Royal Veterinary College
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Examples of Module B-SAP summary essays

Justify your choice of cases selected for the B-module essays and describe any changes in your approach to clinical practice following study of Module B.

Example essay 1

My aim throughout this module has been to not only write up the case reports but to take the opportunity to do some wider reading around each subject, extracting the most relevant and practical points for my discussions. I have tried to select the most current information along with relevant human findings and any promising future alternatives. Sifting through all this information and repeat editing to obey the word limits has really ingrained these in my mind!

My medical case was a 10 year old MN Dachshund with hepatitis. I was able to test my clinical problem solving skills and I know I need to continue working on formulating comprehensive but rational differential diagnosis lists and not getting bogged down by details. I chose this case because 'hepatitis' is relatively common but sometimes I feel my approach is quite automatic and unconsidered. I have been slow to biopsy these cases in the past but now realise that this is usually the only method to determine the type of pathology. Ideally patients are referred for abdominal ultrasound and then Tru-cut biopsies may be an alternative to surgery. However this was not possible in this case and exploratory laparotomy allowed collection of multiple wedge biopsies (arguably the best type of sample[1]) as well as direct visualisation and haemostasis. I was surprised to learn that approximately 1/3 of primary hepatitis cases may be copper-associated and routine staining has been recommended.[2,3] I also realised my mistake in not submitting a tissue sample for culture and was interested that atypical leptospires may be an underestimated aetiology as they are easily missed using conventional staining techniques.[4]

My surgical case was a 2 year old MN Miniature Dachshund which underwent a cystotomy due to calcium oxalate cystolithiasis. I chose this case because I wanted to ensure I was treating these patients correctly as well as providing some useful discussion points surrounding other parts of the procedure such as prophylactic antibiosis. I should have used antibiotics more appropriately in this case. We do not use them routinely for clean procedures under 90 minutes in my practice but they should be administered at the time of induction when they are indicated.[5] I also learned that despite the negative urine culture, results of one study concerning urolithiasis indicated that if no bacteria are isolated from urine samples other sampling methods produce positive cultures in 25 per cent of cases so I will routinely perform bladder mucosal biopsy and urolith cultures in future.[6,7] Unfortunately synthetic absorbable monofilament suture materials were not available in my practice and Vicryl was used for this procedure. This is far from ideal as interstices between strands in multifilament suture may harbour bacteria and wick fluid.[5,8] Vicryl may also be rapidly degraded in infected urine.[7,8,9] We have since ordered in some PDS and some Monocryl. I will be interested to see how the role of minimally invasive methods of urolith removal such as cystoscopy and lithotripsy will develop in the future.

Optimmune is an expensive drug but researching it for this report has reconfirmed that it really is the drug of choice in keratoconjunctivitis sicca. My improved knowledge has helped me communicate this more effectively to my clients. Compliance is also aided by this as results can take some time to see (most dogs show a response within 2 weeks but may take up to 6 weeks while continuous treatment is important as stimulation of tear production ceases within 24 hours of withdrawing treatment[10]). These cases are very rewarding as they improve so dramatically and are so much more comfortable, often after suffering for some time or even developing painful corneal ulcers before coming in to us.

I chose Vidalta as it is not a drug I had used very often after hearing some worrying reports of it causing clotting defects. It is well known that blood dyscrasias may develop during treatment with carbimazole or methimazole.[11] In cats, methimazole has been associated with erythrocyte autoantibodies, but antibodies attributable to platelet or neutrophil antigens have not been evaluated.[12] Positive antinuclear-antibodies have been documented in cats receiving methimazole but not associated with blood dyscrasias or lupus-like signs.[12] Methimazole inhibits vitamin K–dependent clotting factor activation and epoxide reductase at high concentrations and a possible warfarin-like effect has been proposed.[12]

However I do think that compliance is so much better with a once daily formulation and I have now successfully and uneventfully stabilised a number of patients on this drug. I also hadn't realised that relative bioavailability in fed cats is as much as 138% that in fasted animals so tablets are best administered at the same time daily, especially in relation to feeding.[11,13]

