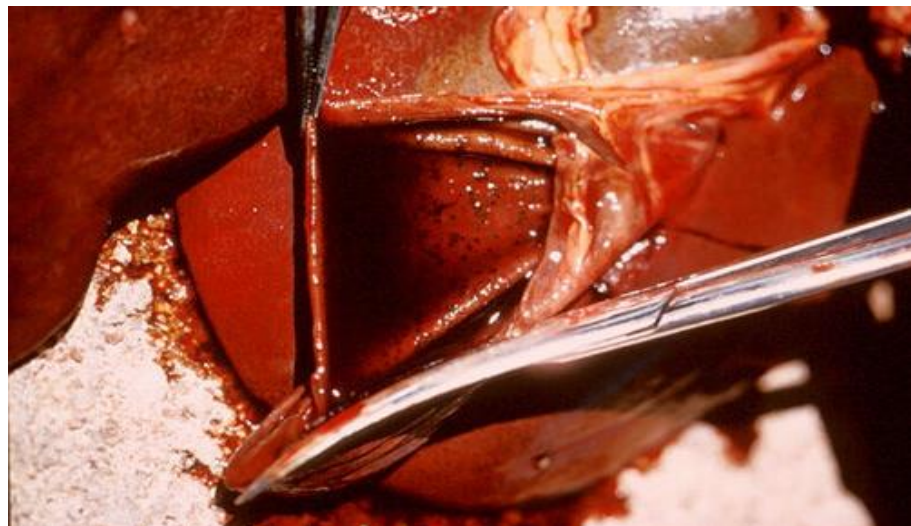
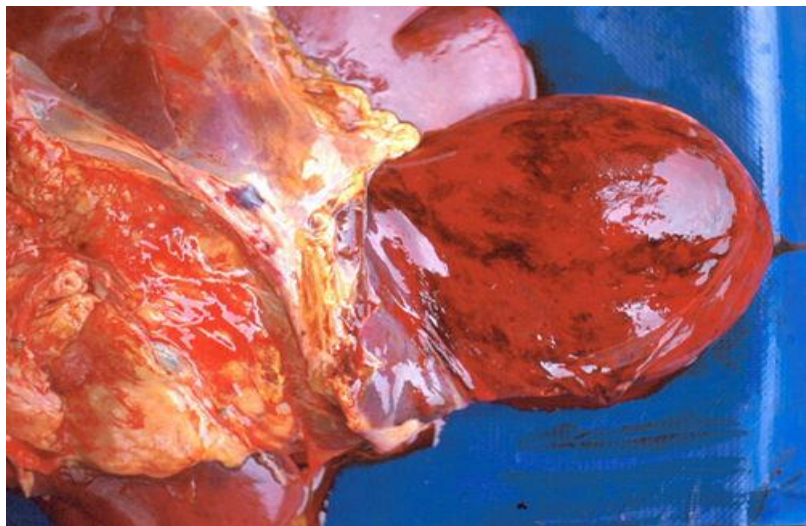
流產胎兒肝臟病變
點狀出血、多發性壞死



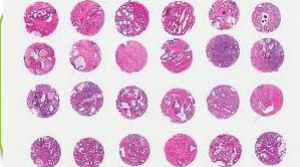
WHAT IS A PATHOLOGIST?



里夫谷熱(Rift Valley fever)



流產胎兒肝臟病變
膽囊出血、肝多發性壞死



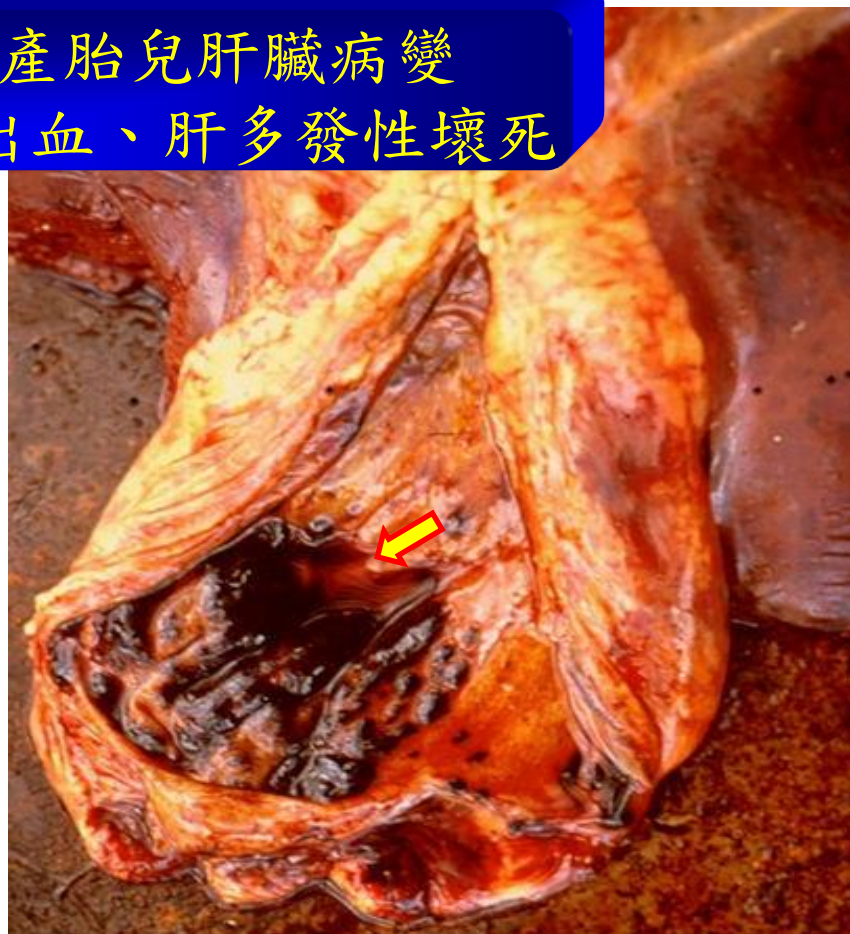
WHAT IS A PATHOLOGIST?



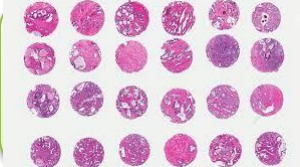
里夫谷熱(Rift Valley fever)



流產胎兒肝臟病變
膽囊出血、肝多發性壞死



腸管漿膜面點狀出血



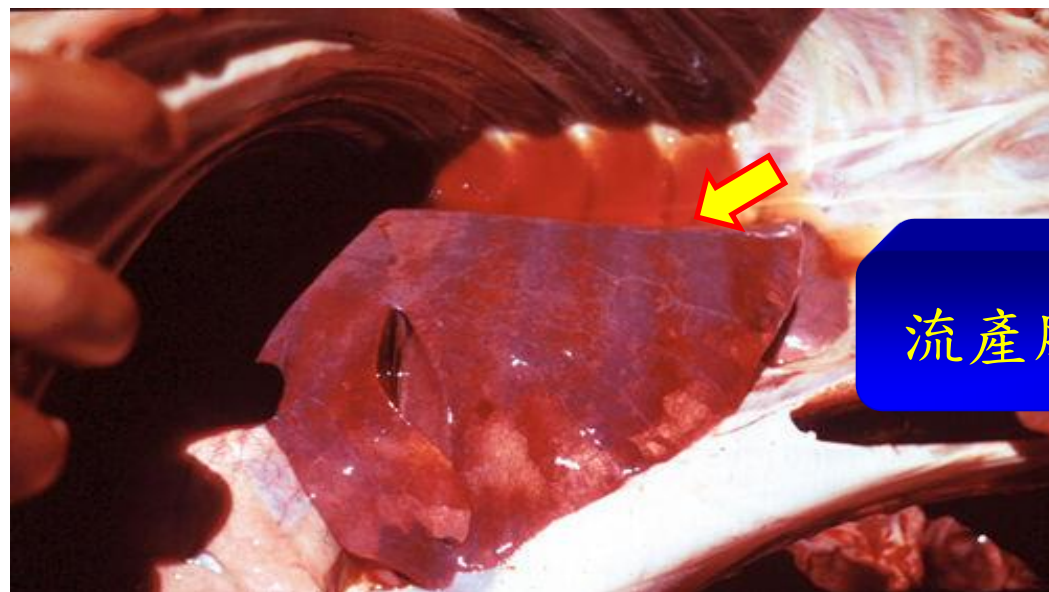
WHAT IS A PATHOLOGIST?



Veterinary pathology



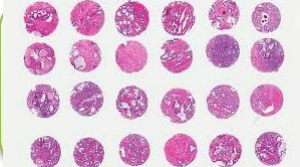
里夫谷熱(Rift Valley fever)



流產胎兒腹膜炎、肺炎



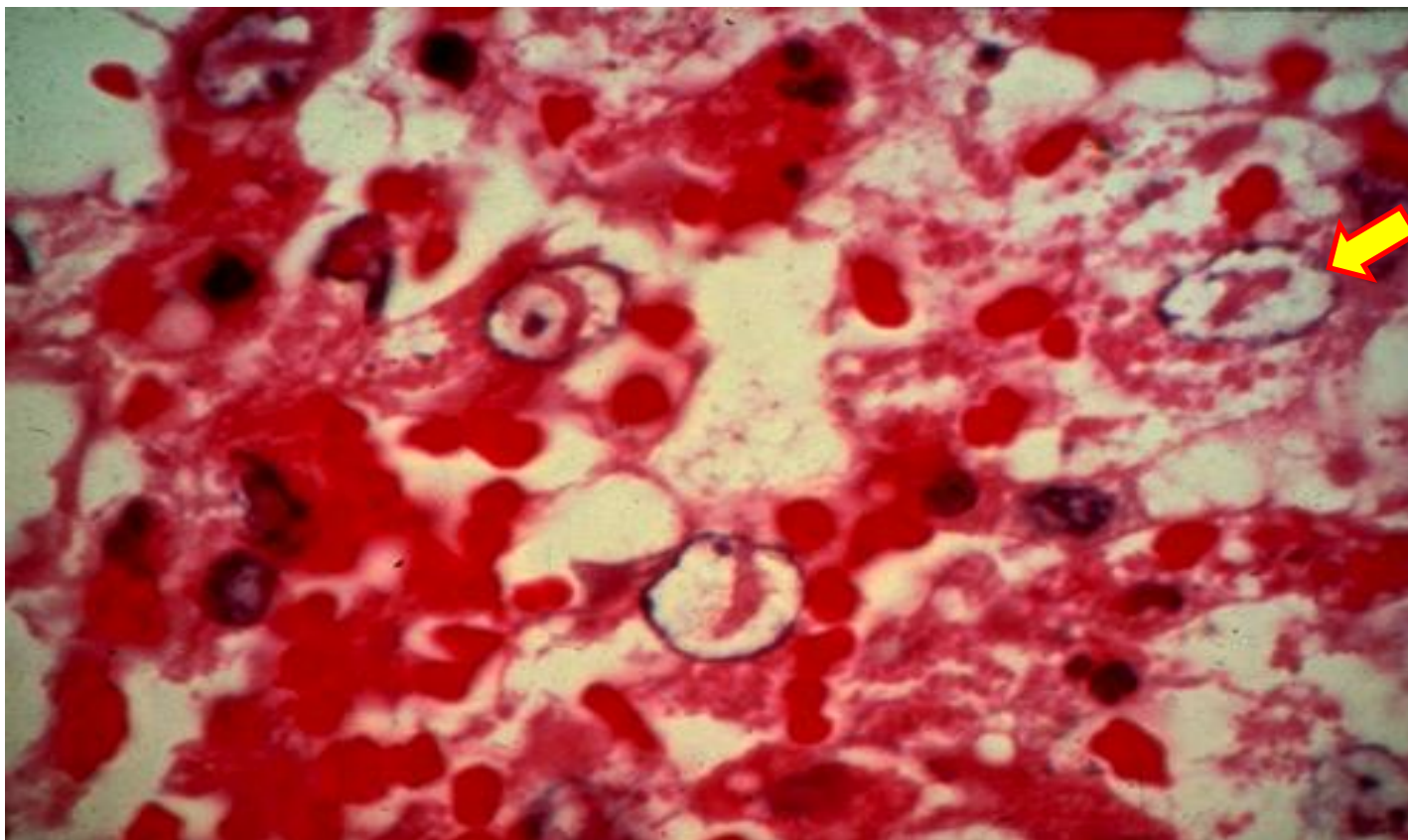
脾臟包被黃白色纖維素性炎症滲出物



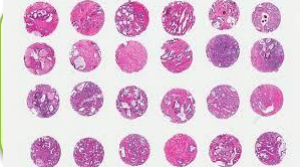
WHAT IS A PATHOLOGIST?



里夫谷熱(Rift Valley fever)



流產胎兒肝臟組織切片可見嗜酸性核內包涵體



WHAT IS A PATHOLOGIST?

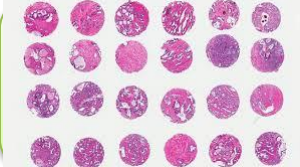


牛接觸傳染性胸膜性肺炎

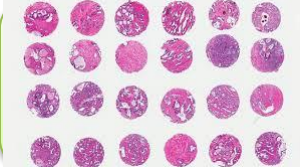


感染CBPP牛隻臨床上消瘦，頭頸部僵直呈特殊弓型站立姿勢

Extracted from CBPP CD by Vet Trop Dis, Univ. Pretoria, SA [6/1999].



- 小型黴漿菌 *Mycoplasma mycoides* 。
- 咳嗽、鼻腔常見液體流出、胸痛背呈弓形、肘關節腫脹及頭頸部伸長的症狀也很明顯。
- 產生典型”大理石樣”肺。



WHAT IS A PATHOLOGIST?



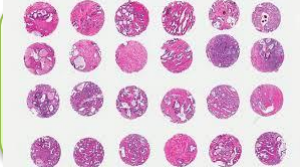
牛接觸傳染性胸膜性肺炎



流鼻水。

急性CBPP 小牛關節炎(腫脹)

Extracted from CBPP CD by Vet Trop Dis, Univ. Pretoria, SA [6/1999].



WHAT IS A PATHOLOGIST?

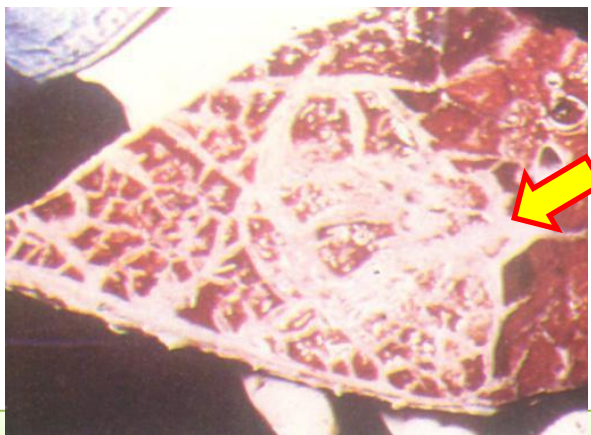
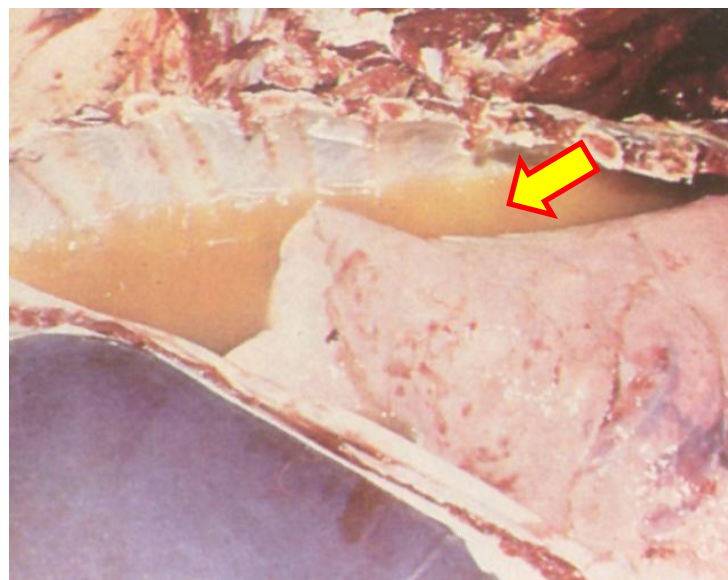


牛接觸傳染性胸膜性肺炎



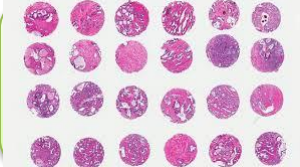
咳嗽、鼻腔常見液體流出、胸痛背呈弓形

胸水



肺組織纖維化，呈典型”大理石樣”肺

Extracted from CBPP CD by Vet Trop Dis, Univ. Pretoria, SA [6/1999].

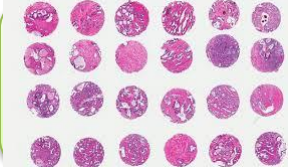


WHAT IS A PATHOLOGIST?

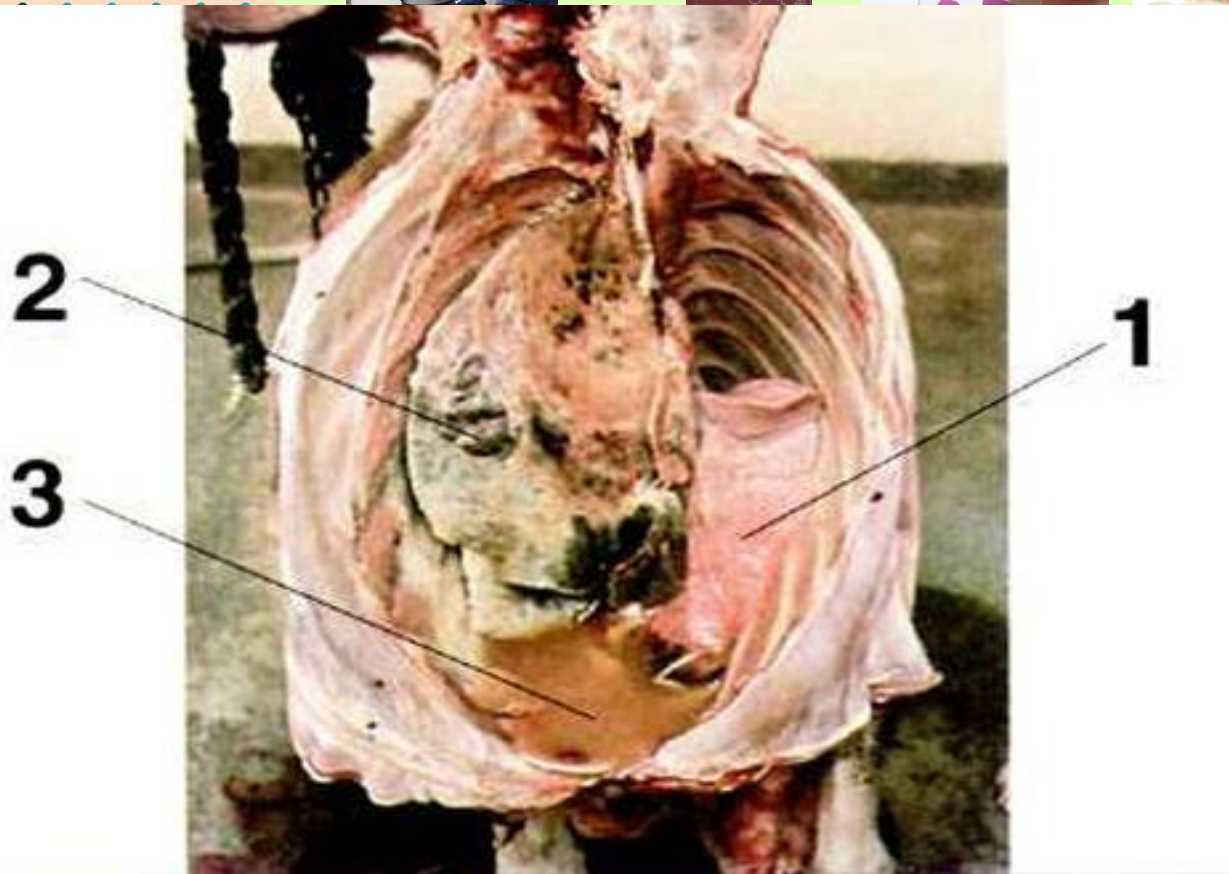


感染CBPP 牛隻：頸部伸直、張口呼吸、咳嗽、肩胛僵硬、腹式呼吸、肋骨明顯

Extracted from CBPP CD by Vet Trop Dis, Univ. Pretoria, SA [6/1999].

