

ASSESSMENT OF ORAL CASE MANAGEMENT

Case 3: Dune

PERSONS PRESENT AT EXAMINATION

Examiners:

ECVIM-CA representative

Candidate

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1.

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CASE no. 3: Dune :

SUMMARY OF POST-EXAMINATION EVALUATION BY EXAMINATION COMMITTEE:

FINAL DECISION:

‘MINIMAL PATHWAY’

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>A. Identification of Relevant Problems from Hx and PE.</p>	<p>A1 Relevant, Additional Questions on History: Is there any PU/PD? No Is there any vomiting or diarrhoea? No Were the mucous membranes WHITE and jaundiced? No – pink and jaundiced Is the cat treated regularly against external parasites? Was there any evidence of trauma lately (cat fights, wounds, HBC, etc.)?</p> <hr/> <p>A2 Problem List</p> <ul style="list-style-type: none"> ○ Anorexia ○ Depression ○ Weight loss ○ Pyrexia ○ Dehydration ○ Tachycardia ○ Tachypnoea ○ Increased lung (inspiratory) sounds ○ Jaundice, hyperbilirubinaemia, bilirubinuria ○ Muffled heart sounds 	

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>B Differential Diagnoses of main (relevant) problems.</p>	<p>B1</p> <ul style="list-style-type: none"> ○ Anorexia and weight loss: not specific but should prompt concern for HL in front of a jaundiced cat ○ Pyrexia: infection, inflammation e.g. immune-mediated disease, neoplasia. ○ Tachycardia & tachypnea: hypovolaemia (but pulse is strong), fever, pain etc. non specific. Tachypnoea could be linked with increase lung sounds. Pleural effusion usually leads to decreased lung sounds at least in some parts of the lung field. ○ Icterus: haemolysis or hepatic disease (eg lipidosis – especially given the anorexia, cholangitis (suppurative or lymphocytic), FIP, neoplasia or post hepatic biliary obstruction (pancreatitis, duodenal mass/FB), post hepatic disease (cholangiohepatitis, pancreatitis, cholangitis, bile peritonitis (especially with “abdominal distention”)) ○ Muffled heart sounds: fluid in pleura or pericardium; mass (not likely due to cardiac disease as pulse volume good), pneumothorax, cardiomyopathy (dilated), myocarditis, diaphragmatic (& pericardial) hernia. Must connect muffled heart sounds with good femoral pulse to rule out tamponade, DCM and myocarditis ○ 	
<p>C Rule Outs and prioritisation of the differential diagnoses.</p>	<p>C1</p> <ul style="list-style-type: none"> ○ Want to see if cat anaemic on bloods to rule out jaundice due to haemolysis ○ Want to check for liver disease on bloods and liver function tests as well as pancreas ○ Will then want to image thorax to know why chest sounds muffled <p>Note anorexic cat with jaundice so will want to be sure not hepatic lipidosis as will need intensive therapy quickly if it is. (good reason for FNA then, I guess)</p>	

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>D Interpretation of the Clinicopathological Results.</p>	<p>D1 Haematology: Leucocytosis with neutrophilia and left shift and toxicity which suggests active inflammation and probably rather infectious rather than immune-mediated or neoplasia associated. Toxic neutrophils are also arguing for severe ongoing inflammation (probably infection). Thrombocytosis (confirmed on the blood smear) most probably reactive (inflammatory) Most important thing is that PCV was normal so not jaundiced due to haemolysis. Also anaemia is not that regenerative, and MCV is lowish. RDW would have helped to assess anisocytosis. There is possibly a mild normocytic normochromic anaemia masked by dehydration, and most probably due to inflammation Mild hyperfibrinogenemia : inflammation</p> <p>D2 Biochemistry Biochem: electrolytes normal. Low albumin : urinary or GI losses, hepatic failure, third space in body cavity fluids, severe burns, negative marker of acute inflammation. May ask for urinalysis since the most frequent cause in urinary loss in cats. Need the A:G ratio. 1st DD must be negative APP in this case, as no significant hyperglobulinaemia is present. High globulins suggest inflammation, FIP; Globulins are not that high to suggest FIP, and other causes such as neoplasia, bacterial and other infections should be considered. Mostly I think the albumin and globulin concentration do not fit GI loss or renal loss, although do not rule them out High bilirubin consistent with biliary stasis but ALP and GGT not elevated or hepatic failure. Bile peritonitis should be also considered, as it would lead to inflammation, neutrophilic leucocytosis, left shift and toxicity. It might also be septic Normal ALP <u>and</u> ALT <u>and</u> GGT do not argue for hepatic disease but CANNOT rule out HL or CH (high globulin may argue for L cholangitis) only with these normal results Presence of liver disease does not mean liver failure.</p>	