I chose meloxicam as it is probably one of the most commonly used drugs in my practice but at the same time is far from benign. I found that once active there appears little benefit in administering NSAIDs preoperatively and no significant MAC reduction results.[14,15] Opioids lower MAC, prevent wind-up and promote smooth recovery so it may be safer to administer NSAIDs postoperatively, especially when operating without intraoperative fluids and blood pressure monitoring. I was also concerned to find reports where the most common risk factor in spontaneous gastroduodenal perforation was NSAID administration -in all cases used within the recommended dose range.[16] Worryingly many patients don't display clinical signs before perforation.[16,17] This has emphasised the importance of monitoring patients, especially those on long term therapy and not to ignore even subtle signs of toxicity. However NSAIDs are an important part of analgesic protocols and are very useful in the practice situation.

I chose pimobendan as again, this is a commonly used drug but I was not clear on its exact indications, especially in the various stages of mitral valve disease. Cardiotoxicity in this group of patients seems to mainly result from exaggerated pharmacodynamic effects in animals without systolic dysfunction.[18] However evidence suggests that impaired contractility contributes to heart failure development in dogs with advanced MVD and one study suggested long-term pimobendan treatment may offer significant protective effects.[19]

I was interested to learn that pimobendan inhibits platelet aggregation (thromboxane A2 production) which may hold promise for feline patients.[20] There are also concerns over proarrhythmic effects of pimobendan both in the human[21,22,23] and veterinary[24,25] literature. However pimobendan groups have failed to show an increase in ventricular arrhythmias in a number of veterinary studies.[19,26] In addition there is strong evidence of pimobendan's ability to improve quality of life and survival in dogs with DCM and CHF.[21,26,27,28]

My anaesthetic case involved a 15 year old male hyperthyroid cat requiring a dental. This is a very common situation and enabled me to evaluate how we manage these cases in my practice. I hadn't realised exactly how much the pharmacokinetic and pharmacodynamic properties of drugs alter as patients age. By learning more about the pharmacology of the drugs used I am able to critically evaluate my use of them in all types of patient. Rather than following a 'recipe' I am trying to more carefully tailor our anaesthetic protocols to each individual. I have also been encouraging the nurses to monitor blood pressure routinely using our Doppler. They are getting very skilled at placing it and interpreting the results which really highlight the profound effects of drugs such as isoflurane which is often used at excessive rates when really more analgesia is required. We used to rarely use local analgesic techniques but I was pleased at the result of the infraorbital nerve block in this case. The nurses are amazed at how low the vaporiser can be set and how smooth the anaesthetic and recovery can become. I am definitely trying to adopt a more multimodal approach to analgesia.

The diagnostic imaging equipment in my practice is basic but I have learned not to automatically blame this for poor radiographs. During writing of my case I have also picked up some additional techniques to maximise radiographic quality and have been inspired to attend CPD to improve my interpretation. I have also realised the importance of limiting repeat exposures and am currently compiling an exposure chart from our radiography log. This is already improving consistency of my radiographs and reducing the number of exposures required. I am hoping that we will be able to invest in some cassettes of different sizes and speed film-screen combinations. I have also learned much more about film faults – I would not have been able to list the possible causes, how to investigate them and how to remedy them before learning for this module.

In conclusion I have found compiling these case reports enjoyable, informative and very useful. I am already seeing the benefits of improving my knowledge and some of the changes we have made and I am sure my patients are too.

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Example essay 2

Through considering my approach to clinical cases, and by enhancing my clinical depth and breadth of knowledge, my capability to work as a proficient veterinary practitioner has been improved throughout the study of module B. I now feel confident that I have a systematic and logical approach to practice and that my clinical knowledge and my ability to identify risks ensure the formulation of decisions that provide the best outcome for my patients.