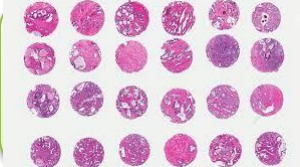


WHAT IS A PATHOLOGIST?



早期 CBPP 病變, 胸腔剖面圖; 單側性左側肺炎病變, 右肺 (1) 正常的。左肺 (2) 嚴重肺炎。肋膜面有黃色纖維素滲出物附著。

Extracted from CBPP CD by Vet Trop Dis, Univ. Pretoria, SA [6/1999].



WHAT IS A PATHOLOGIST?



牛結節疹(LSD)簡介

- 本病為國內甲類動物傳染病
- 病原：痘病毒科之Capripoxvirus屬病毒
- 只感染牛及水牛，非人畜共通傳染病
- 主要透過蚊子、刺蠅或壁蝨等節肢動物傳播

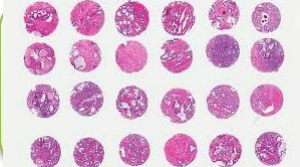


蚊子



刺蠅

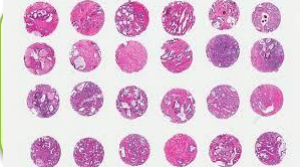




WHAT
IS A
PATHOLOGIST?



- **Capripoxvirus**
- 皮膚、骨骼肌、鼻黏膜、咽喉部、氣管、支氣管、瘤胃、皺胃、肺及子宮壁發生硬厚灰白色的結節組織團塊，大小約0.5~5公分。
- 腿及下腹區域水腫。



WHAT IS A PATHOLOGIST?

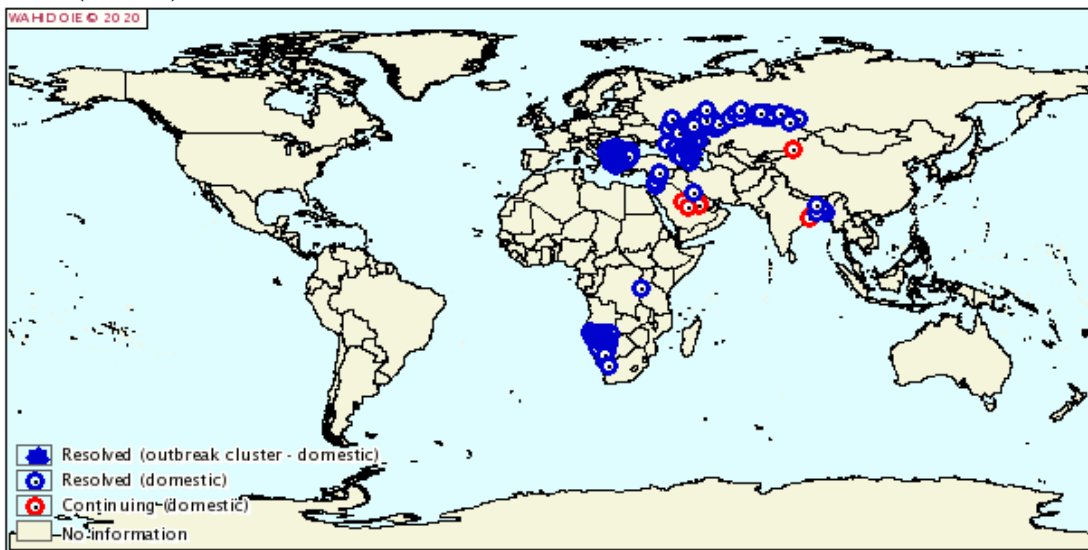


牛結節疹(Lumpy skin disease, LSD)

為台灣動物傳染病分類表中甲類傳染病，是一種急性、亞急性或慢性的牛病毒性傳染病疾病。特徵是結節狀皮膚炎、局部皮膚潰瘍、皮膚水腫，有時甚至會死亡。**此病只會感染牛隻，不會感染其他動物也非人畜共通傳染病**，發生率為5~45%，而死亡率為1~5%。

流行病學

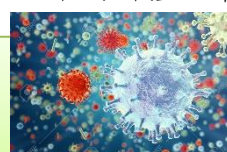
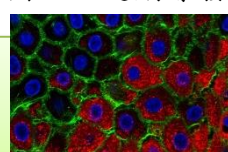
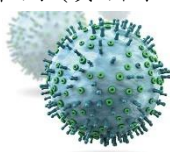
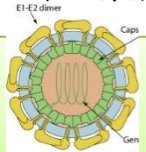
此病自1929年在尚比亞 (Zambia)首次被發現後，至今包含整個中東、土耳其、保加利亞、俄羅斯、中國和高加索等都有發生的案例 (圖一)。近期爆發地區：中國新疆、印度與巴林等地區 (圖二)。

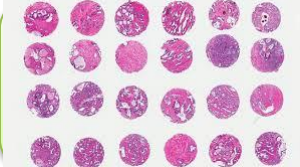


圖一、2016~2020年牛結節疹全球流行分布圖 (資料來源/OIE)。



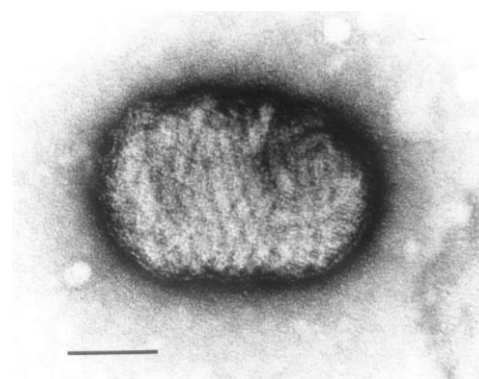
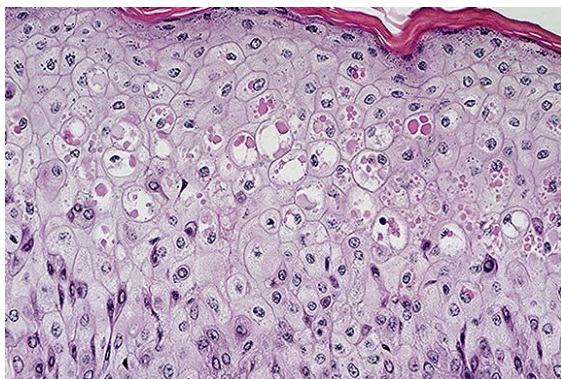
圖二、近期爆發地區-中國新疆、印度與巴林等地區。



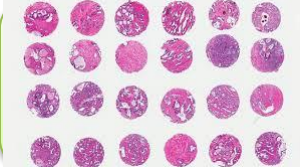


病毒特性

此病為痘病毒科 (Poxviridae)，山羊痘病毒屬 (Capripoxvirus)，牛結節疹病毒 (lumpy skin disease virus, LSDV) 所致，與綿羊痘及山羊痘病毒關係密切，用常規的血清學測試無法區別。LSDV在 55°C 下2小時和 65°C 下30分鐘會被不活化。在 -80°C 下存活長達10年。被感染組織液中的病毒可在 4°C 下保存6個月，該病毒易受酸鹼pH值影響。文獻指出該病毒對乙醚、氯仿、福馬林和某些清潔劑 (例如，去離子水) 的敏感性高，容易被不活化。此外，苯酚、次氯酸鈉、四級銨和衛可 (2%) 都可降低此病毒的感染力。



(圖片來源/ 行政院農委會家衛所-反芻獸疾病診斷輔助系統-牛結節疹)



WHAT IS A PATHOLOGIST?



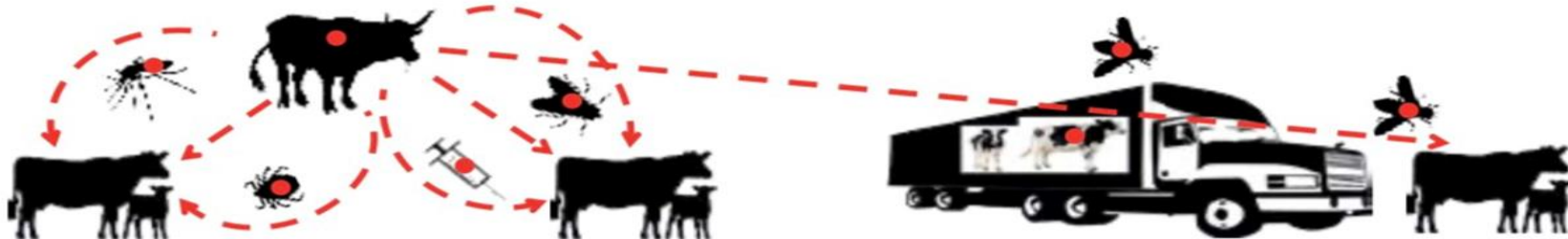
傳染途徑及牧場生物防治重點

本病主要透過蚊子（例如 *Culex mirificens* 及 *Aedes natrionus*）、刺蠅（例如 *Stomoxys calcitrans* 及 *Biomyia Fasciata*）或壁蝨（*Riphicephalus appendiculatus* 及 *Amblyomma hebraeum*）等節肢動物傳播。傳播途徑如下圖所示，不同地區傳播的病媒也不盡相同。此回發生在金門地區牛隻案例，其真正的病媒傳染源還需僅一步追蹤釐清。

牛結節疹病毒傳播途徑示意圖

短距離傳播

長距離傳播



無感染牛隻

帶毒牛隻

帶毒壁蝨

帶毒蚊子

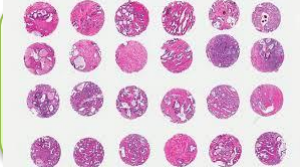
帶毒蠅

LSD病毒

注射器

長距帶毒者運輸

牛結節疹病毒傳播途徑示意圖(圖片來源/FAO牛結節疹技術手冊)。



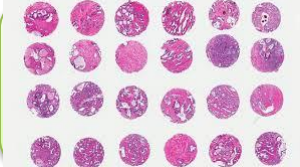
WHAT IS A PATHOLOGIST?



牛結節疹病毒(LSDV)簡介



皮膚結節疹症狀發病至恢復

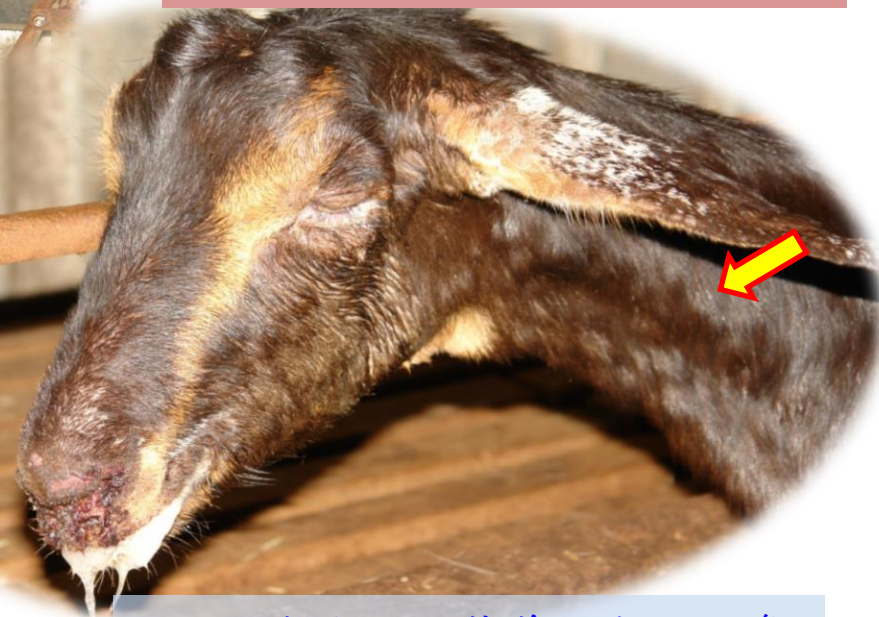


羊痘 (Sheep pox and goat pox)

- Capripoxvirus
- 綿羊與山羊。
- 發燒、鼻炎、流淚及結膜炎，皮毛稀疏區易發現紅疹
- 惡性羊痘常出現於小山羊及小綿羊，特徵是皮膚無毛區、呼吸道粘膜及口腔出現痘瘡
- 良性羊痘，常見成年動物，皮膚病變輕微
- 細胞質內含有大小一嗜酸性質內包涵體。
- 本症要與傳染性膿瘡(Orf)及口蹄疫做區別診斷



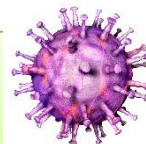
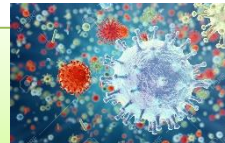
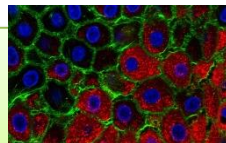
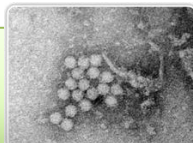
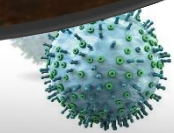
山羊痘 (goat pox)

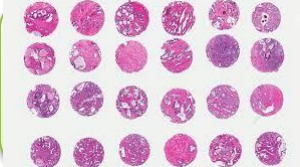


全身出現突起之硬實結節。尤以背部及肩頸部最明顯

- 極度瘦削。營養不良。眼鼻分泌物增加。

- 口、唇、臉部周圍、耳朵內側皮膚及乳房皮膚組織，呈不同程度的皮膚病變，包括小紅疹、丘疹、圓型潰瘍及結痂等病變。





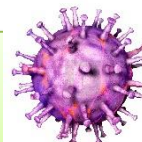
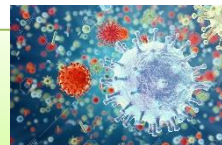
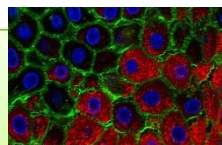
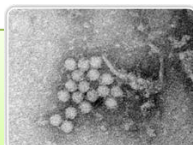
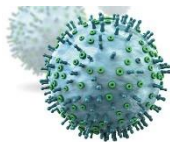
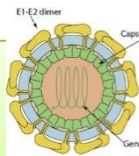
WHAT IS A PATHOLOGIST?

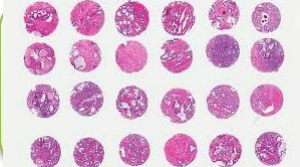


山羊痘 (goat pox)

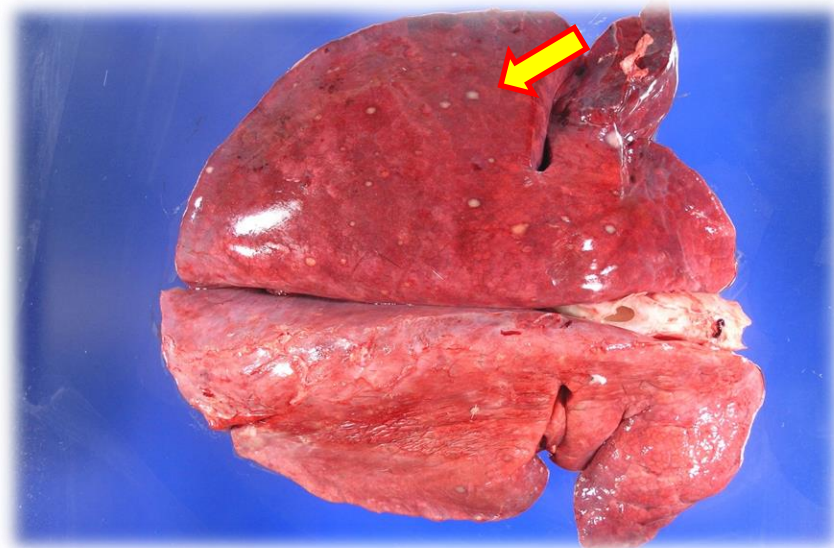


皮膚組織，呈不同程度的皮膚病變，包括小紅疹、丘疹、圓型潰瘍及結痂等病變。

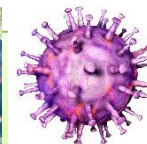
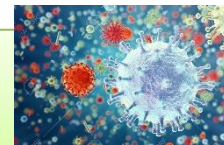
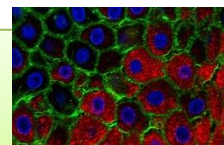
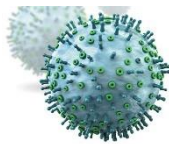
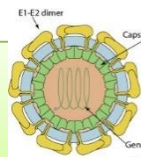


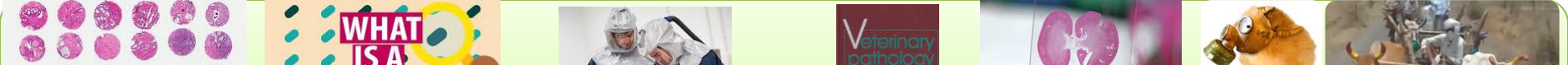


WHAT IS A PATHOLOGIST?