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>E First Preliminary Conclusion on the basis of Hx, PE, and clinincopathological results.</p>	<ul style="list-style-type: none"> ○ Jaundice is probably hepatic in origin – plenty evidence of biliary stasis but still don't know if hepatic or post hepatic (true) ○ Cause of pyrexia unknown but infectious causes are the most relevant fever is borderline. Any inflammation, excitement and pain may lead to mild hyperthermia/fever ○ Hypoalbuminemia should prompt urinalysis (after thoracic radiograph!) This is a very mild hypoalbuminaemia. A U/A should be anyways a part of the MDB, before a chest X-ray. ○ Also still don't know about muffled heart sounds and increase breath rate – Should ask for thoracic radiograph at that time ○ Probably keep differentials with HL (but ODD to have normal ALP with this – if not unheard of), Cholangitis whatever type but normal hepatic enzymes !!!!, post-hepatic biliary obstruction, severe infection (where?), FIP (Low alb, high glob, NOT ENOUGH evidence of inflammation, pyrexia) 	
<p>F Primary Plan (diagnostic and, if relevant, therapeutic).</p>	<p>F1</p> <ul style="list-style-type: none"> ○ The first and easiest test would be thoracic radiograph (looking for the cause of muffled heart sounds, increased resp rate), may be abdominal also because of jaundice. Not that easy though as have to consider sedation in a cat with potential HL /chest issues so need to discuss that... ○ FeIV/FIV. May also ask for coronavirus titre – there is none! A retrovirus profile should be routine in sick outdoor cats, but on the other hand there is no anaemia, so some may choose to skip that. ○ Urinalysis : after radiograph No – this is part of the MDB and should be given to the candidates with the bloodwork ○ Probably abdominal ultrasound for the liver and especially post hepatic dz although unlikely cause of icterus in front of normal ALP AND GGT. Thoracic U/S should also be considered. And check pancreas for EH obstruction 	

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>G Interpretation/Evaluation of additional, primary diagnostic modalities.</p>	<p>G1</p> <ul style="list-style-type: none"> ○ Thoracic radiograph pleural fluid which can be pure transudate (hypoalbuminemic although not so severe), modified transudate (tumour, cardiac disease – should probably ask for echocardiography, good idea but not done!) or exudate (septic and should reclaim for FIP – no titer done). The gross appearance of the pleural fluid should be described ○ Abdominal rx: NAD except evidence of a lot of inguinal fat (recent wt loss? Increase suspicion for HL??) ○ Abdominal ultrasound is not conclusive at that time, but rule out post hepatic biliary obstruction/bile peritonitis and pancreatitis and rule out abdominal mass. ○ Urinalysis : hypoalbuminemia is not due to urinary losses, but should justify urinary cytology Dipstick analysis for leucocytes should not be performed in dogs and cats at all, as it does not work and is most often falsely positive 	

SECTION	ANSWERS	COMMENTS by EXAMINER
<p>H Second, Preliminary Conclusion of additional, primary diagnostic modalities.</p>	<ul style="list-style-type: none"> ○ Look for the type of fluid. Probably ask for coag first because of suspected hepatic dz and possible associated coagulation disorders (Can be discussed for only thoracic fluid aspiration). The fluid is certainly not haemorrhage as the cat is not anaemic. It is definitely not chyle. As the cat is not severely respiratory compromised they should ask for fluid aspiration asap which is the only way to go deeper in he case. Some may want to mildly sedate the cat before as is tachypnoeic and excited. May choose to do a therapeutic thoracocentesis, and may need general anaesthesia for it. An estimate of the amount of fluid in the chest should be provided by U/S ○ Probably want to document the liver by fine needle aspiration or tru cut biopsy (not done) BUT should document thoracic fluid first and should definitely not anesthetize the cat for liver biopsy with such an amount of pleural fluid. Should be concerned by the fact that thoracic fluid cannot cause icterus. Two types of hypothesis: one single cause : FIP or sepsis with secondary cholestasis and icterus, two separate causes : thoracic fluid whatever it could be and hepatic dz (HL or Cholangitis, FIP, Tumour) but once they have cleared/drained the fluid. GA for liver biopsy (trucut or surgical) is reasonable – may put in chest drains and biopsy the liver at the same time – perfectly reasonable thing to do 	
<p>I Secondary Plan (diagnostic and, if relevant, therapeutic).</p>	<p>II Fluid aspiration and then decide for the liver</p>	