In order to illustrate completion of the learning objectives for module B it was necessary to write a variety of essays discussing cases that I have worked-up or managed. The first of these was a geriatric seizuring dog called Rusty which I chose to help describe the problem-based approach to clinical practice. The investigation of Rusty's seizures involved a full work-up requiring investigation into both extra and intra cranial causes of seizures and as such involved numerous decision making steps. However the principal reason I chose this case was because I found it interesting and although the long-term outcome was not positive, the diagnostic tests and interpretation involved made it an interesting case to discuss.

For the essay on therapeutics I chose four cases that received contrasting drug classes, I selected cases that were treated with an antibiotic, an angiotensin-converting-enzyme (ACE) inhibitor, an ectoparasiticide and non-steroidal-anti-inflammatory drugs (NSAIDs). These are commonly used therapeutic classes and considering their indications, pharmacokinetics and side effects has great relevance for day-to-day first opinion practice.

The surgical learning objectives for the B module focussed less on surgical ability and technique and more on indications for surgery, asepsis, pre and post operative patient care and client education. I chose a pyometra case that required an ovario-hysterectomy for my surgery essay. The metabolic and hydration concerns associated with pyometras make pre and post operative evaluation important considerations, plus there are numerous significant points concerning asepsis and client education that can be discussed.

In regards to the B module essay on anaesthesia it was necessary to choose a case that presented challenges from an anaesthetic view point. I discussed Guy; a geriatric hyperthyroid cat, whose diagnosed condition and high chance of concurrent disease made anaesthesia a challenge. In order to make the anaesthetic as safe as possible it was necessary to consider each aspect of anaesthesia including: pre anaesthetic assessment, drug choices, monitoring and supportive equipment and post operative care.

Following completion of the B module there have been numerous alterations in my approach to clinical practice. I feel that through considering each key aspect of small animal practice weaknesses in my approach have been identified and from this I have been able to improve. This has been most notably the case with my approach to small animal medicine and after completing this module and attending a seven day course at the Royal Veterinary College on clinical problem solving; I now feel that my approach to medicine is both

systematic and logical. I find this systematic approach most useful when dealing with complicated patients with multiple problems. Sorting problems into lists and asking appropriate questions means a suitable diagnostic route can be embarked upon that should lead to significant answers and results.

Through the consideration of various therapeutic categories of drugs I have found that my approach to prescribing drugs on a day-to-day basis has altered. I am now acutely aware of drug side effects and I also take more time to consider drug pharmacokinetics as I can appreciate the extent that drug uptake and distribution affects the therapeutic outcome.

Following the completion of module B I feel that significant change has occurred in regards to my approach to surgical cases. I work at a tier three RCVS accredited practice and as such there are practice protocols in place that aim to minimise any risk in aseptic breakthrough. I do now better appreciate the necessities of these protocols. Also I always now ensure that animals are assessed fully prior to surgery and that post operative care is thoroughly considered.

In regards to anaesthesia I feel that following my case report I have found myself breaking down the considerations of an anaesthetic. Instead of considering an animal's general anaesthetic (GA) as a whole I find it simpler to think of an animal's GA requirements in terms of pre GA assessment, drugs required, monitoring and support, and post GA concerns. This helps ensure that all aspects of anaesthesia are considered and that as such risks to patient wellbeing are minimised.

The imaging aspect of module B has massively enhanced my knowledge on the underlying reasons for stringent safety measure with regards to ionising radiation in the workplace. A thorough review of radiographic technique has enhanced my ability to take diagnostic radiographs.

Before studying for the B module I utilised a variety of diagnostic tools to aid my diagnoses but a rigorous review of the underlying disease processes has enabled me to further utilise diagnostic tools to ensure the most appropriate tests are performed for each diagnostic scenario. I also feel that I am better prepared to request advanced imaging such as CT and MRI scans. As mentioned previously the module has greatly assisted in evolving my approach to practice as I now frequently employ a systematic methodology to arrive at diagnoses.