纖維素性胸膜肺炎，肺濕重潮紅，切面呈瀰漫性水腫病變，膈葉密佈直徑0.2-0.5 cm觸之硬實大小之白色突起圓形結節，部份結節中央呈出血壞死灶。



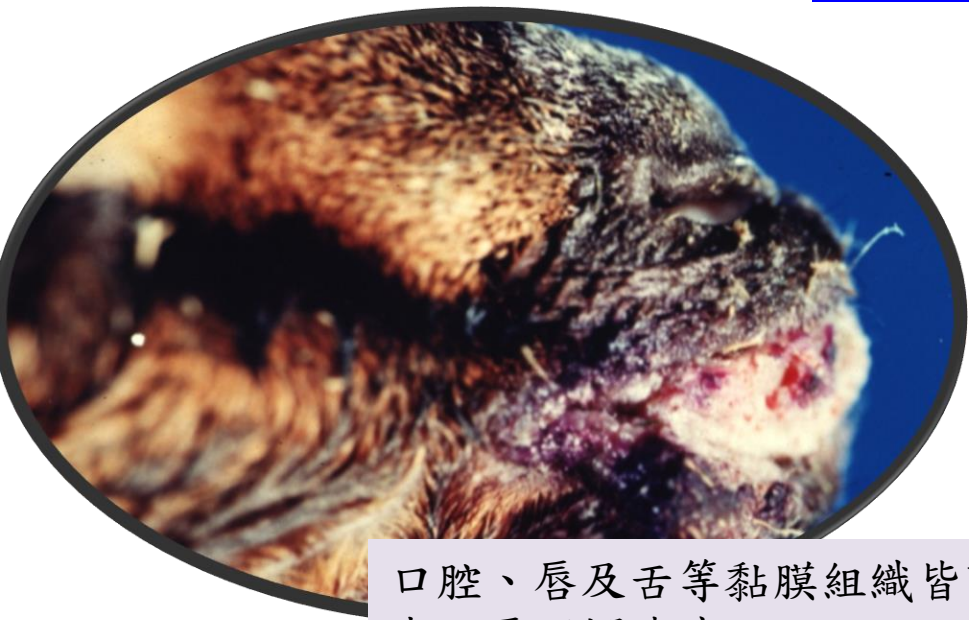


WHAT IS A

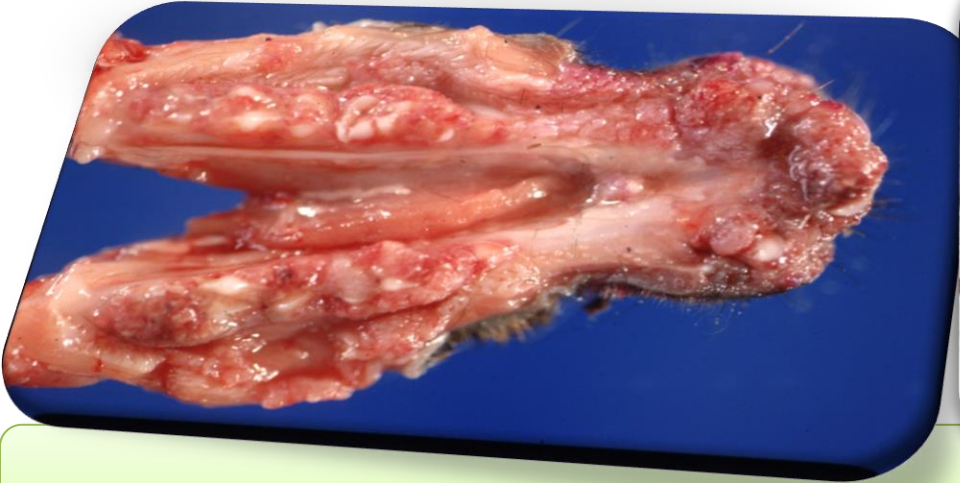
Veterinary pathology

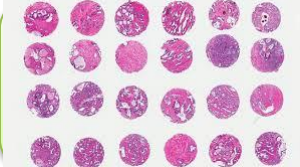
類症鑑別及討論

山羊接觸傳染性化膿性口炎



口腔、唇及舌等黏膜組織皆可見丘疹及小水泡瀰漫性分佈，重症者口唇瀰爛潰瘍

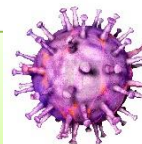
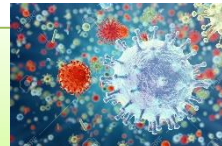
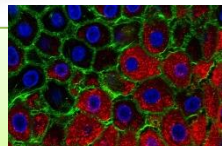
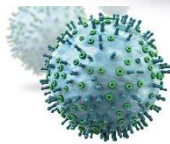
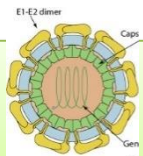
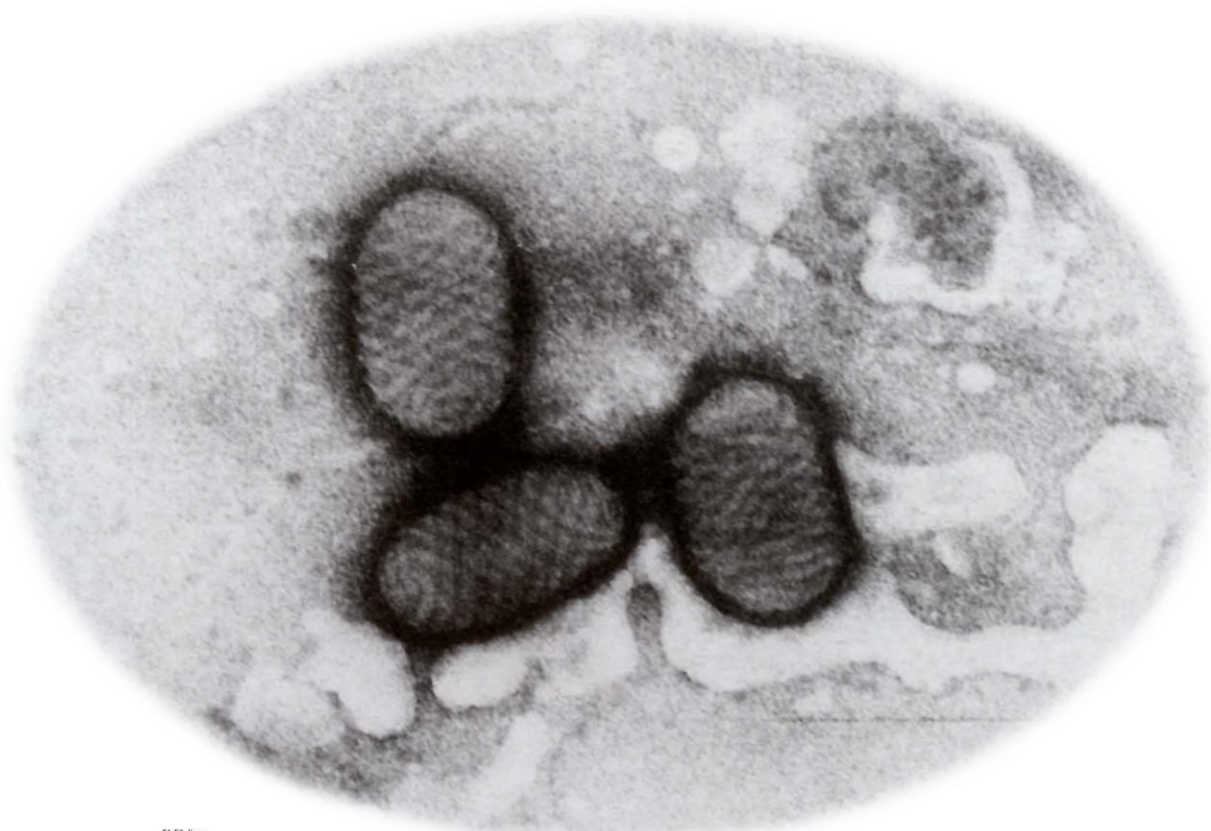


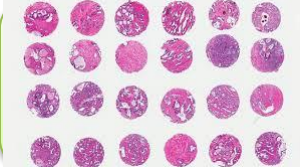


WHAT IS A PATHOLOGIST?



山羊接觸傳染性化膿性口炎





副結核病簡介 病因

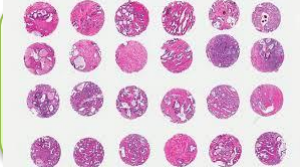
- (*Mycobacterium avium* subspecies *paratuberculosis*, MAP)
副結核分支桿菌。
- 病原大小為 $0.5\mu\text{m} \times 1-2\mu\text{m}$ ，為革蘭氏陽性、
抗酸染色陽性，不形成孢子，不具莢膜，
也不具運動性。

歷史背景

- 先於**1895年 Johne和Frothingham**發現，
由副結核分支桿菌，引起反芻動物間歇性及
慢性下痢疾病，命名為副結核病
(paratuberculosis) 或約尼氏病(**Johne's disease**)
(pronounced "yo-knees")

副結核病是什麼疾病？
哪種動物會得此病？

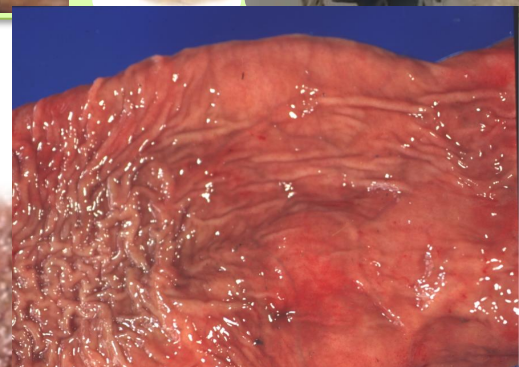




WHAT IS A PATHOLOGIST?



牛副結核病

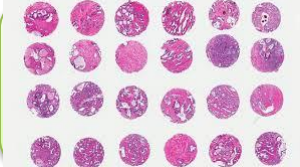


正常盲腸粘膜、平滑
無太多皺摺



盲腸及迴腸上皮細胞增生呈洗衣板樣皺摺

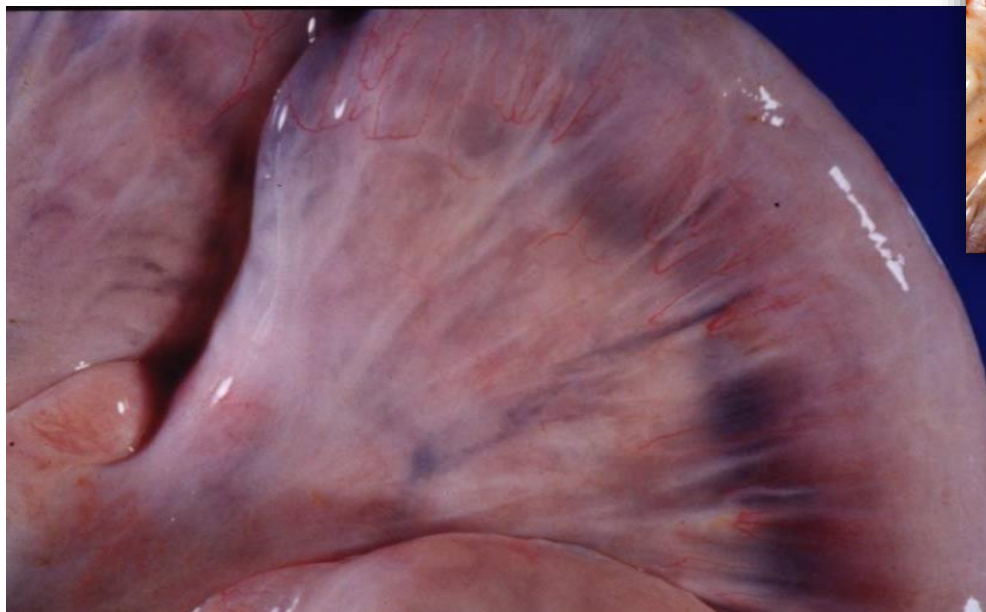




WHAT IS A PATHOLOGIST?



牛副結核病

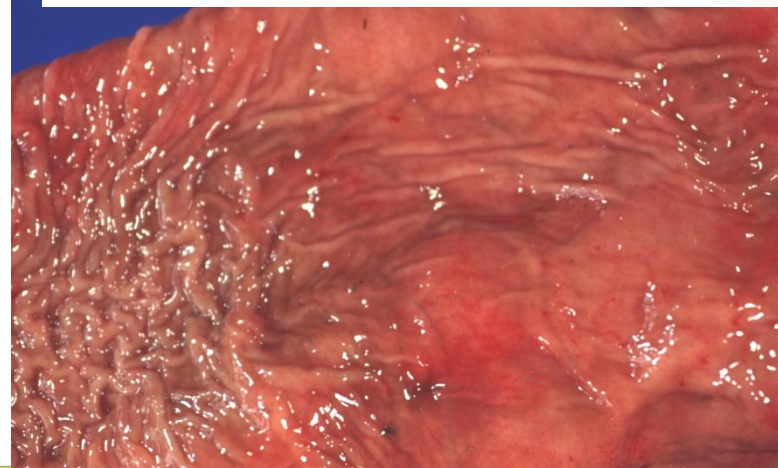


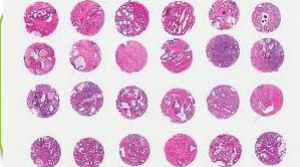
小腸漿膜面外觀肥厚，彈性增加，如水管般



正常小腸外觀鬆軟

正常腸粘膜、平滑無太多皺摺





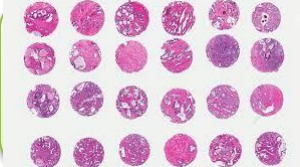
WHAT
IS A
PATHOLOGIST?



豬瘟

(Classical swine fever)

- 豬
- 脾梗塞
- 淋巴結周邊性出血
- 漿膜和粘膜下層的出血、血栓
- 非化膿性腦炎



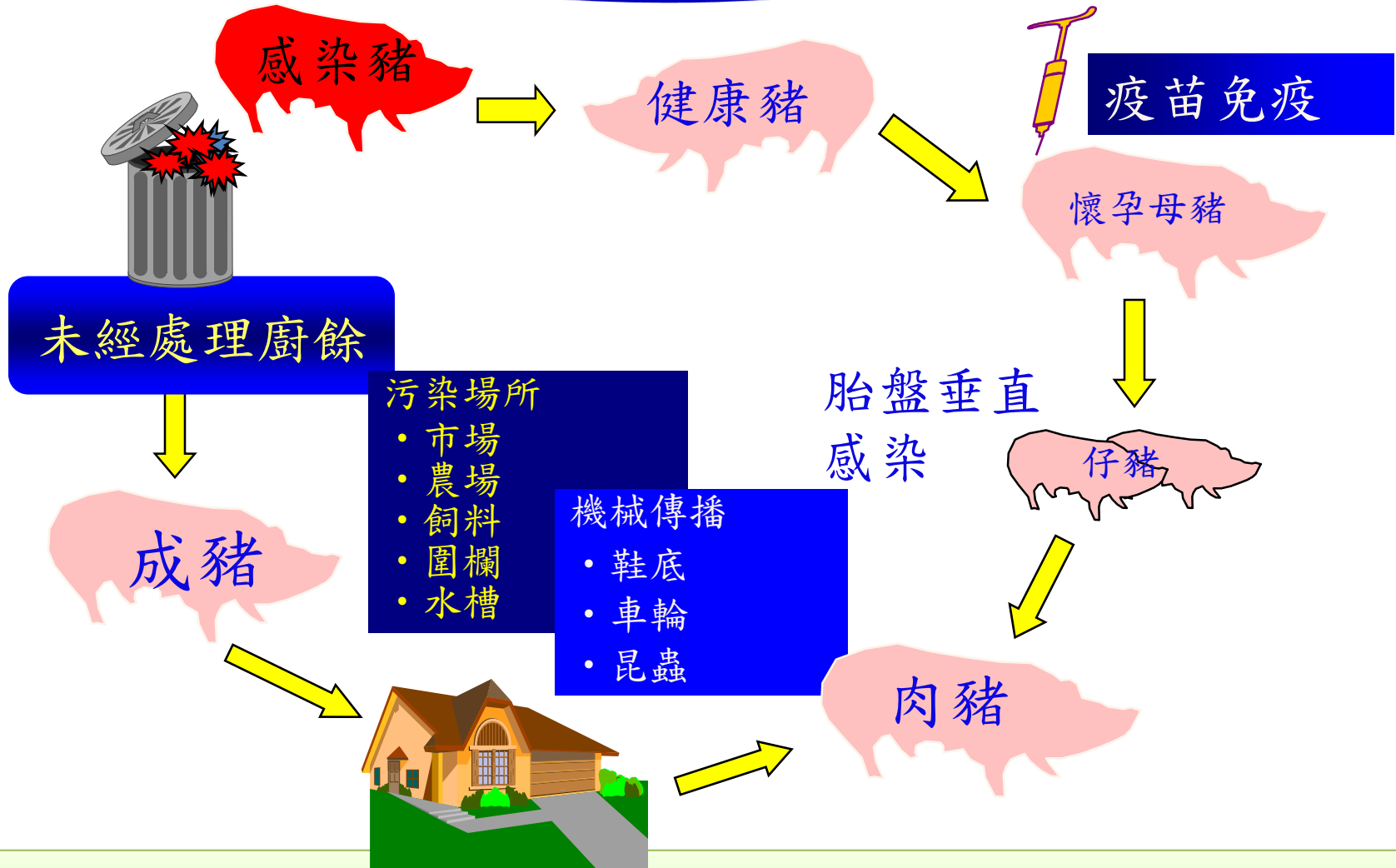
WHAT IS A PATHOLOGIST?

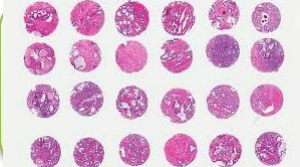


Veterinary pathology



豬瘟傳播模式圖





WHAT IS A PATHOLOGIST?



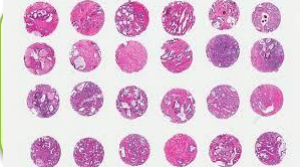
豬瘟臨床症狀

書上說的，不見得適用

數據變現/農企業獸醫師



- 👉 病程後期，步態不穩呈搖擺狀，繼而後軀麻痺，病豬腹部、鼻端、耳尖以及四肢內側皮膚常可見紫色斑。
- 👉 病程長、間斷性食慾不振、發燒、毒血症、下痢等為慢性型的特徵。有時呈皮膚炎、脫毛、眼結膜炎與運動障礙，最後呈後軀麻痺。
- 👉 感染豬瘟以後，存活時間若超過30天以上，可歸類為慢性型。



WHAT IS A PATHOLOGIST?



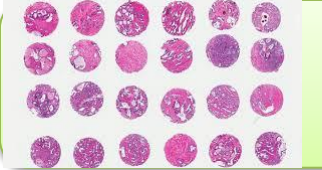
豬瘟臨床症狀(20年前)



豬瘟罹病豬呈高熱、畏寒，小豬喜聚集成堆。



罹患慢性豬瘟之保育後期豬隻，臨床呈現消瘦、背毛粗剛、並堆擠在一起。



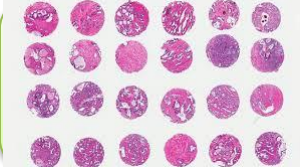
WHAT IS A PATHOLOGIST?



豬瘟 ??? Sal ???



病豬皮膚潮紅、皮下點狀及斑狀出血。

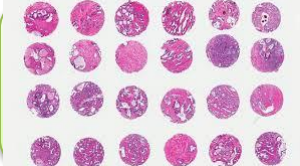


WHAT IS A PATHOLOGIST?