SECTION	ANSWERS	COMMENTS by EXAMINER
J Interpretation/Evaluation of additional, secondary diagnostic modalities.	<ul style="list-style-type: none"> ○ Pyothorax. Gram stain??? Endoscopy should be considered to rule out oesophageal tears. A bit of a long shot...we don't routinely do this in feline pyothorax – do you? You would expect in those cases more of a septic mediastinitis spreading in to the thorax – and you would recognise this on ultrasound ○ How can they explain icterus now? ○ Aspirate the liver and bile (has been done after chest tube placement): cytology can claim for either hepatic inflammation or cholestasis of sepsis (comment that cholangitis is unlikely with normal hepatic enzymes but not definitely excluded). Bile and hepatic culture are sterile. ○ Need some comments on the bug as well as its source (bite wounds, penetrating trauma, oesophageal foreign body?) 	
K Final Conclusion.	PYOTHORAX WITH SECONDARY CHOLESTASIS INDUCED BY SEPSIS BUT NO DEFINITIVE DIAGNOSIS AS CHOLANGITIS CANNOT BE RULED OUT (BIOPSY SHOULD HAVE BEEN DONE). HL IS UNLIKELY AS LIVER ASPIRATION DID NOT SHOW ANY LIPID VACUOLE IN THE HEPATOCYTES.	
L Therapeutic Plan.	Chest tube with drainage. Antibiotic. Fluids.feed to stop HL developing...	

COMMENTS ON Minimal Pathway

Ad A.

The candidate should show the capability to extract the relevant problems from the history (Hx) and physical examination (PE). For this, it is expected from the candidate that (s)he will ask for additional relevant information. The effectiveness in which the candidate asks for clarification is an important aspect.

The candidate should, if necessary, indicate which problems appear most important and suitable for further work-up.

Ad B.

The candidate should be able to come up with the main differential diagnoses of the relevant problems. It is not expected that the list is absolutely complete but the list should give the examiner the impression the candidate has knowledge of all relevant differentials.

Ad C.

The candidate should come up with rule outs and prioritize differential diagnoses that are left. This should be performed on the basis of the Hx and PE ONLY. The clinicopathological results should not be used in this first evaluation and, if possible, diagnostic plan making.

Ad D.

The candidate should identify all *relevant* abnormal parameters and give a short comment on them (relevancy, differential diagnoses, rule outs and prioritization).

Ad E.

Here, the candidate has to demonstrate that he is not lost and is able to make a logical, concise, and relevant summary of his thoughts until now using Hx, PE, and clinicopathological results. From here on it goes more or less automatically to the diagnostic plan. Therefore, section E and F could be discussed simultaneously by the candidate.

Ad F.*¹

This should not cost the candidate too much problems when E. is performed correctly. An important aspect here is prioritizing and reasons of choice of the different diagnostic modalities asked for by the candidate.

Ad G.*¹

The candidate is not expected to be a radiologist, ultrasonographer, clinical pathologist, etc. When he demonstrates to have knowledge on how to *interpret* X-rays, cytology and other diagnostic tests, this is the main point. Furthermore, the candidate should be able to identify the main abnormalities.

Furthermore, his ability to *evaluate* the results of every diagnostic modality is examined. Here, the general attitude of approach is important: relevance of abnormality as related to the differential list, rules out and prioritization.

Ad H.^{*1}

Here, the candidate has to show again that he is not lost and is able to make a logical, concise, and relevant summary of his thoughts until now using Hx, PE, clinicopathological results, and the results of the additional diagnostic tests. From here on it goes more or less automatically to the secondary, diagnostic plan. Therefore, section H and I could be discussed simultaneously by the candidate.

Ad I and J.^{*1}

This is a repetition of steps F and G.

Ad K.

The candidate is able to make a logical, concise, and relevant summary of his thoughts. At this point the commitment(s) of the candidate and the arguments the candidate has for his commitment(s) should get special attention. The primary interest is not that the candidate made the correct final diagnosis.

Ad L.

If relevant for the case, the candidate should make a therapeutic plan.

*1. This process can often not be divided as clearly as indicated and suggested by these sections but often are discussed simultaneously by the candidate. But I still think that dividing it in different sections makes it more clear what aspects of the work-up should be addressed by the candidate.