

OCM CASE: CASE B

EXAMINERS: _____ CANDIDATE NO. _____

INTRODUCTORY COMMENTS: THIS IS YOUR SECOND CASE				
Welcome, my name is Dr and this is Dr Before we start, can I confirm your candidate number?				
If you do not understand my English or would like your translator to help you answer a question, please tell me and I will approve your translator to help us both				
You have already had a chance to review some information on three cases: we are now going to discuss case B	A	B	C	D
I am going to ask you questions about the cases, and Dr _____ will keep notes and record the time				

Slide Number	Testing Point	Examiners Question	“Point-gaining” Answer Elements	Max. no. of points	SCORE
Slides 1, 2 and 3	Identification of clinical problems	Please summarise the important presenting clinical signs (not the clinical examination findings)	Depression	1	
			Abdominal pain	1	
			Acute onset	1	
	Interpretation of individual clinical examination findings	This horse had the following clinical sign “*****” - could you tell me why a horse may have “*****” Not necessarily in relation to this case (Examiner will ask for interpretation of <u>specific</u> findings)	Elevated rectal temperature (Examiner prompt)		
			<i>Likely true pyrexia c.f. hyperthermia (no anhidrosis, no preceding exercise, no excessive sweating associated with attempted thermoregulation)</i>	1	
			Possible drug association (sulphonamides)	1	
			Infection (incl. endotoxaemia)	1	
			<i>Requirement to identify “localising” signs</i>	1	
			Inflammation	1	
			Neoplastic	1	
			Immunologic reaction	1	
			Tachycardia (Examiner prompt)		
			Pain-associated	1	
			Hypovolaemia	1	
			Primary cardiac disease	1	
Physiological (excitement) unlikely here due to depression	1				
Others (e.g. pheochromocytoma - unlikely here due to depression)	1				

			Tachypnoea (Examiner prompt)		
			Fever	1	
			Primary respiratory disease	1	
			Pain	1	
			Acidosis	1	
			Hypovolaemic shock	1	
			Anaemia	1	
			Physical interference with breathing (e.g. gastric distension)	1	
			High ambient temperature	1	
			Anhidrosis	1	
			Prolonged skin tent, dry mucous membranes, sunken eyes, increased CRT (Examiner prompt)		
			Dehydration	1	
			Poor peripheral perfusion	1	
			Colitis	4	
			Acute onset	1	
			Fever	1	
			Associated fluid losses	1	
			Abdominal pain (distension and inflammation)	1	
			Endotoxaemic signs (tachycardia, mucous membrane hyperaemia, fever, ileus)	1	
			Prior antibiotic treatment	1	
			Stress of surgical procedure	1	
			Rectal findings	1	
			Peritonitis	4	
			Transvaginal surgical procedure	1	
			Abdominal pain	1	
			Endotoxaemic signs (tachycardia, mucous membrane hyperaemia, fever, ileus)	1	
			Pyrexia	1	
			Impending diarrhoea	1	
	Interpretation of combined clinical examination findings (impending diarrhoea, dehydration, endotoxaemia, fever) to formulate and justify a differential diagnosis list	<p>Please list the differential diagnoses that you would consider in this case, giving justification for your choices? (repeat as above once, no mark deduction)</p> <p>The examiner may ask about findings that are inconsistent with certain diagnoses *</p> <p>The examiner may provide answers not given to facilitate progression to the next question</p>			

			Strangulating intestinal obstruction *	3	
			Abdominal pain	1	
			Acute onset	1	
			Endotoxaemic signs (tachycardia, mucous membrane hyperaemia, fever, ileus)	1	
			Absence of intestinal sounds	1	
			<i>Rectal findings – not consistent</i>	1	
			<i>Pyrexia - not consistent</i>	1	
			<i>Absence of reflux – possibly not consistent, but depends on position of obstruction and duration of colic</i>	1	
			Anterior enteritis *	2	
			Acute onset	1	
			Abdominal pain	1	
			Fluid loss	1	
			Endotoxaemic signs (tachycardia, mucous membrane hyperaemia, fever, ileus)	1	
			Pyrexia / fever	1	
			<i>Absence of reflux – not consistent</i>	1	
			<i>Rectal findings – not consistent (not exclusive)</i>	1	
			Others (e.g. abdominal abscess / pleuropneumonia / cholangiohepatitis etc.)	1	
			Peritoneal fluid analysis	4	
			Abdominal ultrasonography	4	
			Bloods	4	
			Other (Faecal culture/PCR/ <i>C.difficile</i> toxin etc.)	2	
	Differentiation between potential diagnoses	What further tests might you undertake to help you differentiate between the major differential diagnoses			
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Slide 4	Identification and interpretation of peritoneal fluid sample	Please comment on the peritoneal fluid analyses results?	Unremarkable	2	
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Slide 5	Identification and interpretation of laboratory problems	Please summarise the relevant laboratory results and interpret each one individually IN RELATION TO THIS CASE	Leucopaenia and neutropaenia	1		
			Neutropaenia – approaching a degenerative left shift; bands > 10% total WBCs in the face of a neutropaenia	2		
			In this case - likely result of combination of large surface area inflammation and endotoxaemia	2		
			Elevated haematocrit	1		
			Relatively poor indicator in general – in this case reflects degree of dehydration	2		
			<i>Examiner may need to prompt</i> →	Normal total protein	2	
			<i>Examiner may need to prompt</i> →	In the face of clinical dehydration – possibly indicative of protein loss in addition to fluid loss	2	
				Normal fibrinogen	2	
				Despite apparent extensive inflammation – reflects a slower elevation in this acute phase protein c.f. neutrophil response	2	
			<i>Examiner may need to prompt</i> →	Normal liver enzymes and bile acids	1	
				Unlikely primary liver involvement in abdominal pain	1	
				Azotaemia	1	
				Elevation in urea (greater magnitude than creatinine) – likely pre-renal (urea absorption dependent on GFR c.f. creatinine)	2	
				Cannot rule out renal (due to reduced renal blood flow following fluid losses) causes at this time (unlikely due to magnitude of azotaemia) – request urinalysis	2	
	Cannot rule out post-renal causes at this time - request urinalysis	1				