豬瘟 (Classical swine fever)

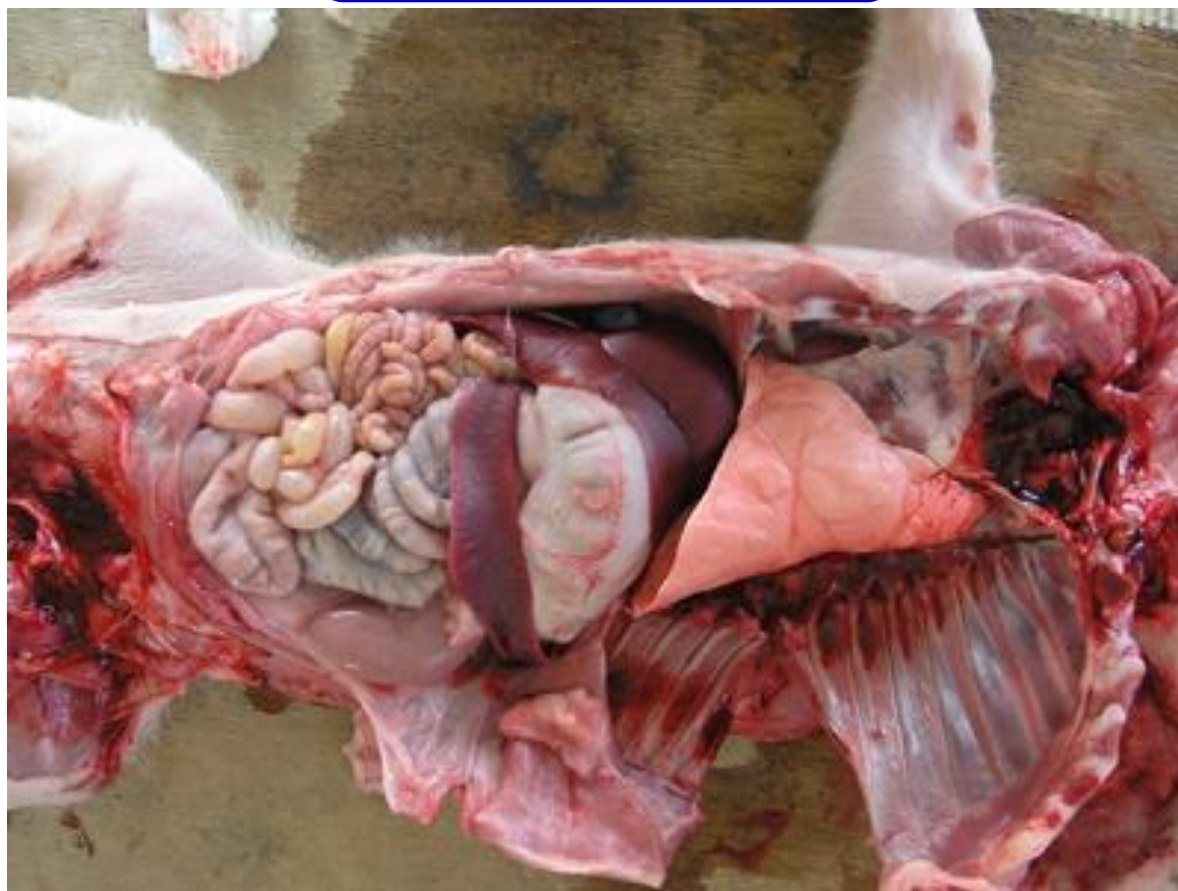


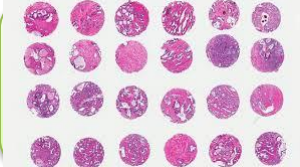


WHAT IS A PATHOLOGIST?

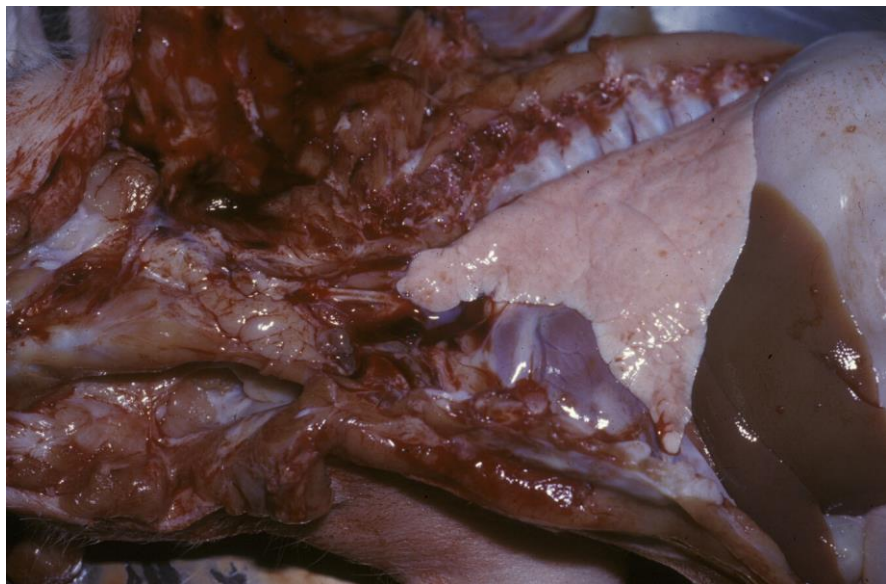


正常豬隻

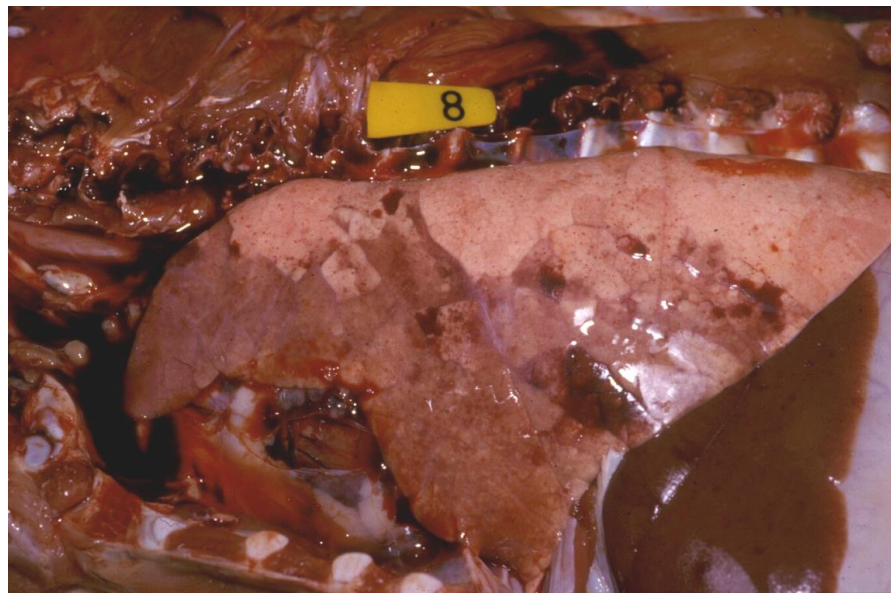




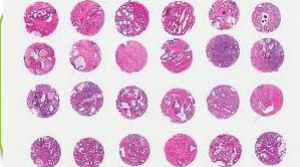
WHAT IS A PATHOLOGIST?



正常豬隻肺臟
肺塌陷可看到心臟一部分



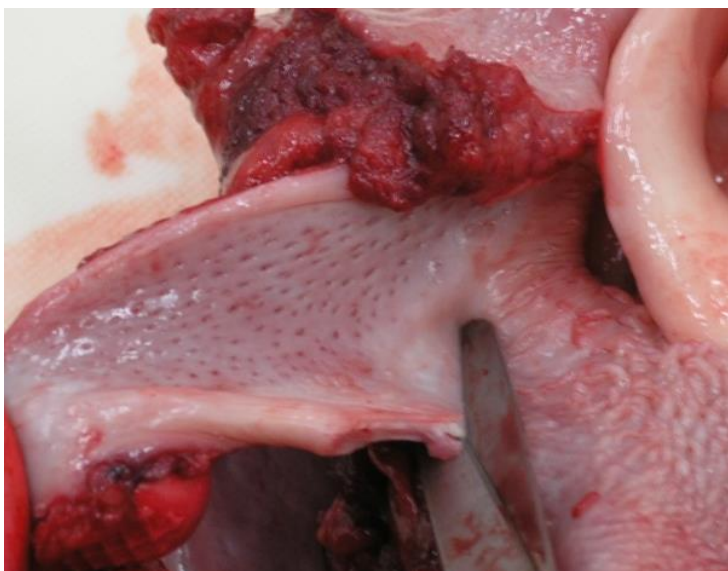
肺炎、肺出血不塌陷



WHAT IS A PATHOLOGIST?



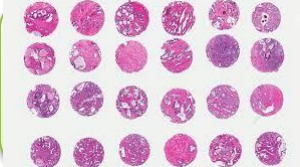
豬瘟 (Classical swine fever)



正常扁桃腺



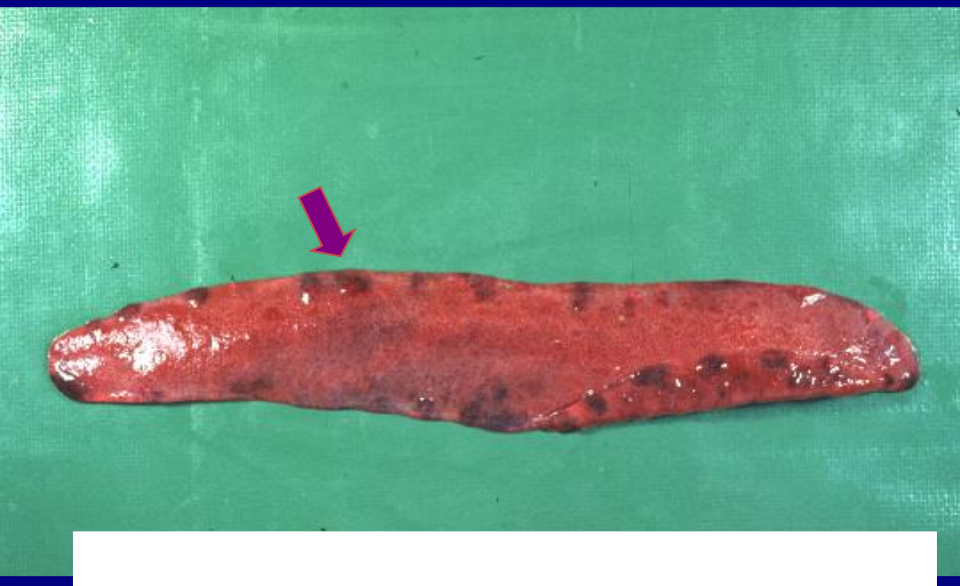
扁桃腺壞死潰瘍(豬瘟?假性狂犬病? 沙氏桿菌?)



WHAT IS A PATHOLOGIST?



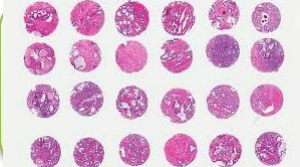
豬瘟 (Classical swine fever)



典型脾臟梗塞病變，可見脾臟周邊散發紅色梗塞區（箭頭）。



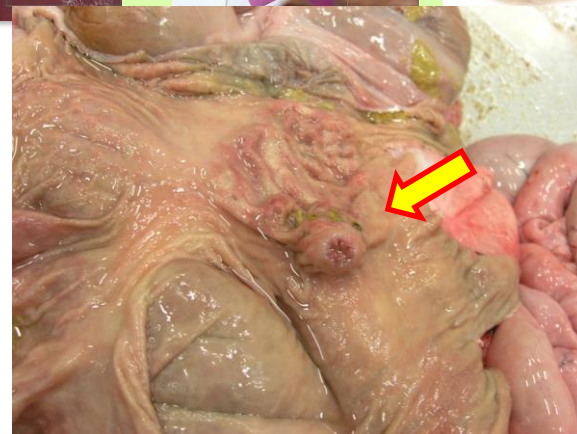
脾臟肉眼病變，可見紅色梗塞區（黃色長箭頭）及白色梗塞區（紅色短箭頭）夾雜期間。



WHAT IS A PATHOLOGIST?



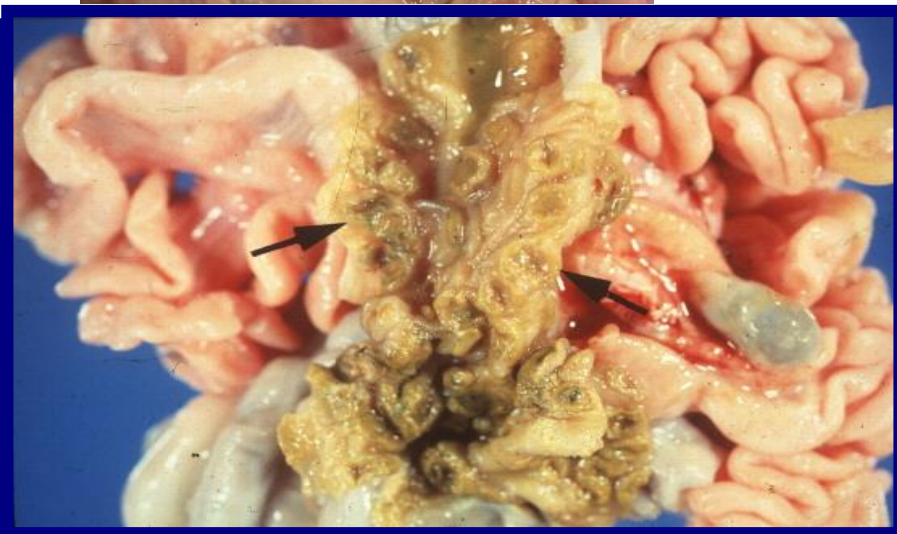
豬瘟 (Classical swine fever)



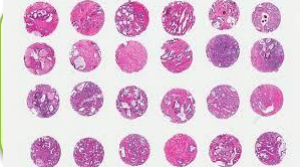
正常迴盲瓣



結腸外觀腫脹充滿腸內容物，此為豬瘟病毒感染後腸管內沙氏桿菌破壞腸粘膜深層所造成之特異病變。



圖左之結腸切面呈鈕釦狀潰瘍灶（箭頭所指）。



WHAT IS A PATHOLOGIST?



豬瘟 (Classical swine fever)

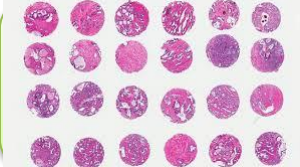


急性豬瘟病例：腎腫大密發紅色出血點及黃白色小壞死灶。

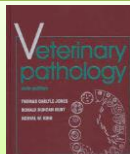
沙氏桿菌引起之敗血症於腎臟亦可見如此病變，需區別之。



豬瘟病豬：膀胱粘膜密發點狀出血。豬隻發生其他敗血症時亦會有此病變。

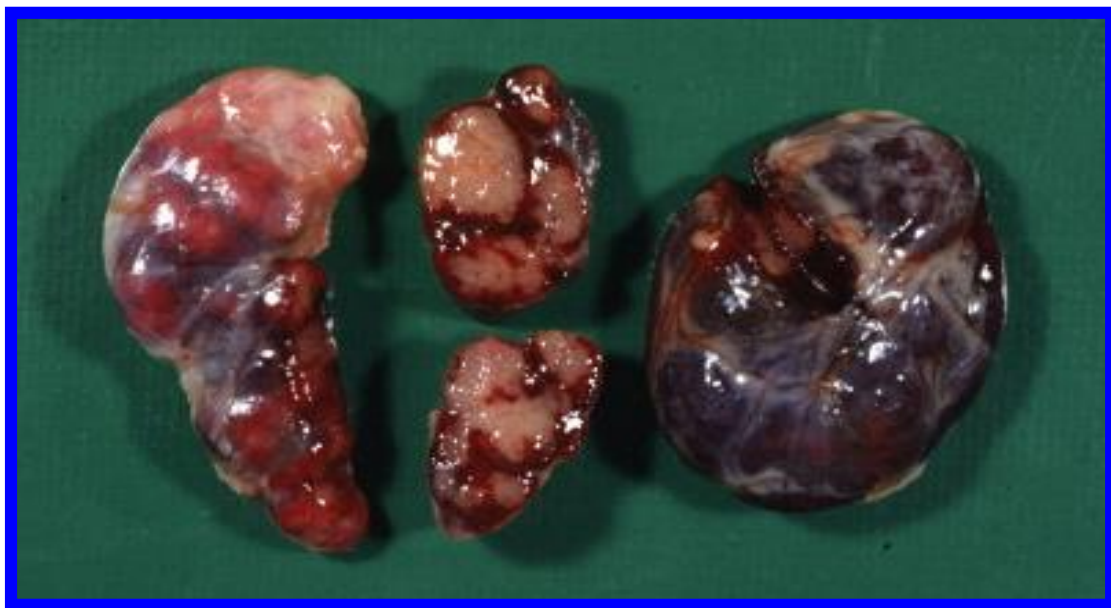


WHAT IS A PATHOLOGIST?



豬瘟

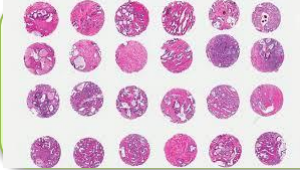
(Classical swine fever)



感染豬瘟強毒豬隻，淋巴結腫大呈周邊出血病變，其他敗血性疾病也會導致淋巴結周邊出血現象，因此需注意區別之。



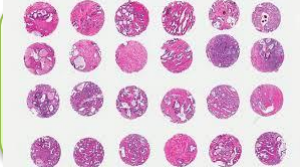
感染慢性豬瘟豬隻，淋巴結水腫、彈性消失、細胞間隙擴大（如箭頭）。



炭疽（Anthrax）

病原

炭疽桿菌（*Bacillus anthracis*），屬於蠟狀芽孢桿菌（*Bacillus cereus*）群，同群尚有蘇力菌（*Bacillus thuringiensis*），三者極為相似，炭疽菌無運動性、為具芽孢的棒狀桿菌，大小約 $4-8\ \mu\text{m} \times 1-1.5\ \mu\text{m}$ ，屬於革蘭氏陽性菌，常呈短鏈狀排列。

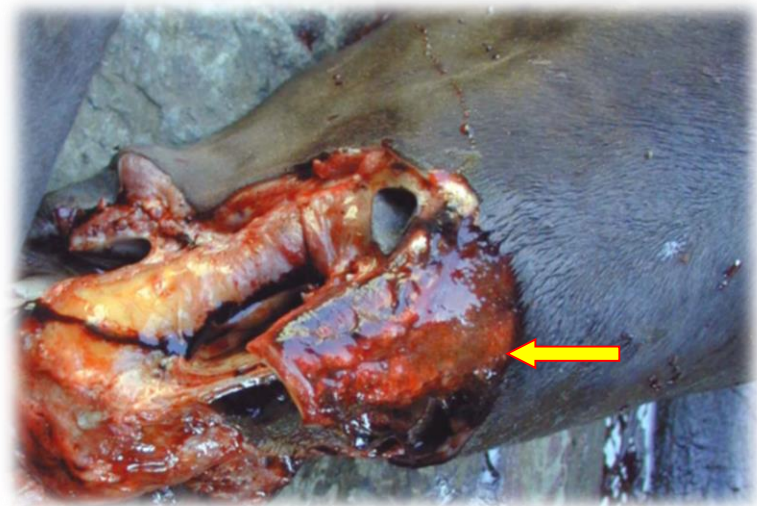


WHAT IS A PATHOLOGIST?

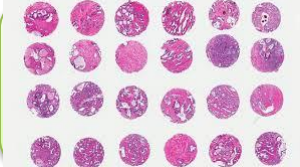


馬鼻部浮腫、左側眼瞼腫脹、鼻腔潮紅，流出暗褐色血水

炭疽（Anthrax）



鼻腔及皮下組織嚴重出血、水腫，可見黃褐色漿液性滲出液蓄積



WHAT IS A PATHOLOGIST?

