

Improving teaching within veterinary clinical oncology

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Introduction

Veterinary clinical teaching includes many challenges that are not normally encountered in classroom teaching.

Due to the circumstances around clinical teaching there is an extra layer upon the didactical triangle, which needs to be considered in the teaching and learning situation. In addition to the interaction between the teacher, the student and the learning content, there are also other factors such as the patient, the client (patient owner) and the hospital business, which need to be taken into account (see figure 1.1). These additional factors complicate planning of, and control over the teaching situation, as the teacher cannot control which clinical cases come into the clinic, or how the owner(s) or animal will respond to a teaching situation. As the hospital runs as a business there are elements that need to be taken into account, to avoid that the teaching situation damages the relationship between the client and the teacher, or the hospital. In the ideal setting the student's engagement in the clinic should "maximize the efficiency of the clinical practice and optimize the students educational experience, whilst not harming the relationship between the care provider and the client" as described by Simon et al., 2003.

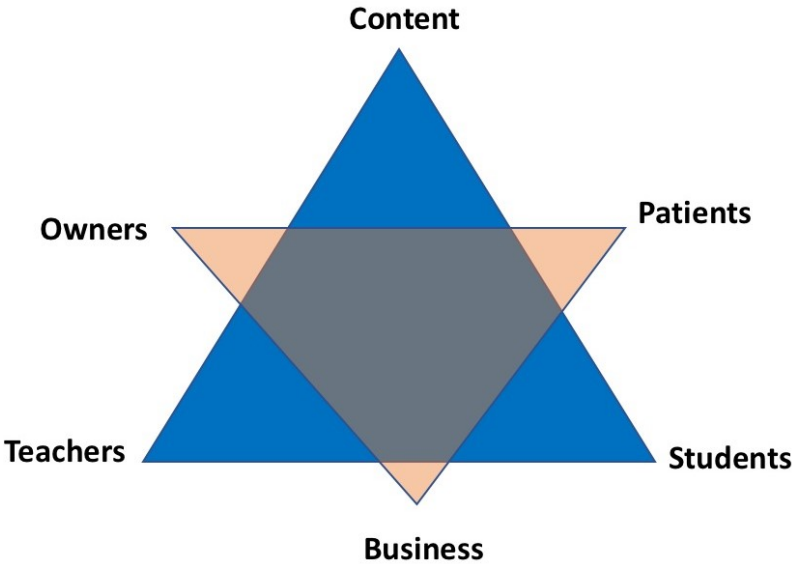


Fig. 1.1. Interactive factors needed to be considered for clinical teaching. The classical didactical triangle is illustrated together with an additional layer of factors which are needed to be taken into account for clinical teaching.

This project wanted to investigate how the clinical teaching in oncology could be improved in order to not only enhance the learning experience for the students, but also to take the other factors in the equation into account. The reason for wanting to improve the teaching on this rota is that the patient flow, the patient material and the individual teacher's preparation are variable between student groups. As this is the last clinical course before the students are qualified as veterinarians, there are certain essential skills that the students should be able to perform when they graduate which is known as day 1 competences and hence there are some essential skills that should be practised or discussed during the rotation.

Brief description of course: The course Advanced Companion Animal Track is a 26.5 ECTS points course. The workload for the student in the course is 460 hours of practical experience and 269 hours of study time or preparation. The course incorporates different clinical specialties

in the University Hospital for Companion Animals in Copenhagen and also includes an external rotation period in private small animal practices. Around 60 students take this course each year. The part that will be discussed in this assignment, relates to the clinical rotation in veterinary clinical oncology which includes 16 hours of clinical teaching for each group of students divided into groups of 3-4 students at a time.

There are general intended learning objectives for the course which are divided into knowledge, practical skills and competencies. The intended learning goals cover the course as a whole and are therefore very broad, leaving the students a bit uncertain with regards to what they are expected to learn in the different disciplines.

Aim of this project

To improve and standardise the clinical teaching in veterinary oncology based on information gained from questionnaires filled out by students recently completing this course, pedagogical principles and dialogues with the clinical teachers.

Materials and method

An anonymous multiple-choice questionnaire was distributed by email to 30 students on the day of completion of the course. The full list of questions for the questionnaire and the possible answers is shown in appendix A. The questionnaire was sent out by email and two follow up reminders were sent out to increase the completion rate. The questionnaire was left open for 10 days after which it was closed for further participants. An identical questionnaire was then passed to all teachers on the oncology rotation and they were asked to answer what they thought the majority of students had replied, to investigate if the teachers' and students' interpretation of clinical caseload, teaching content and understanding of the subject was comparable.

A total of 9 multiple choice questions were formulated covering subjects relating to the preparation material for the course, the intended learning objectives, the caseload in the clinic, alternative preparation methods, teaching subjects and the ideal clinical rotation design. One question was left open for students to comment on further recommendations for how the clinical rotation could be improved.

Based on the answers from the students and the teachers of the course, summary statistics were made to mainly look at differences between the teachers' anticipation of student answers as well as particular areas were answers from the students indicated that there could be room for improvement.