			Hyponatraemia	1	
		IN THIS CASE>	Primary sodium loss in impending diarrhoea (3 rd space)	2	
		Any other causes of low sodium??>	Other 3 rd space accumulation (e.g. pleuropneumonia / peritonitis)	2	
			Sodium dilution following compensatory (renal) water retention		
			Insufficient sweating to cause low Na	1	
			No gastric reflux	1	
			No apparent blood loss	1	
			No renal problem - creatinine	1	
			No hyperglycaemia / hyperproteinaemia / hyperlipidaemia resulting in false hyponatraemia	1	
			Hypokalaemia	1	
		IN THIS CASE>	Likely primary losses in impending diarrhoea.	2	
		Other causes of low potassium?>	No history of prolonged anorexia	2	
			Insufficient sweating	1	
			Possibly related to a co-existing metabolic alkalosis – request blood gas analyses	2	
			Hypochloraemia	1	
		IN THIS CASE>	Likely primary losses in impending diarrhoea especially as proportional decrease in sodium.	2	
		Other causes of low chloride>	Insufficient sweating	1	
			No gastric reflux	1	
			No hyperglycaemia / hyperproteinaemia / hyperlipidaemia resulting in false hypochloraemia.	1	
			Possibly related (partly) to a co-existing metabolic alkalosis – request blood gas analyses	2	
			Unlikely compensatory for a respiratory acidosis.	1	
		Which additional information would you request in order to both (i) assist you in your interpretation of the laboratory data and (ii) assess the status of the case?	Request blood gas analyses	4	

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Slide 6	Interpretation of blood gas data	Here are the results of an arterial blood gas analyses. What can you conclude from these?	Low blood pH associated with a marked base deficit and low pCO2	2	
			Metabolic acidosis	2	

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Slide 7	Understanding of anion gap calculation	Here are the additional results of the anion gap calculation. What information is required to calculate the anion gap?	$(Na + K) - (Cl + HCO_3)$ = $(128 + 2.78) - (89 + 13.7) = 28$ (normal 12-16)	4	
	Interpretation of acid-base disturbances	Are these results suggestive of a mixed acid-base disturbance? Give reasons for your conclusions.	No	3	
			pH not normal in face of acid-base disturbance	3	
			pCO2 and HCO3 not deviated in opposite directions	3	
	Calculation of HCO ₃ requirements	Please indicate how you would calculate the required mmol of HCO ₃ in this case (horse weighs 500kg)	mmol base deficit x body weight (kg) x 0.3 [or 0.5] (probable bicarbonate space) = 3000mEq	3	

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Slide 8	Interpretation of urinalysis	Please interpret this data	High urine specific gravity	2	
			In the face of marked dehydration, suggests that azotaemia was pre-renal (kidneys maintained concentrating ability)	2	
			Otherwise unremarkable	1	

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Slide 9	Formulation of a treatment plan	What general therapeutic aims would you consider in this case at this stage?	Fluid replacement (i.v. fluid therapy)	4	
			Electrolyte replacement (i.v. fluid therapy)	4	
			Correction of acid-base deficits (i.v. fluid therapy)	3	
			Analgesia	2	
			Anti-endotoxic meds – e.g. Hyperimmune plasma	2	
			Heparin	1	
			Plasma	1	
			Antibiotics may be contraindicated depending on faecal culture results	3	
Others (e.g. frequent nasogastric intubation / frog support etc.)	1				

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Slide 10	Recognition of further clinical complication	What significant finding was detected on day 6?	Polydipsia and apparent polyuria	1	
	Formulation of a differential diagnosis list	List the possible causes of polyuria/polydipsia in this horse	Renal medullary washout - disproportionate solute loss compared with water loss as a result of hypotonic fluid replacement	4	
			Psychogenic polydipsia – change in management / surroundings	2	
			Renal failure - poor renal blood flow secondary to hypovolaemia associated with inadequate intravenous fluid therapy	3	
			Nephrogenic DI – associated with renal disease	2	
			ADH antagonism - anti-ADH effect of endotoxin	2	
			Central diabetes insipidus (unlikely in this case)	1	
	Formulation of a further investigative plan	How might you further investigate and potentially treat this case?	Measure creatinine	2	
			Measure electrolytes	2	
			Urinalysis	2	
		If the data was supportive of renal medullary washout – how would you treat this case?	Partial water deprivation (50ml/kg/day water provision +/- added electrolytes) for several days – in this case?? Continued diarrhoea	2	
			Possibly i.v. hypertonic saline	2	
Thank you					
			Point total		
Conversion Factor = candidate point no / 212 (ie total point number) * 100 = grade out of 100					

Summary of points awarded

Identifying problems clinical & lab problems as listed	(%)
Ability to regurgitate information available on slides	(%)
Clinical data interpretation	(%)
Lab data interpretation	(%)
Diagnostic imaging interpretation	(%)
Histology/Pathology interpretation	(%)
Interpretation of diagnostic information	(%)
Differential Diagnosis	(%)
Diagnostic Plan	(%)
Therapeutic Plan	(%)
Disease-specific knowledge	(%)
Knowledge of disease & case management	(%)