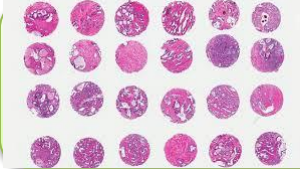


炭疽 (Anthrax)



鼻腔及皮下組織嚴重出血、水腫，可見黃褐色漿液性滲出液蓄積

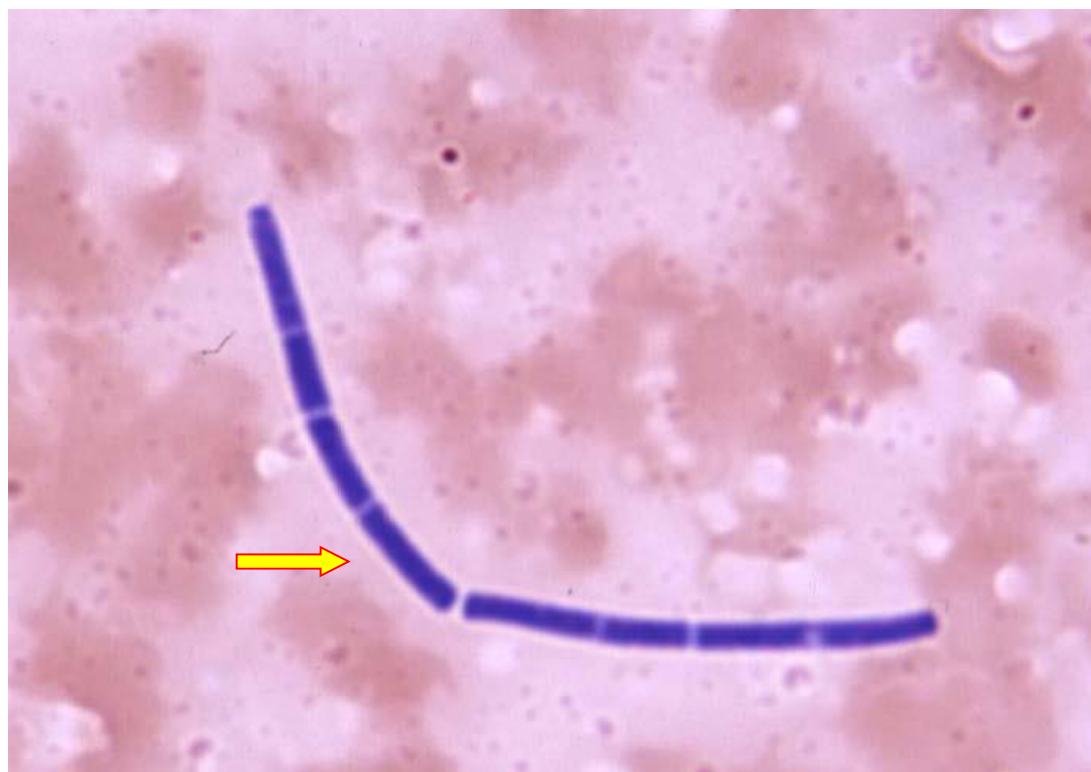
兩側肺葉濕重潮紅，切面含大量未凝固血液呈暗黑色，膈葉肋膜面有白色纖維素物附著。



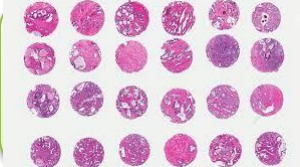
WHAT
IS A
PATHOLOGIST?



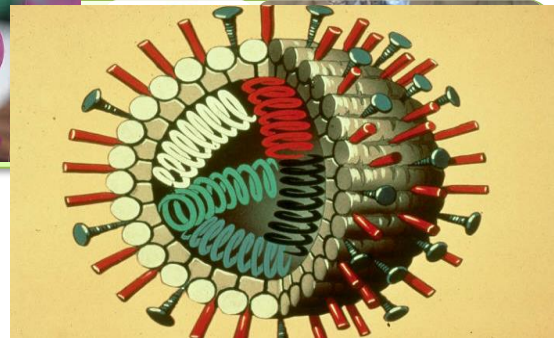
炭疽 (Anthrax)



- 血液抹片含大量齊頭短桿菌，兩兩成對，或三、四個串聯呈竹節狀排列。 Wright's Stain x1,000



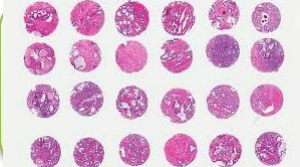
WHAT IS A PATHOLOGIST?



HPAI 關鍵影像/缺蛋/產蛋率下降/碎蛋/孵化率低

• 家禽流行性感冒病毒

- 正黏液病毒科 (orthomyxoviridae) 的A型流行性感冒病毒
- 8條分別片段的單股負股RNA遺傳物質
- 製造10種不同蛋白質
- 不同的流感病毒株一起繁殖時，容易發生遺傳物質交換 (gene reassortment)，造成變異毒株出現



WHAT IS A PATHOLOGIST?



正常雞隻外觀

發病雞隻外觀

雞冠紅潤

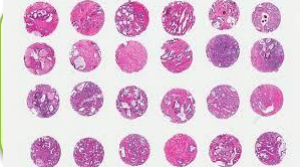
禽流感：雞冠暗紅鬱血發疔



正常眼睛及顏面



貧血：
顏面蒼白



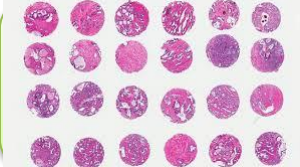
WHAT IS A PATHOLOGIST?



高病原性家禽流行性感冒 (Highly pathogenic avian influenza)



感染HPAI雞隻顏面及雞冠呈嚴重充血。1983年美國賓州H5N2病例。日本北海道大學喜田 宏教授提供。



WHAT IS A PATHOLOGIST?



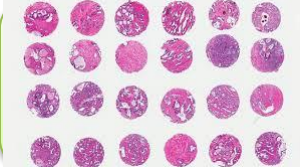
高病原性家禽流行性感冒 (Highly pathogenic avian influenza)



感染HPAI雞隻眼四周皮膚、雞冠及肉垂嚴重充血
。1983年美國賓州H5N2病例。日本北海道大學喜田
宏教授提供。



雞隻腳鱗嚴重出血



WHAT IS A PATHOLOGIST?



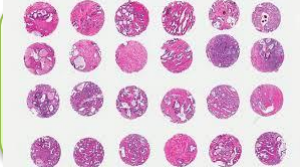
高病原性家禽流行性感冒 (Highly pathogenic avian influenza)



人工感染H7N7 HPAI病毒株，雞隻腳鱗嚴重出血。
SHLEE; 1991



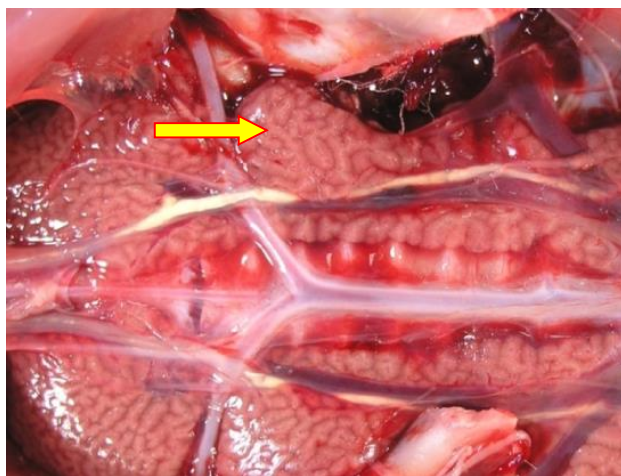
人工感染H7N7 HPAI病毒株，腹部脂肪壞死(箭頭)
SHLEE; 1991



WHAT IS A PATHOLOGIST?



高病原性家禽流行性感冒 (Highly pathogenic avian influenza)

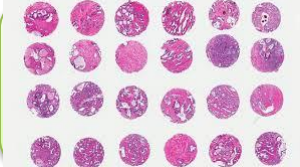


人工感染H7N7 HPAI病毒株，腎臟蒼白腫大、小葉分隔明顯

SHLEE; 1991



正常雞腎臟



WHAT IS A PATHOLOGIST?



正常雞隻外觀

發病雞隻外觀

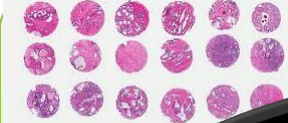
雞冠紅潤

禽流感：雞冠暗紅鬱血發疔



正常眼睛及顏面

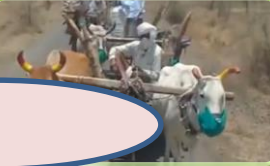
貧血：
顏面蒼白



WHAT IS A



Veterinary pathology



台南肉種雞場

H5N2 HPAI Case 2



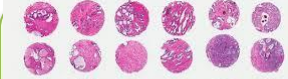
A/CK/Tainan/a1997/2012



IVPI=2.53



-RRKR-



HPAI H5N2 Case 3

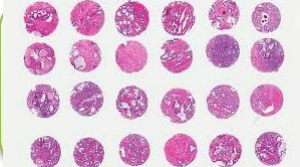
IVPI=2.28

彰化土雞場



A/CK/Changhua/120205/2012

-RKKR-

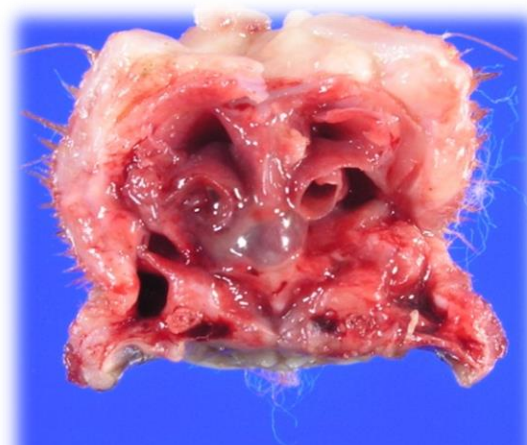


WHAT IS A PATHOLOGIST?

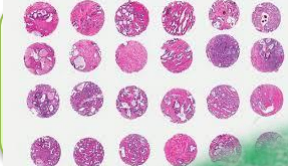


肉眼病變

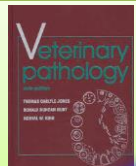
- 顏面、雞冠、肉垂呈紫斑發紺及局部潰瘍



鼻腔黏膜潮紅、充滿大量分泌液



WHAT IS A PATHOLOGIST?

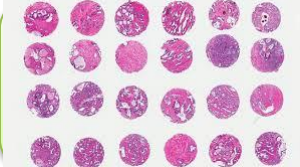


顏面、雞冠、肉垂呈紫斑發紺及局部潰瘍



腳鱗紫斑出血、皮下水腫可見炎症滲出液





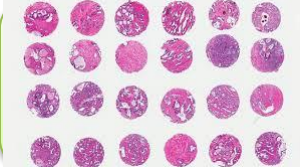
WHAT IS A PATHOLOGIST?



新城病 (Newcastle disease)



神經症狀、斜頸扭頭



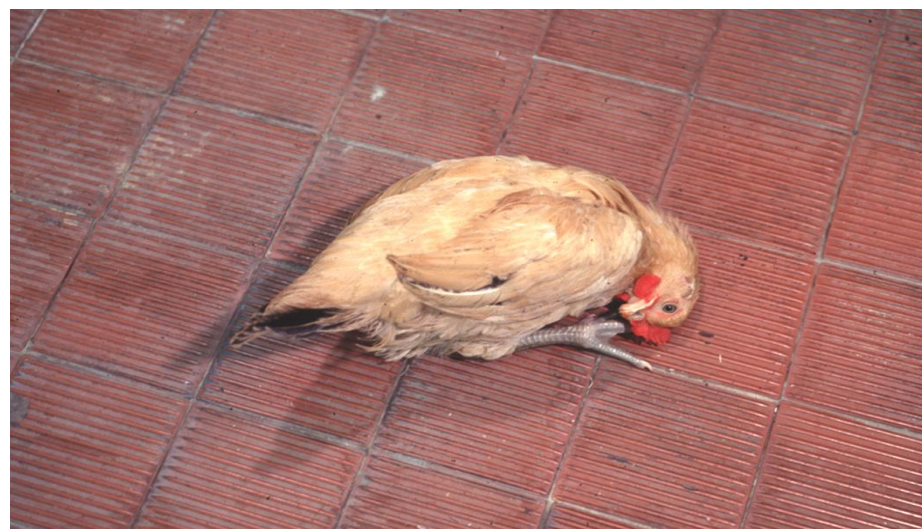
WHAT IS A PATHOLOGIST?



新城病 Newcastle disease

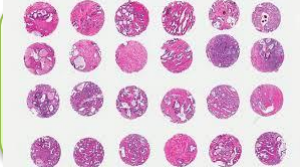


綠色下痢便



神經症狀、斜頸扭頭

腦組織切片



WHAT IS A PATHOLOGIST?



新城病-神經症狀



新城病-頭向後仰
甩頭之神經症狀

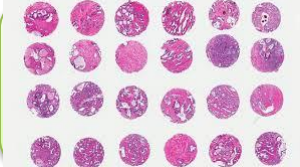


肉毒桿菌中毒-
頭頸無力下垂



鴿子感染新城病-
急速死亡無神經症狀

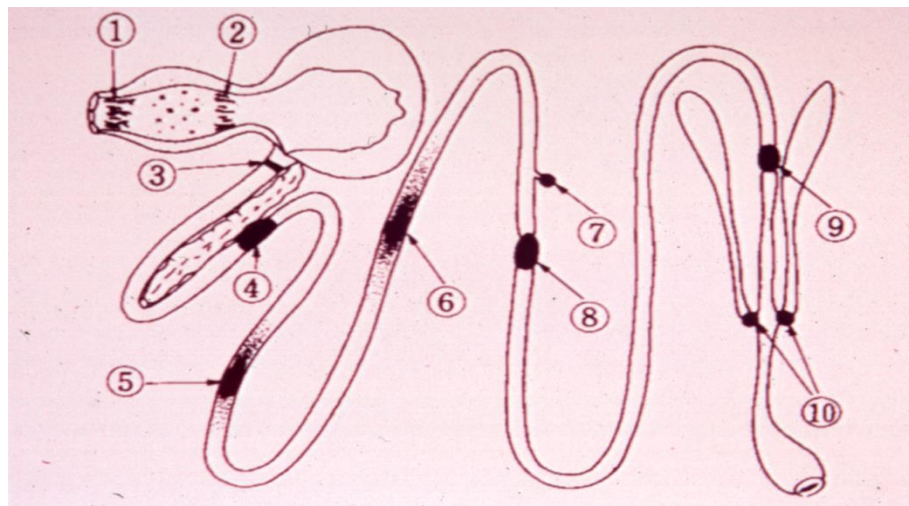




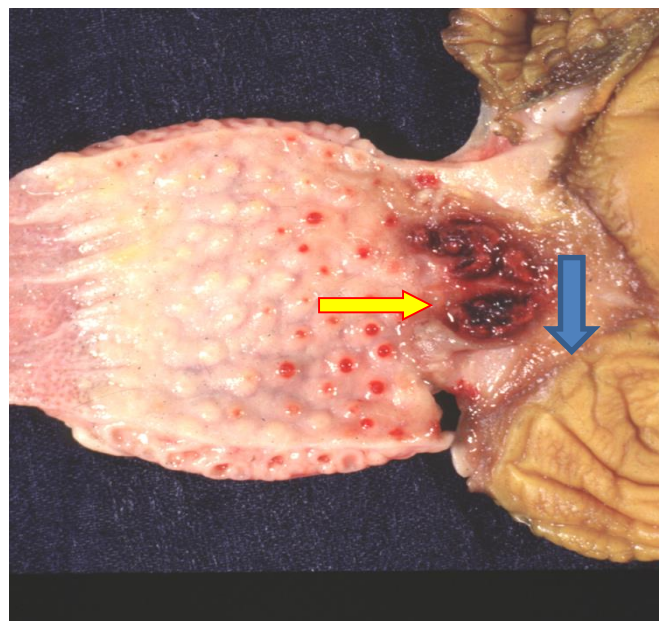
WHAT IS A PATHOLOGIST?



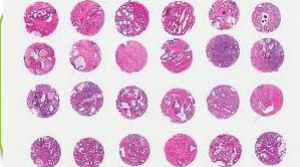
新城病 Newcastle disease



集淋小結(免疫細胞集結處)



腺胃黏膜集淋小結出血潰瘍



WHAT IS A PATHOLOGIST?



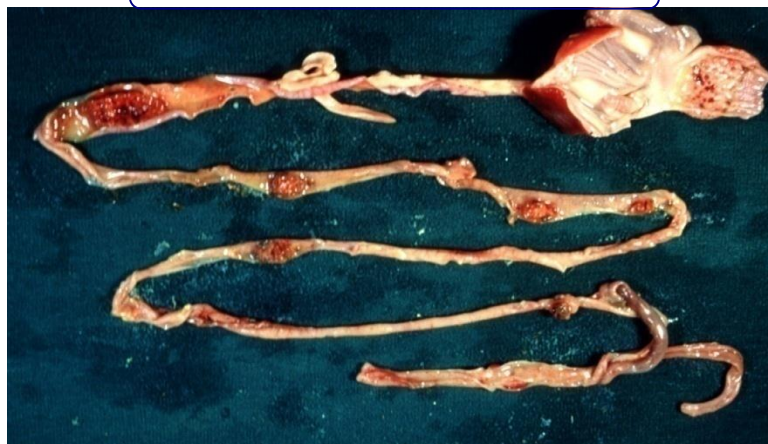
新城病(Newcastle disease)



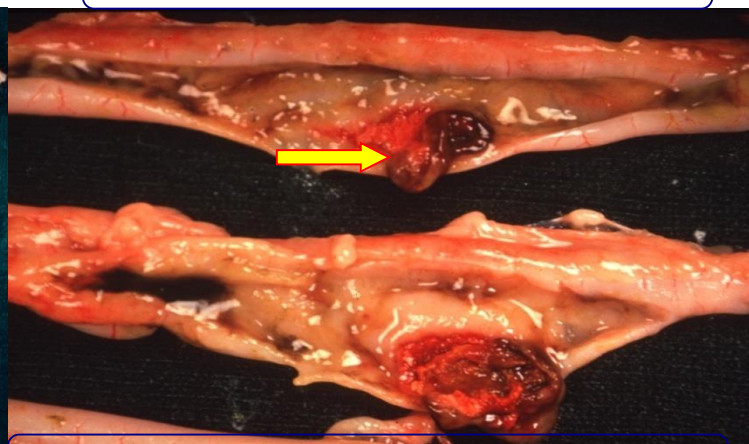
神經症狀、斜頸扭頭



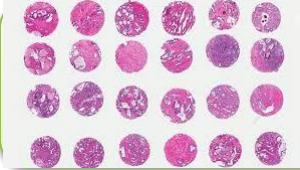
腸管集淋小結腫脹出血



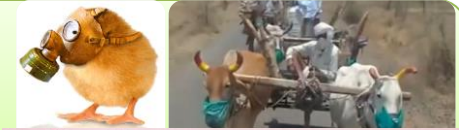
腸管集淋小結腫脹出血



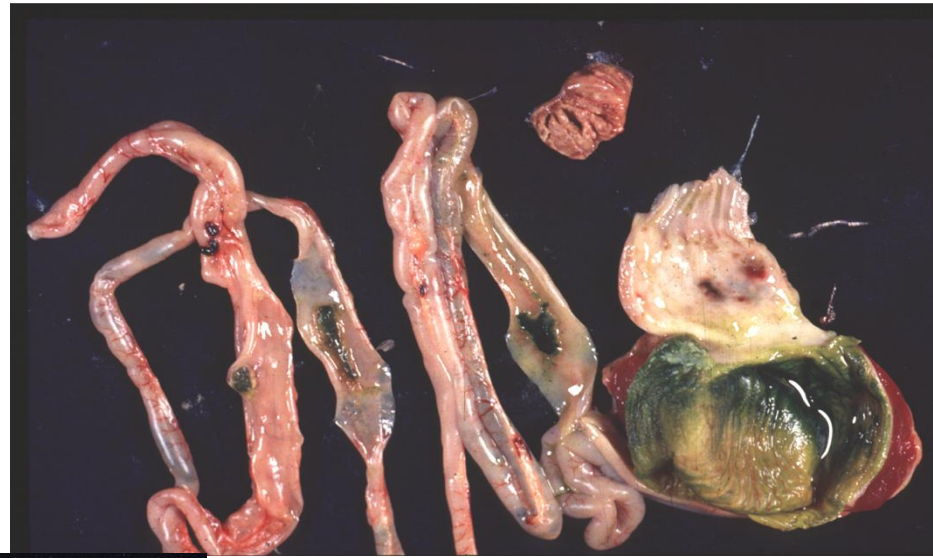
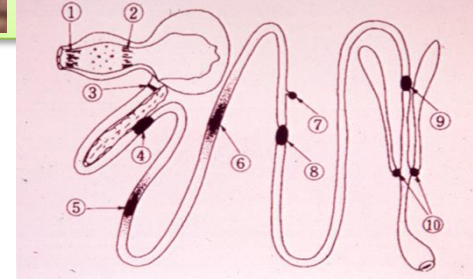
腸管集淋小結出血、潰瘍

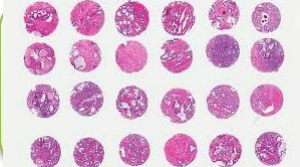


WHAT IS A PATHOLOGIST?