Results

In total, 14 out of 30 students completed the questionnaire whilst 5 out of 5 teachers completed the questionnaire as seen in the flowchart figure 1.2. All data was summarized by analysing the frequency of each answer within the student and the teacher group as seen in appendix A.

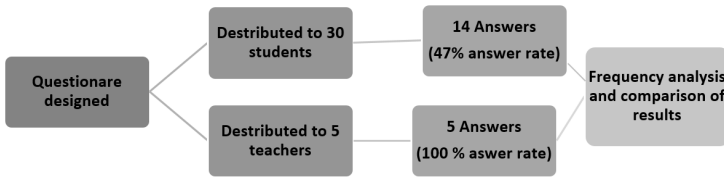


Fig. 1.2. Illustration of the questionnaire distribution and completion rate. The total list of questions and answers is illustrated in appendix A.

Interpretation of results

Based on the questionnaire answers from the students there was suggestive evidence for elements in the rotation which could be improved or altered.

From the answers from question 1 regarding the preparation material for the rotation, it was evident that 43% of the students felt that the preparation material was either inadequate (29%) or they didn't read it (14%). Likewise, from the answers in question 2, the intended learning objectives for the rotation were either unclear (14%) or where not read (21%). This suggest that there is room for improving the background information for the rotation making, and making it more appealing to read.

With regards to the clinical caseload; question 3, then 57% of the students felt that the caseload had been adequate whilst 29% and 14% felt that it was too high or too low respectively. When asked about whether the students would prefer as high a caseload as possible versus fewer cases with more thorough theoretical discussions in question 9, the majority 71% would prefer fewer selected patients with time for more theoretical background for each case. From these answers, it was evident that individual students been exposed to different case flows during their rotation, however that providing a few good teaching cases with time for going through theoretical knowledge and pathogenesis would be preferred by the majority rather than being exposed to a higher case flow.

The parallel running clinical rotation in cardiology provides the students each year with an information package, which includes details about learning objectives, clinical case examples, examples of paraclinical test results and a short multiple-choice assignment. This information is used for student preparation but also used as case material during the clinical rotation in order to discuss important clinical presentations, which might not have been seen in the clinic that day. In this sense, the theoretical material is used to substitute clinical cases in a controlled manner providing the teacher with more control over the teaching situation. The oncology rotation has abstained from providing similar material, as the teachers have thought that the students would not appreciate it, due to potentially extra preparation time. From the answers in question 4 it is evident that only 20% of the teachers thought the majority of students would be interested in this kind of material whilst 80% answered that they though the majority of students would not appreciate a detailed information package. When looking at the figures from the student answers, this shows the opposite, with 86% of the students replying that a more detailed information package would be great and improve preparation whilst only 14% reply that they think this additional material will require too much preparation time. This question is a good example of teachers thinking that they know what the students want, however when asked, then the answer is quite different, which emphasizes the importance of making a student-survey.

When asked about the contents of the clinical teaching in question 7, the four subjects of highest interest for the students where common tumour types, prognosis, grading and staging procedures. Interestingly, when looking at what the teachers thought the students would be interested in, common tumour types, sensitive conversations with owners, staging and grading procedures came as the 4 subjects highest on the list. In this

example, there seemed to be relatively good alignment between what the teachers thought that the students wanted to learn more about and what the students actually answered that they wanted to learn more about, with some exceptions. Though teaching should not be designed solely based on what students want, then this questionnaire was sent out, just as the student finalized their clinical rotation before becoming veterinarians and hence this likely represents the skills that they feel they are missing, when they start working as small animal practitioners, and hence the request should be considered when planning the teaching. When asked specifically about discussing ethical dilemmas in the teaching in question 6, then the students divided equally into two groups of students who felt it would be relevant to discuss ethics more and who felt that ethics was discussed enough elsewhere during their veterinary degree.

Question five asked the student about whether oncology was mostly about chemotherapy and hence mostly related to specialist clinics or whether it was more about diagnosing and staging and hence very relevant to first opinion practitioners. Unfortunately, only 64% of the students answered the latter. Around 50% of geriatric animals will develop cancer and therefore oncology is a very relevant subject for any small animal veterinary practitioner. Ideally all students should feel that the subject would be relevant for clinical practice, and hence there should be more focus on the students understanding what skills they are learning, and relating this to general practice. Question eight asked the students if they were ready to handle oncological patients after the clinical rotation. None of the students felt they could do this independently however 79% felt they could do this with the assistance of existing literature. Twenty-one percent felt that they were not ready to handle oncological cases. Ideally 100% of students should feel ready to approach oncological patients after the course.

In general, the teachers' anticipation of the student answers was relatively well in alignment with the students' answers, with a couple of exceptions as seen in appendix A.

Conclusion drawn from the questionnaire

The conclusion from the questionnaire results was that providing a more detailed information package for the clinical rotation including well defined intended learning objectives, practical information and theoretical cases is sought by the students. There should be focus on applicable skills and the

students understanding the clinical work. Based on the answers from this questionnaire and taking base in examples from literature on case based learning and problem based learning (Irby, 1994; Krogh et al., 2015; Krogh & Wiberg, 2015) it was decided to make improvements to the clinical rotation with the aim to improve teaching for the students whilst also easing the work for the clinical teachers.