Over the course of module B I have referred to numerous papers, publications and text books. However, the most useful source I discovered was the BVA published "In Practice" articles. I find that these articles tend to focus much more on clinical approach to practice and as such are of great relevance to the module.

I find one of my principal areas of enjoyment in my work as a small animal practitioner is facing the challenges that a difficult case poses and achieving a successful outcome. However for this to occur, both a sound depth and breadth of veterinary knowledge is required and also a logical and systematic approach to clinical practice. Module B has considerably helped me with all aspects of this, and it is now clear that individual knowledge or skill is irrelevant if an inappropriate diagnostic route is embarked on.

Example essay 3

It is imperative that as veterinary surgeons we are competent in the fields of medicine, therapeutics, surgery, anaesthesia and diagnostic imaging, if we are to deliver the best possible service to our clients. I believe my choice of cases clearly illustrates both the diversity and complexity of cases I am exposed to in a busy first opinion small animal veterinary practice.

The reason I chose a case of hypoadrenocorticism as my medicine case report was because it is a medical condition that interests me greatly as the presenting signs are relatively non specific, have a tendency to wax and wane, and as they frequently respond to non-specific therapy, the disease has a tendency to be missed. This case has underlined for me the value of comprising thorough differential lists and of carefully modifying these lists once the results of laboratory tests have been collated. This case has highlighted the value of being able to measure electrolyte values quickly and accurately 'in house' as once informed decisions can be made promptly, the outcome for the patient can be markedly influenced. Urinalysis of the patient's urine revealed a low specific gravity (1.015) despite the fact that she was dehydrated on clinical exam. There was evidence of both a pre-renal as well as a renal azotaemia which made the distinction between hypoadrenocorticism and renal failure more difficult. Subsequent to this case, I now understand that in hypoadrenocorticism the concurrent hyponatremia impairs the patient's ability to concentrate their urine. I now measure electrolytes in most dogs presenting with signs of renal failure. However, while a patient with acute renal failure may have similar electrolyte changes (hyperkalemia, hyponatremia and hypochloremia), the clinical history is generally much shorter and the response to appropriate fluid therapy (ie the return of concentrating ability once normonatremia has been established) is generally longer if at all. Finally, this and other similar cases have made me appreciate that if I am to continue to identify such cases, I need to maintain a high index of suspicion for this condition.

In the therapeutics section I endeavoured to cover a range of drugs that are used in the treatment and/or management of a diverse group of clinical conditions. Phenobarbitone (Epiphen; Vetoquinol) is frequently prescribed for the management of epilepsy both in dogs and cats. Choosing this drug gave me the opportunity to investigate it in detail and I now feel competent with regard to clearly explaining to owners, how it works, why serum monitoring and hepatic function evaluation are required and why dosage increases may be required over time. As a result, I am confident that I have encouraged better owner compliance with regard to the usage of phenobarbitone on their pets.

I feel benazepril (Fortekor; Novartis) was an appropriate choice because in my opinion it has clear therapeutic benefits in most cases of heart disease and while many owners are familiar with angiotensin converting enzyme inhibitors, few understand how they work. Subsequent to this module, I feel equipped to clearly explain the renin angiotensin aldosterone system, including the deleterious effects of angiotensin II and aldosterone, and in doing so, I am now confident that owners can comprehend the importance of benazepril for their pets.

Prior to the introduction of ciclosporin (Atopica; Novartis) to the veterinary market, in my opinion there was an over reliance on the use of glucocorticoids for the management of canine atopic dermatitis. In contrast to glucocorticoids which are cheap, the cost of

ciclosporin frequently prohibits it's usage. If we as veterinary surgeons are to successfully prescribe this very useful drug for our patients, we need owners to fully comprehend it's mode of action and it's benefits. It is for this reason, I felt compelled to investigate this drug further. I now feel that I am prescribing ciclosporin to pets, whose owners may previously have opted for other treatment options.