新城病

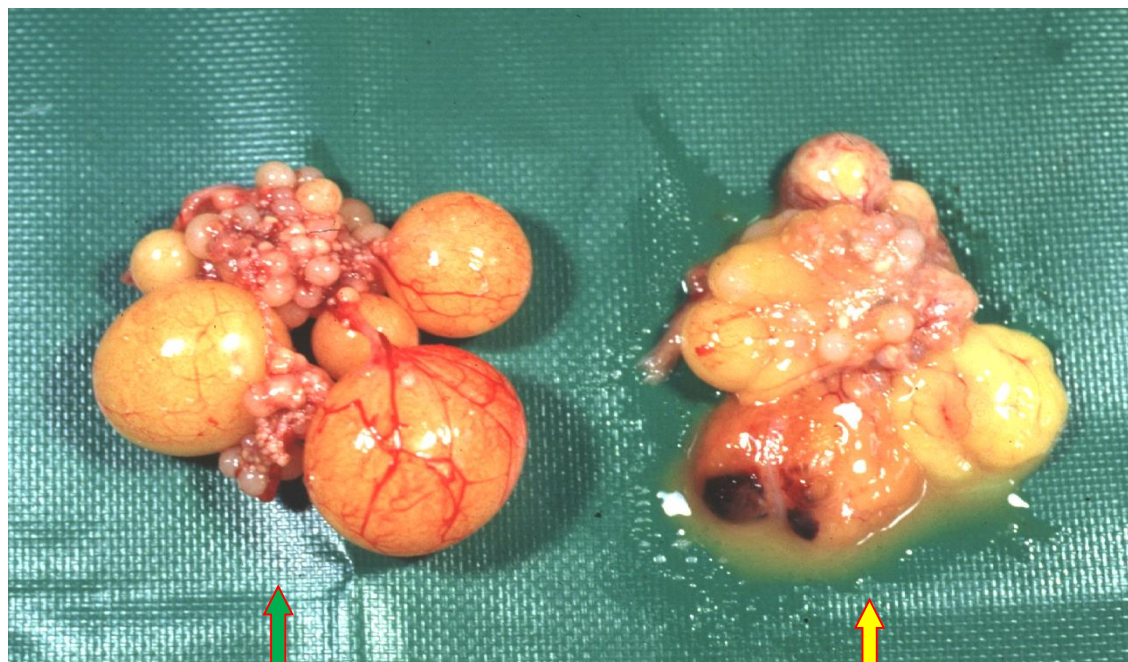




WHAT IS A PATHOLOGIST?

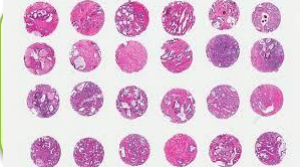


新城病 Newcastle disease



正常卵巢濾胞

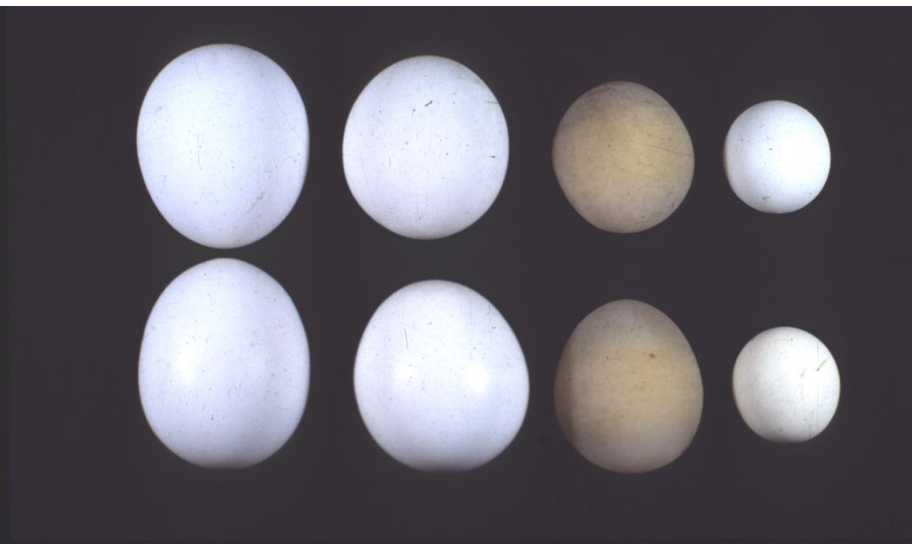
卵巢濾胞出血變形



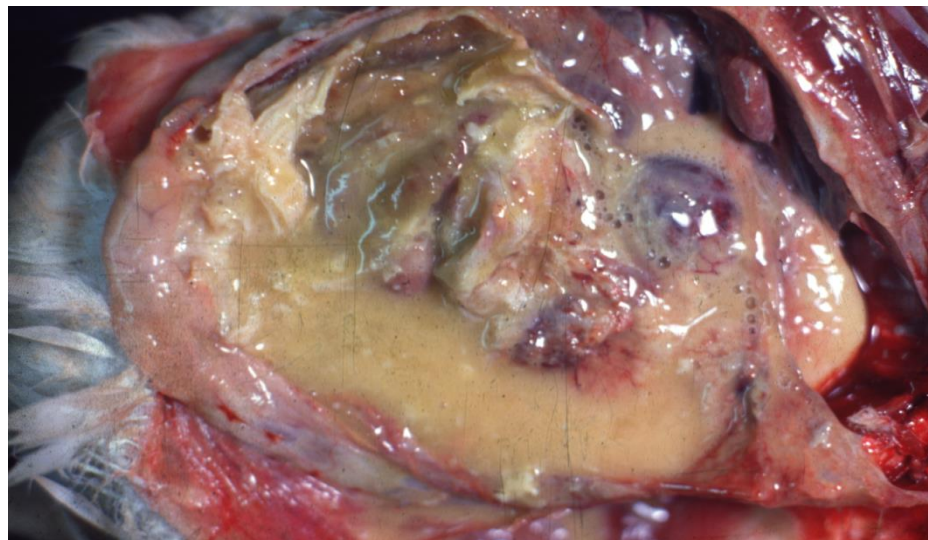
WHAT IS A PATHOLOGIST?



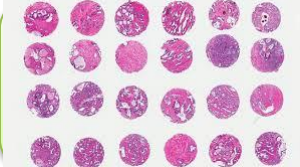
新城病 Newcastle disease



軟殼、畸型蛋



墜卵性腹膜炎



財團法人中央畜產會

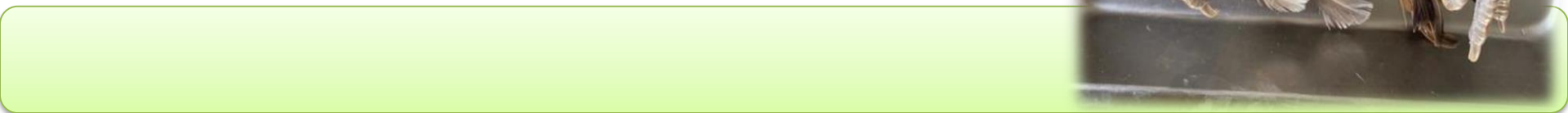
109年度推動家禽獸醫師(佐)教育訓練

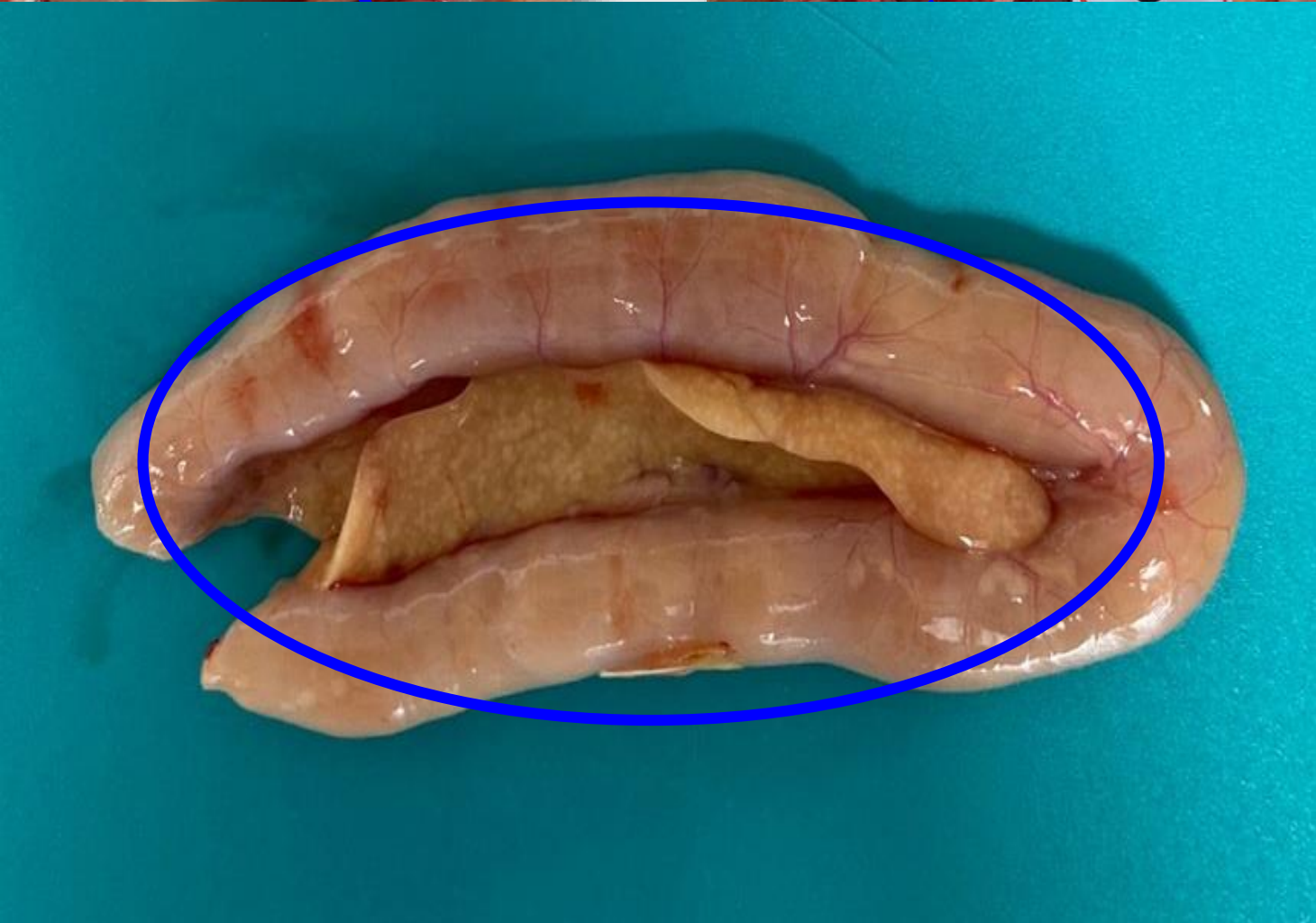
第三次病例報告研討會

土雞之家禽白血病 J 亞型感染症

報告人：莊金玉

指導老師：李淑慧博士



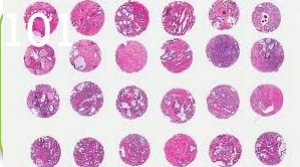




肝臟可見出血塊及白色腫瘤團塊



脾臟腫大



WHAT
IS A
PATHOLOGIST?



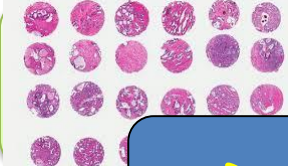
最終診斷

土雞之家禽白血病
J亞型感染症

冷緊迫



寒冰床效應



WHAT IS A PATHOLOGIST?



疫苗注射不當





WHAT IS A PATHOLOGIST?



飼料漲價

減量

微量元素

維他命

白肌病

免疫力、產蛋下降

Vit E/ Se缺乏

WHAT IS A PATHOLOGIST?



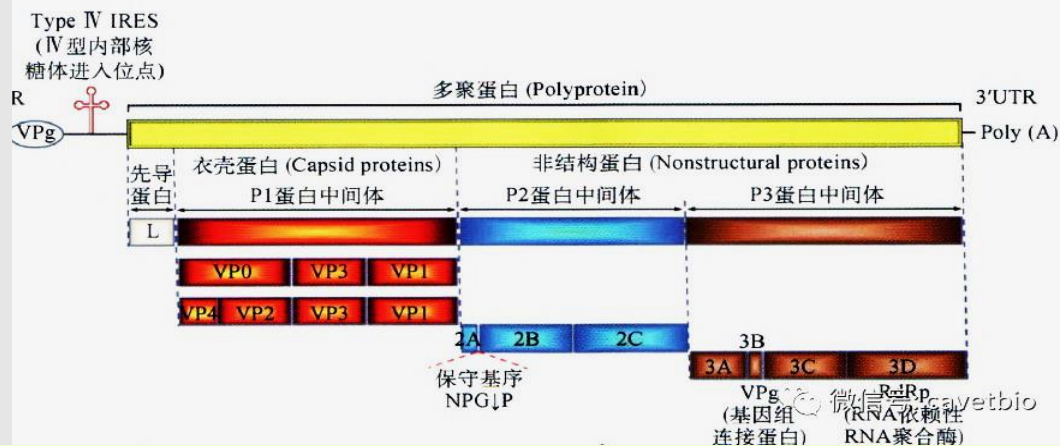
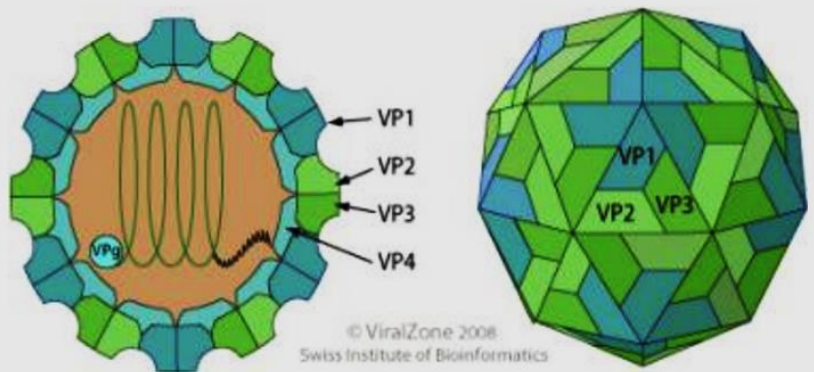
Veterinary pathology



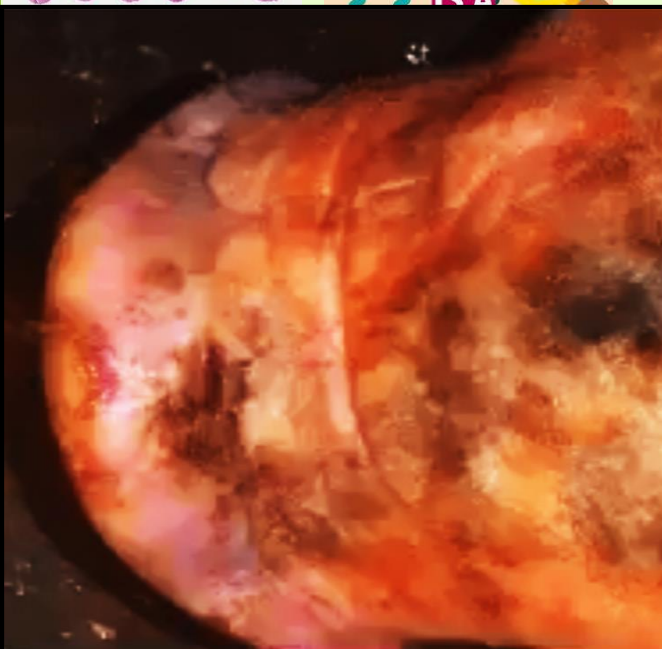
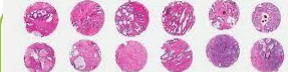


矽尼卡谷病(塞內卡病；Senecavirus)：病原

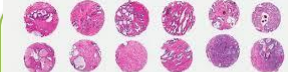
1. 早期：由於該病毒是在位於蓋瑟斯堡（Seneca Creek State Park）附近的Neotropix公司的實驗室中分離的，因此，被命名為Seneca Valley virus（SVV）
2. 病毒的分類學：一種小型無包膜病毒，屬於小核糖核酸病毒科 (Picornaviridae)，與心病毒屬（Cardiovirus）的親緣關係近。2015年，國際病毒分類委員會（ICTV）將SVV更名為A型塞內卡病毒 (Senecavirus A, SVA)，其所在的屬命名為“塞內卡病毒” = 矽尼卡谷病毒