Lastly trilostane (Vetoryl; Dechra) was chosen as it treats a commonly diagnosed endocrinological condition at my practice. Learning more about this drug has enabled me to have a more detailed discussion with owners about the cost implications as well as the benefits and potential complications associated with it's use. I am now also in a better position to educate them as to why ACTH stimulation tests and other monitoring tests are required at regular intervals.

I believe that a TECA/LBO, while radical and irreversible, is a very valuable surgical procedure for the management of animals with severe ear disease. 'Sandy' had long standing and irreversible hyperplasia and stenosis of both ear canals and was clearly suffering from unremitting pain. I believe I handled this case appropriately and as a result, 'Sandy' now enjoys a very good quality of life with her new owners.

Atopic dermatitis is a commonly encountered problem in veterinary practice and has been reported to be the most common cause of chronic otitis externa in dogs (Griffin, 1993). This case has clearly underlined the value of managing cases of atopic dermatitis correctly from the onset, thereby avoiding the need for radical surgical intervention at a later date. This case has also made me consider the importance of educating clients on the nature of the surgery being performed along with potential risks and complications in addition to the expected outcome post surgery. Studying for this module has also given me the opportunity to consider the importance of my nursing staff and to consider my aseptic technique and that of my colleagues. I now ensure that only correctly attired personnel are allowed into the operating theatre at any time and I have introduced the compulsory wearing of head covers and face masks for operating veterinary surgeons. It is also now obligatory that nurses wear surgical gloves during the initial preparation of the surgical site.

I believe that the choice of my anaesthetic case (a diaphragmatic hernia in 1 year old MN DSH) was appropriate as it clearly illustrates the importance of pre-operative stabilisation, close monitoring and careful postoperative observation. Studying for this module has made me appreciate the benefits of a commercial oxygen cage as my patient was supplied with supplemental oxygen from the point of admittance up to the point of induction of anaesthesia and again in the early post operative period. It has made me consider my attitude towards the timing of surgical intervention post trauma as there is ongoing debate about when surgical correction should be carried out. Studies have shown that hernia repair undertaken within 24 hours of injury is associated with the highest mortality rate (Rochlitz and others, 2001). I have learned that it is only wise to perform emergency surgery if there is life threatening hypoventilation as a result of compression of the lungs by abdominal viscera. This case has also made me appreciate the importance of capable and well trained nursing staff, who are both confident in the utilisation of available monitoring equipment and in the provision of manual positive-pressure ventilation, providing adequate ventilation to prevent hypoxaemia and hypercarbia but at the same time avoiding rapid lung re-expansion which has been associated with pulmonary oedema (Wilson and Hayes, 1986). Subsequent to this case, I have become more proficient in the interpretation of ECG

patterns through further reading (Bolton's Handbook of Canine and Feline Electrocardiography) and I have also invested in a blood gas analyser. These results can provide invaluable information about the oxygenation and acid base status of the patient and allow treatment to be tailored accordingly.

I am very fortunate to own computed radiography equipment and while I felt that the transition from conventional film-screen radiography to a digital system was relatively straightforward, I must admit I was not fully aware of how computed radiography functioned but learning for this module has taught me this. I was also unaware of how it differed from direct digital radiography but I now fully understand that with both digital systems, the method of acquiring the image is the same, it is just the technology used to record the image that differs. While I was well aware of the many advantages of a digital system such as the ability to manipulate the image, easy storage and the removal of the need for chemical processing and a darkroom, studying for this module has allowed me to understand the pitfalls of post-processing. I am also now fully aware that there is a limit to what image manipulation can achieve; if the required detail is not present in the recorded data, no amount of adjustment will result in a diagnostic image.

In conclusion I have enjoyed studying towards the B-SAP.1 module and in my opinion it has a made me a more competent practitioner in the fields of medicine, therapeutics, surgery, anaesthesia and diagnostic imaging. It has improved many aspects of the service I provide to my clients from the way in which I approach cases to the manner in which I educate clients regarding expected outcomes and potential side effects of therapeutic agents used.

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