源自：蔡信雄老師講義



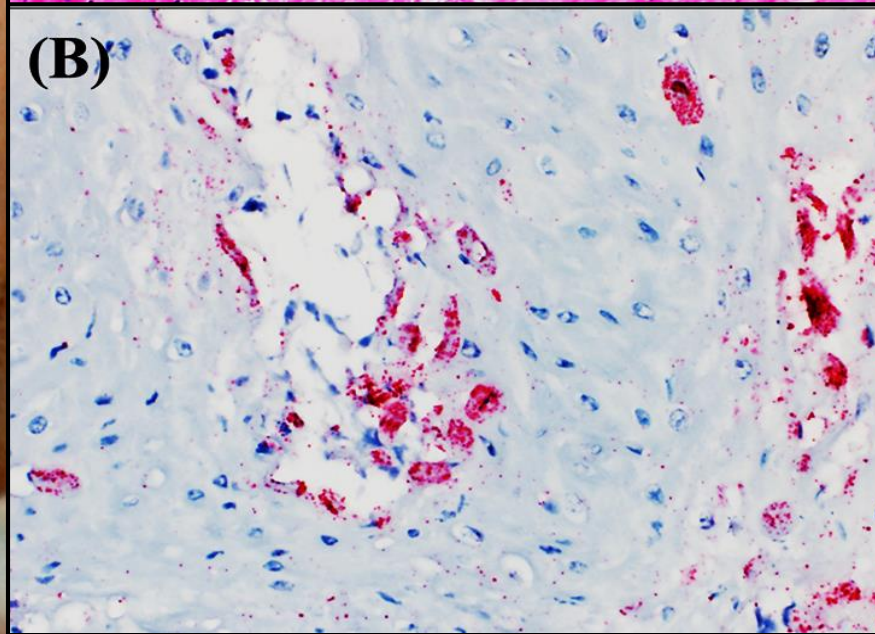
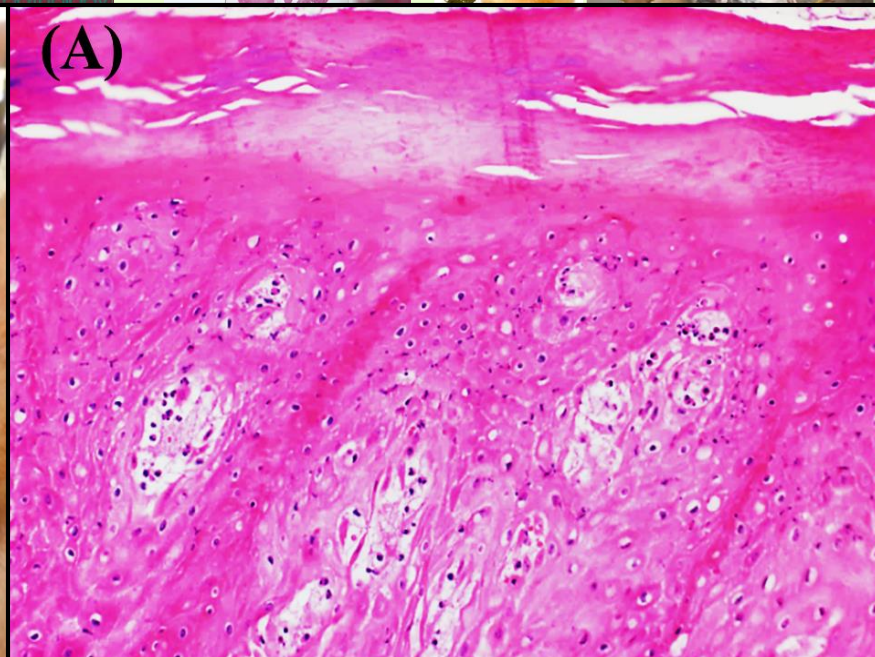
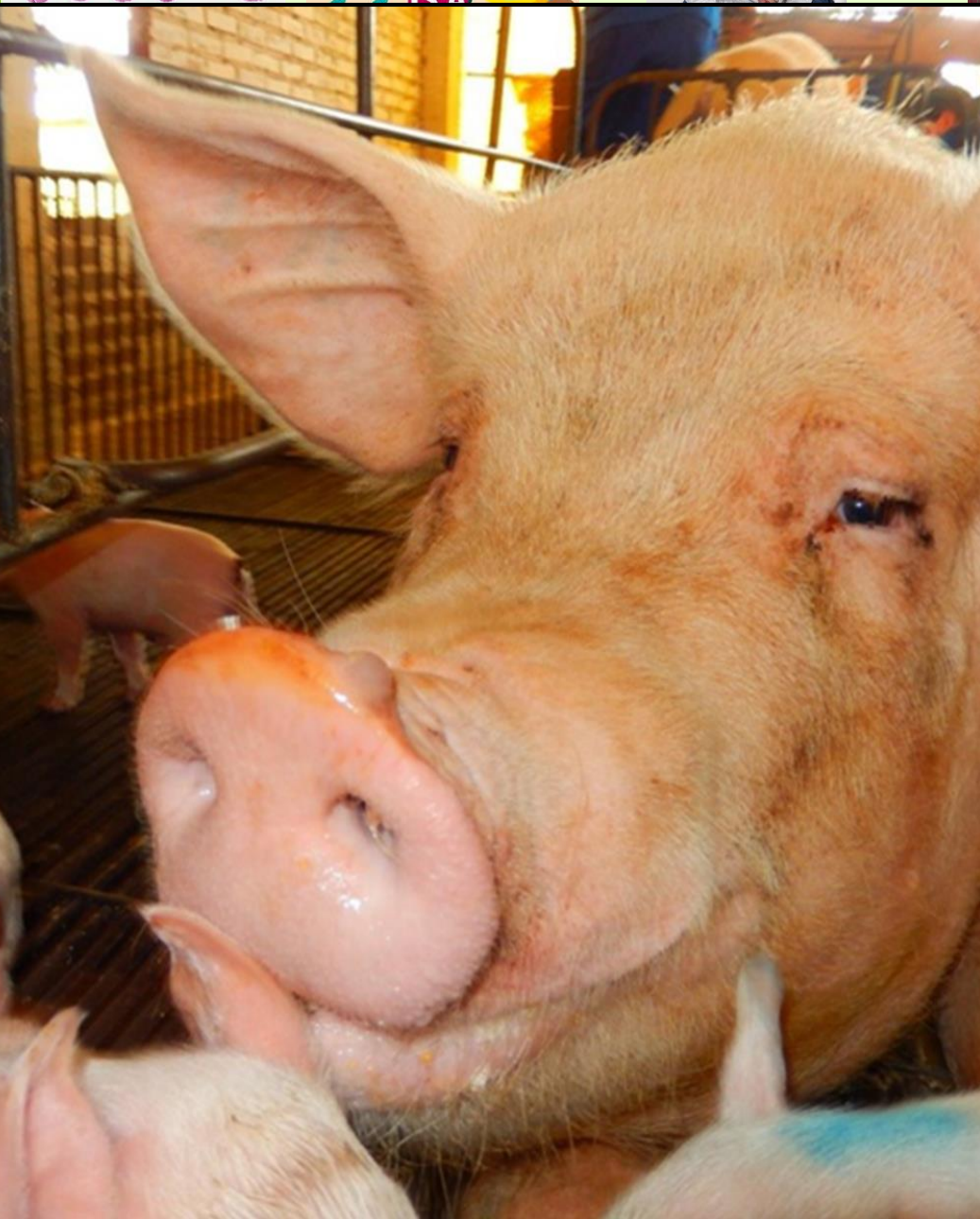
源自:蔡信雄老師講義



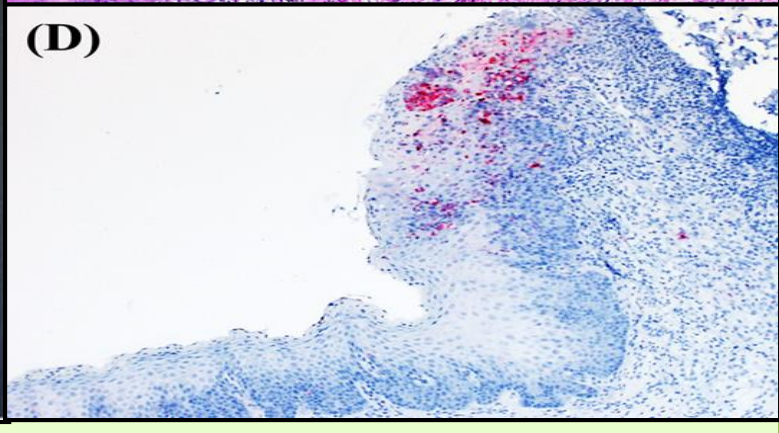
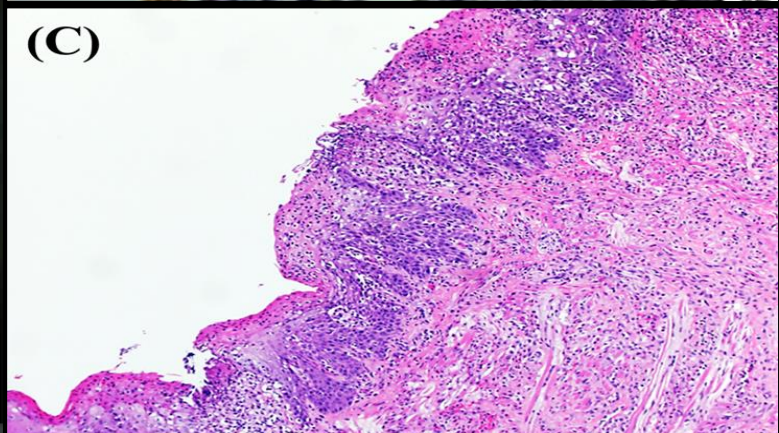
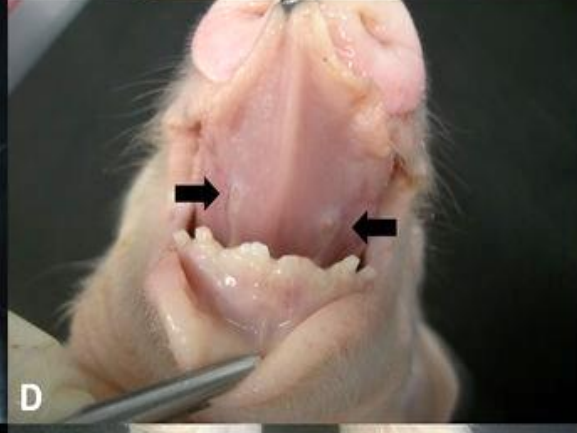
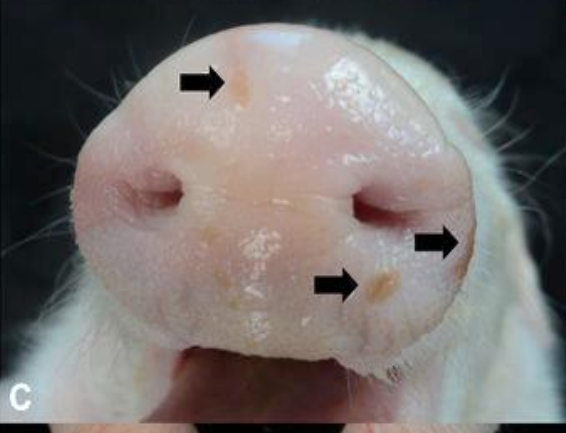
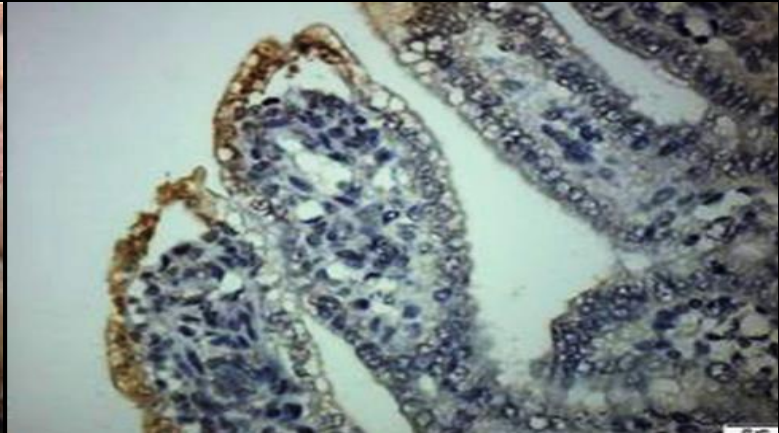
WHAT IS A

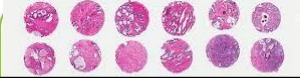


Veterinary

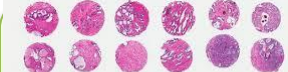


源自：蔡信雄老師講義

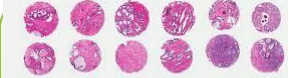




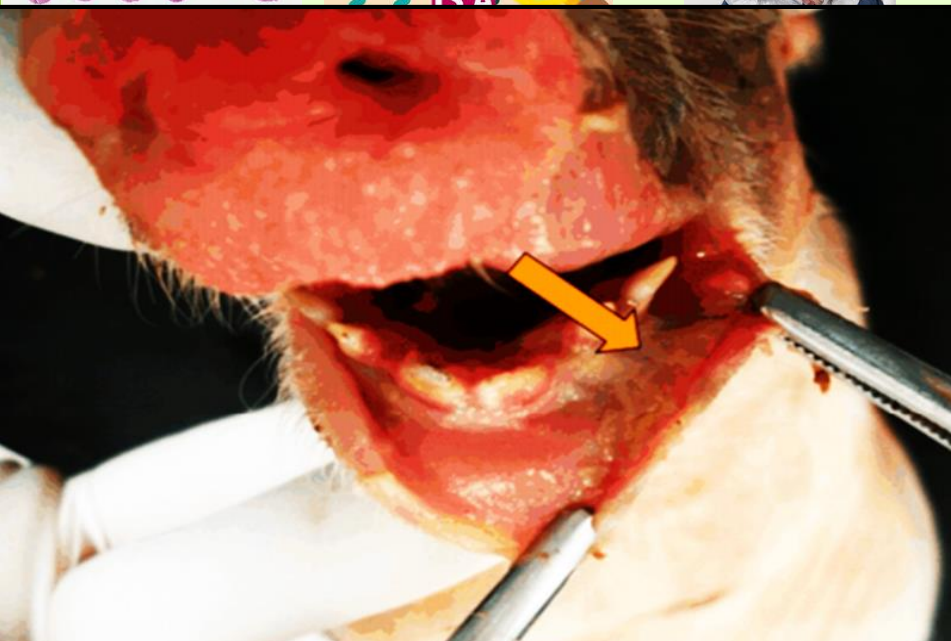
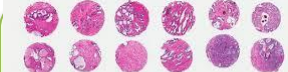
源自:蔡信雄老師講義



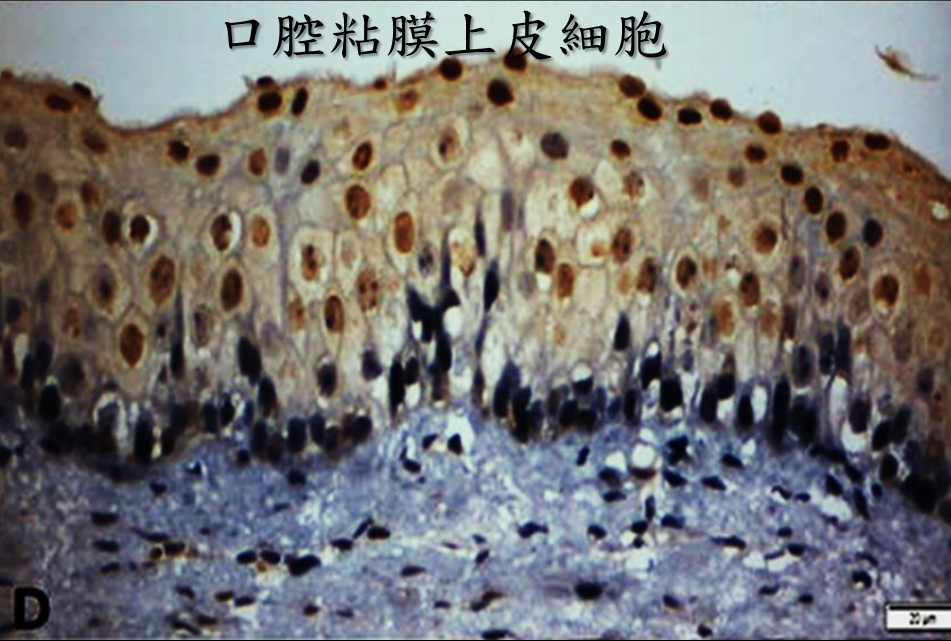
源自：蔡信雄老師講義



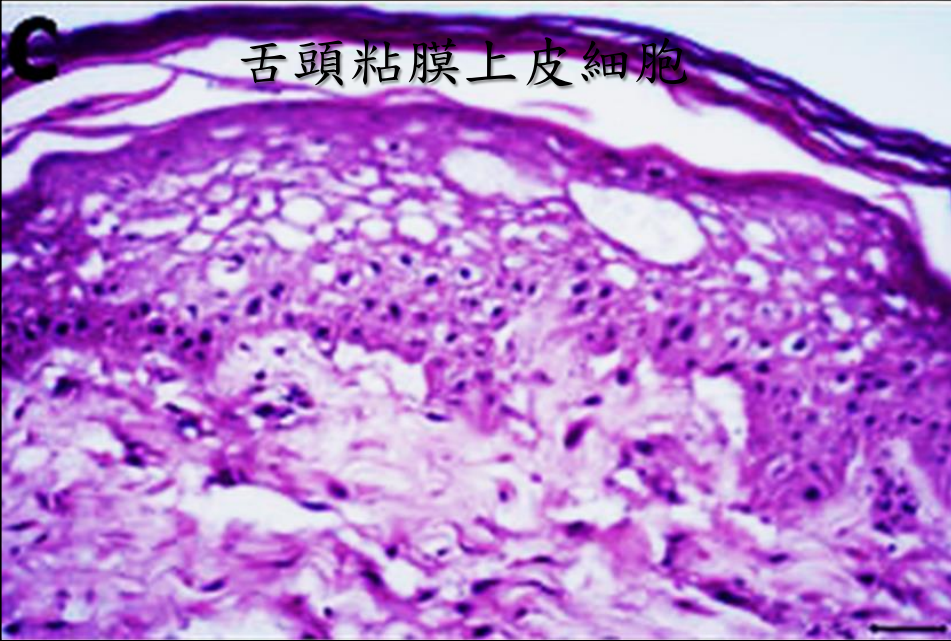
源自：蔡信雄老師講義

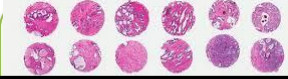


口腔粘膜上皮細胞



舌頭粘膜上皮細胞

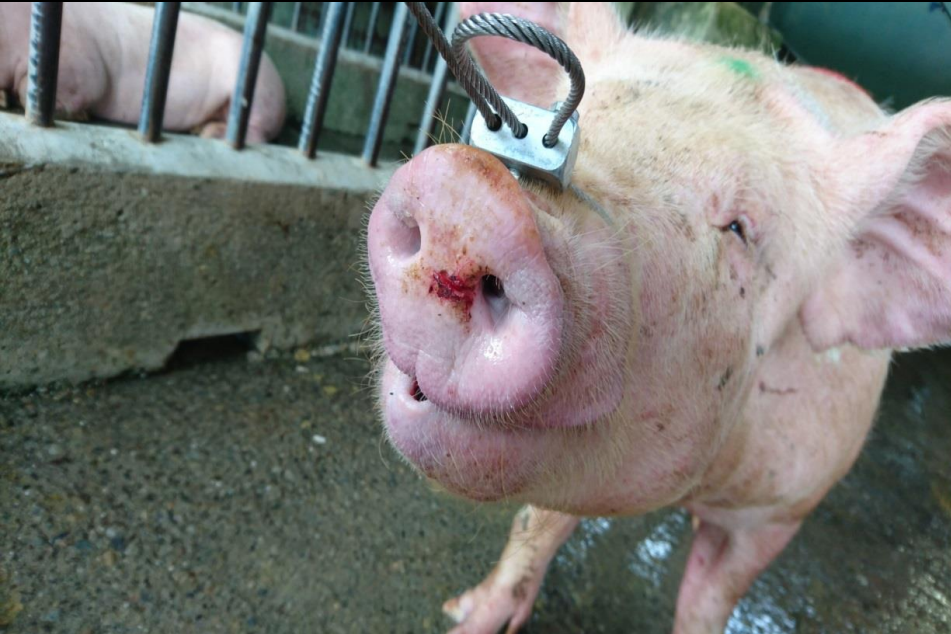




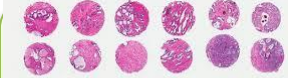
WHAT IS A



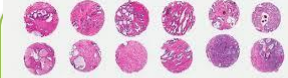
Veterinary pathology



源自：蔡信雄老師講義

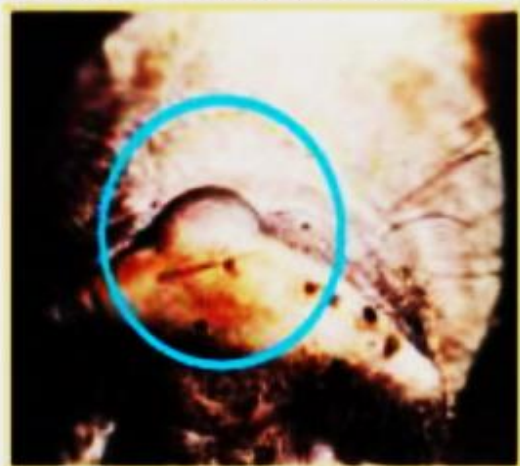


源自:蔡信雄老師講義



猪水泡病

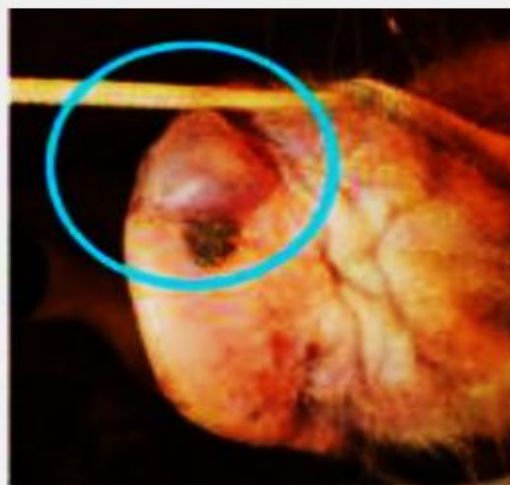
(Swine Vesicular Disease)



水泡性口炎

(Vesicular Stomatitis)

A型塞尼卡病毒
(Senecavirus A)



口蹄疫

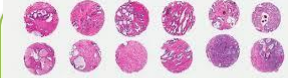
(Foot and Mouth Disease)



猪水疱性疹

(Vesicular Exanthema of swine)





猪水泡病

(Swine Vesicular Disease)

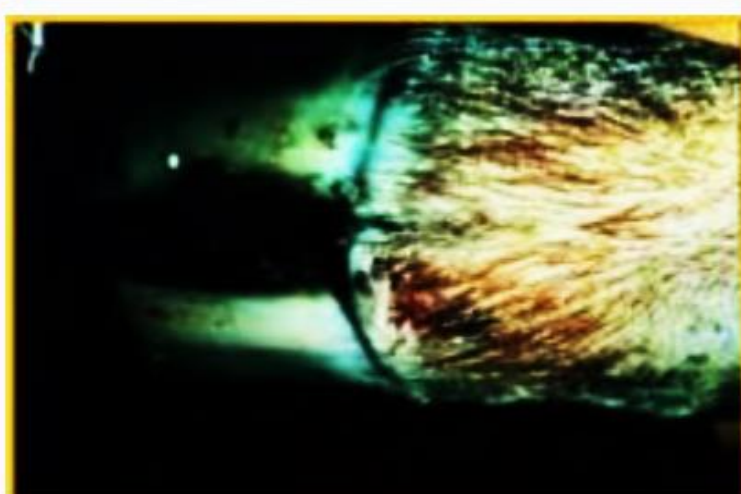


A型塞尼卡病毒
(Senecavirus A)

源自:蔡信雄老師講義

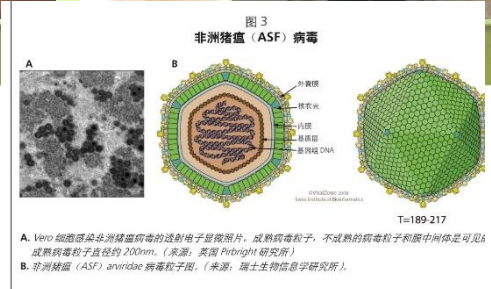
口蹄疫

(Foot and Mouth Disease)

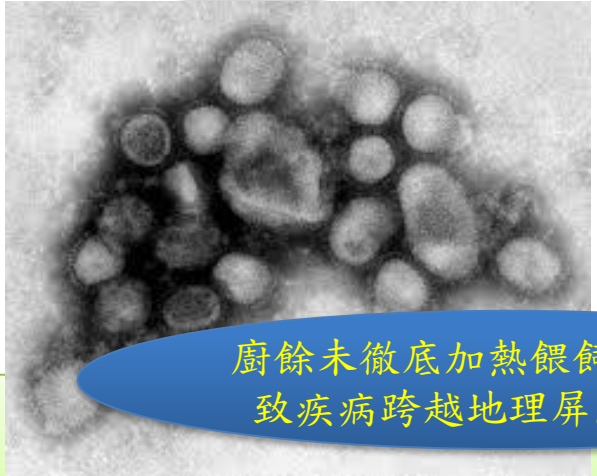
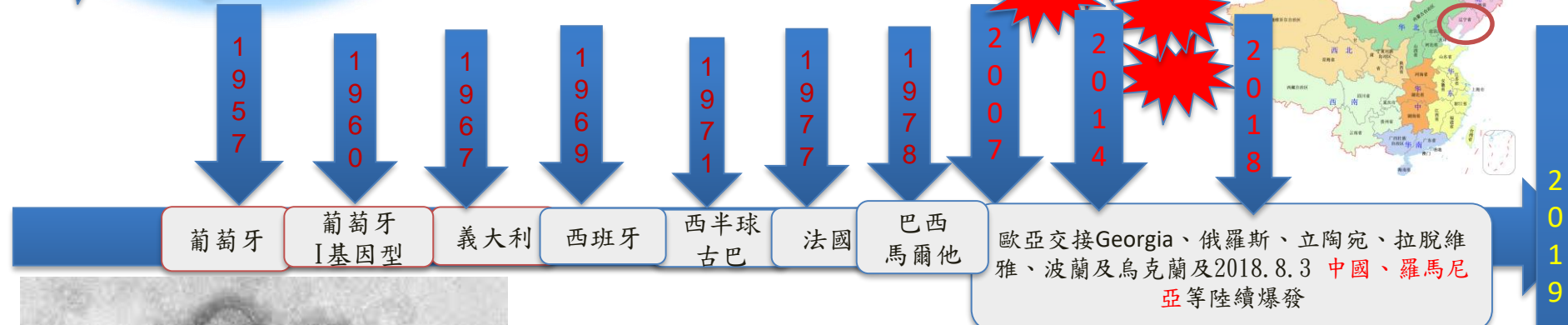


猪水疱性疹
(Vesicular Exanthema of Swine)

歷史上在非洲以外地區發生的非洲豬瘟感染在歐洲，ASF 首次於1957年從西非引入葡萄牙。在該疫情入侵後被撲滅，ASFV 基因I型在1960年重新出現在葡萄牙，然後蔓延到歐洲(意大利，1967年；西班牙，1969年；法國，1977年；馬耳他，1978年，比利時，1985年；和荷蘭，1986年)。同時疫情到達了加勒比(古巴，1971年和1980年；多米尼加共和國，1978年；海地，1979年)和巴西(1978年)。除了西班牙和葡萄牙(與該病的鬥爭持續了幾十年，直到20世紀90年代)以及意大利的撒丁島、地中海島嶼(自1978年ASF出現以來成為疫區，主要在自由放養豬隻和野豬之間傳播)，所有國家短期內都成功地控制了疫情。



非洲豬瘟



ASFV 在撒哈拉以南非洲和撒丁島大部分地區流行，自2007年 Georgia 第一例以來，一直在高加索，東歐和波羅的海國家蔓延

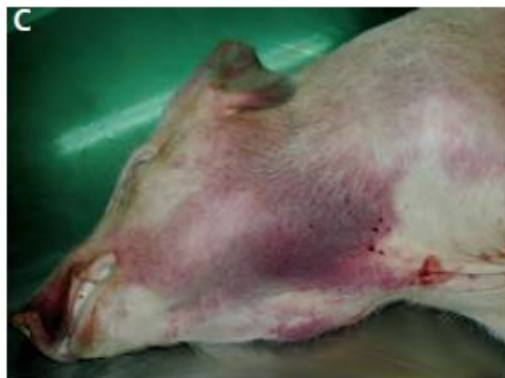
廚餘未徹底加熱餵飼豬隻，導致疾病跨越地理屏障而傳播

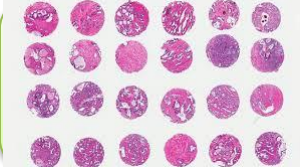
亞洲計有10個國家發生非洲豬瘟
中國大陸、蒙古、越南、柬埔寨、北韓、寮國、緬甸、菲律賓、韓國及東帝汶

進口冷凍或加工的豬肉。

急性非洲豬瘟出血 伴隨壞死病變

- A. 豬看起來明顯虛弱、發燒，可能團縮在一起取暖。
- B-E. 在頸部、胸部和四肢的皮膚上有血性腹瀉和明顯的充血（紅色）區域。
- F. 耳朵尖端呈青色（藍色）。
- G-I. 腹部、頸部和耳朵皮膚上的壞死病變。





WHAT IS A PATHOLOGIST?



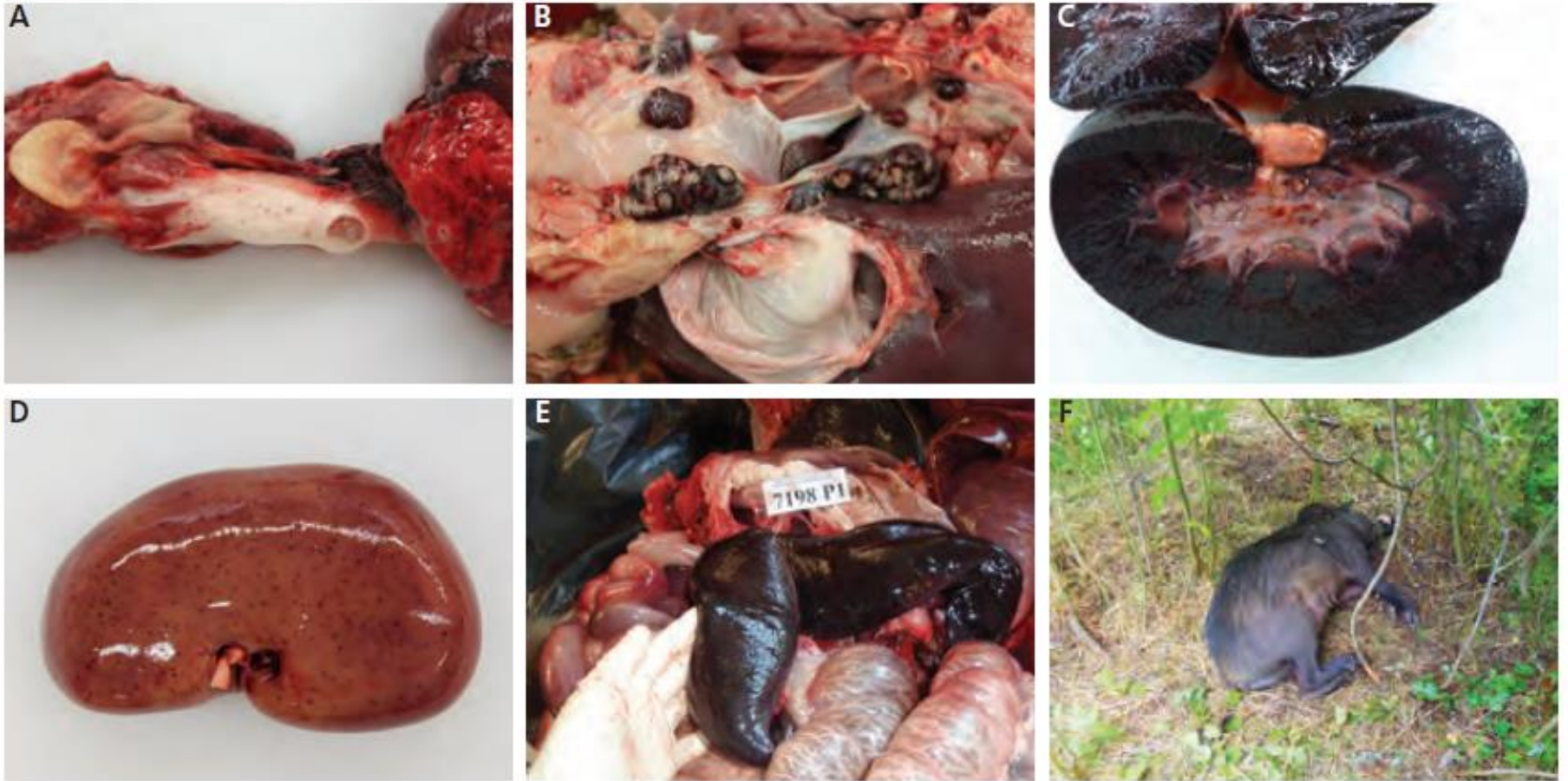
图 15
急性非洲猪瘟的进一步病变



- A. 肺水肿和肺组织实变明显。
- B. 心脏和体腔内有积液。
- C. 气管及口鼻可能出现带血泡沫。

图 16

感染急性非洲猪瘟的野猪的特征性剖检病变和临床表现

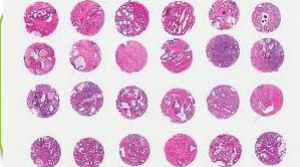


- A. 嚴重的肺部水腫導致的氣管泡沫
- B. 胃腸淋巴結出血
- C. 腎出血
- D. 腎臟皮質上的瘀點
- E. 脾腫大
- F. 死亡的野豬

图 17
慢性型非洲猪瘟的典型病变



A-F. 中度至重度关节肿胀，经常伴随皮肤红斑、突起和坏死。
G. 额外的剖检发现伴有淋巴结肿大。
H. 伴有干酪样坏死和矿化的肺脏炎症。



WHAT IS A PATHOLOGIST?



易感动物 在自然的丛林传播环节，软体的、**无眼的蜚虫 (也称为钝缘蜚)** 与 **非洲野生猪科动物都是 ASFV 的天然储存宿主**。可以通过叮咬传播病毒。猪科 (*Suidae*) 的所有物种都易感，但仅对家养猪及野生家猪，以及它们的近亲欧洲野猪致病。非洲野生猪科动物是 ASF 的无症状携带者，并作为非洲部分地区的病毒储主 (图 5)。包括**疣猪 (非洲疣猪 *Phacochoerus africanus* 和荒漠疣猪 *Phacochoerus aethiopicus*)**、**非洲灌丛野猪 (非洲野猪 *Potamochoerus porcus*) 和假面野猪 (*Potamochoerus larvatus*) 和巨型森林猪 (巨林猪 *Hylochoerus meinertzhageni*)**。

联合国粮食及农业组织 (FAO) 动物生产及卫生

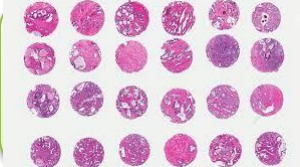


手册

由联合国粮食及农业组织 (FAO) 及中国动物疫病预防控制中心 共同出版 罗马，2018

非洲猪瘟：发现与诊断

兽医指导手册



WHAT IS A PATHOLOGIST?



三、诊断

▶ 病理诊断

脾脏

肿大

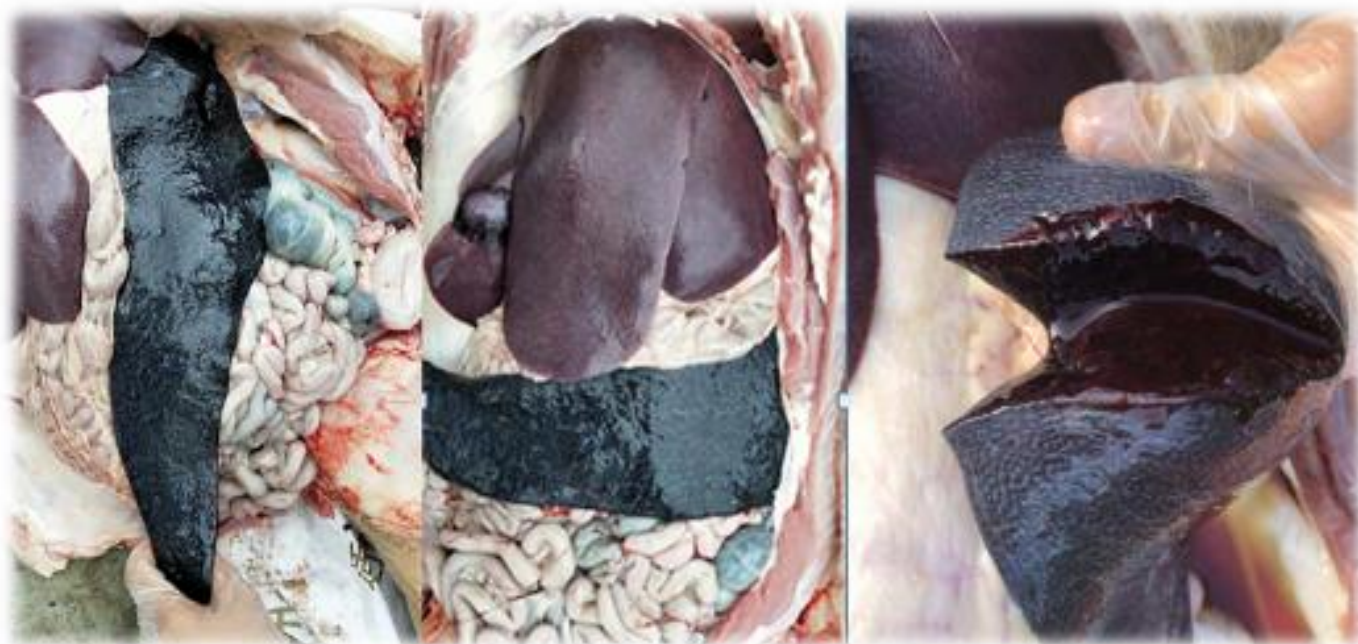
易碎

暗红色至黑色

AFS INFECTED



脾脏肿大3-6倍以上是非洲猪瘟的鉴别诊断典型特征



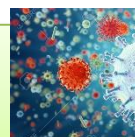
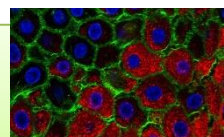
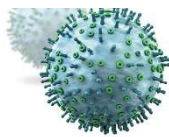
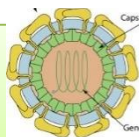
脾脏肿大可达正常脾脏的3-6倍以上，呈暗红色或黑色，质地硬

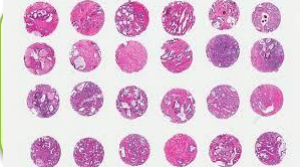
非洲猪瘟的九个认识

邵国青 研究员

江苏省农业科学院兽医研究所

2018年8月26日 南京

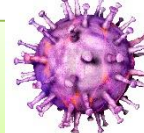
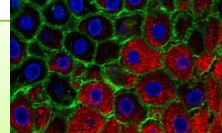
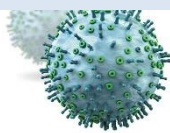
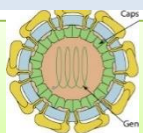




總結

- 善用信任經濟
- 知識變現
- 運用大數據及圖像診斷心法
- 今日的堅持及努力/明日旁人的望塵莫及
- 經濟動物獸醫師必須具備**商務思維**
- 莫忘初衷

- 終身學習/斜槓
- 勤練基本功(參加CSVP)
- 站在巨人的肩膀上/讓自己變成更好的人
- 善良比聰明重要
- 聽話照做
- **態度對了**一切都會順
- 成功找方法/失敗找藉口
- 做好做大做輕鬆





謝謝聆聽!感恩! 07:32 休息一下