Improvements made to this course based on the findings in the questionnaire which will be implemented in the clinical rotation fall 2019

Improved course information and teaching information on Absalon

- Description of the clinical rotation.

Defined intended learning objectives for the clinical rotation (which are within the frame of the overall course description).

Clear time table describing the different planned practical activities for the rotation each week.

- Theoretical oncology cases for discussion of most common tumour types, staging and grading schemes, paraneoplastic syndromes, evaluation of blood results and prognostication.
- Multiple-choice test for testing of basic knowledge. Test will be used as a discussion point between students and teachers to catch knowledge gaps, but the students will not be judged on their performance.
- Improved literature list, including updated literature on common cancers and indications for chemotherapy.

Improved clinical supervision:

- Assignment of two clinicians to the rota on teaching days to assure that the clinician teaching has time for case discussion with the students whilst the second veterinarian manages other clinical activities mainly relating to chemotherapy treatment and external phone advice calls.

Control of patient bookings:

- Increased control with regards to the number and the type of patients which are booked during student course days to assure a sufficient number of good quality cases.

Discussion of results with teaching colleagues:

The results and implementations from this project report was discussed with two teaching colleagues from the clinical oncology teaching group. The changes suggested were welcomed as both could see the clear advantage of standardizing the teaching and making learning objectives better defined to the students. Additional case summaries and literature was suggested to be added which was implemented. The use of the multiple choice questionnaire as a discussion point with the students, was thought of as a good idea to catch knowledge gaps before the completion of the rotation. The suggested changes were thought to be able to make the teaching more similar between groups, provide more confidence to the students as well as helping the clinical teacher controlling some of the teaching content.

Conclusions made from the assignment

The main conclusions made from this assignment were that a more elaborate ‘information package’ for the rotation including defined learning objectives, time plans for set activities and theoretical case material could improve the rotation. This material is not meant to substitute the clinical cases but to compliment them. The changes to this course will be implemented in the fall 2019 and evaluations from the students exposed to this will be interpreted in the Spring 2020 to see if the implementations improved the teaching and learning situation for the students and teachers.

References

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A

Questions and answers

Teachers percent answers	Students percent answers	Question and answers
		Regarding the information on Absalon, choose the answer which completes the sentence best: I feel the information on Absalon regarding the oncology specialty clinic is
0	14	Very good, I read it and felt well prepared for the clinical rotation
60	43	Good, I read it but felt that information was missing
0	29	Inadequate and not useful as preparation for the clinical rotation
40	14	I did not read the material
Q1		
		Regarding the intended learning objectives for the clinical rotation in oncology, I feel the intended learning objectives in the rotation are:
0	21	Well defined, it was clear what I needed to achieve on the rotation
40	43	Reasonable, but it was not clear what I needed to achieve on the rotation
20	14	Inadequate, it was not possible to see what I should achieve from the rotation
40	21	I did not read the intended learning goals
Q2		
		The patient flow on the days I was in oncology can best be described as
20	57	Adequate, with many different good cases which meant that I got a good insight into clinical oncology
40	14	Inadequate with too few cases for me to feel that I got an insight into oncology
0	0	Adequate but the cases were too similar
40	29	Too high, we did not have enough time to go through the cases in plenary
Q3		
		The cardiology specialty clinic has made a very detailed information package with examples of cases and clinical test results. I feel a similar approach in the oncology clinic would be:
20	86	Great, I would feel better prepared and sure that I would be exposed to the most important concepts in oncology
0	0	I don't think it is relevant as I felt that I got through all important elements during my rotation
80	14	I think it would be good but that it would require too much preparation time for the students
Q4		
		After my rotation in oncology I feel:
0	36	Oncology is mostly about treatment and chemotherapy and is therefore not relevant for first opinion practitioners
100	64	Oncology is mostly about diagnosis and workup and to a lesser degree about chemotherapy and is therefore very relevant for first opinion practice
Q5		
		Regarding ethics. Since many cases can include ethical dilemmas I feel
100	50	It would be relevant to discuss ethics as part of the teaching
0	0	It would not be relevant to discuss ethics as part of the teaching
0	50	Ethics are discussed on many other occasions and hence it is not necessary to repeat here
Q6		
		I would like more focussed teaching on
60	64	Grading of tumors
80	64	Staging procedures
20	43	Oncological principles
40	50	Treatment options
20	43	Reasons for referral
20	71	Prognosis
0	14	Chemotherapy
100	36	Sensitive conversations with owners
100	86	Most common tumor types
Q7		
		After my rotation in clinical oncology I feel that I am
0	0	Ready to handle and diagnose oncological cases independently
80	79	Ready to handle and diagnose oncological patients with some help from books and notes
20	21	Not ready to handle and diagnose oncological patients
Q8		
		For my ideal oncology rotation I would wish:
0	29	I would wish as high as possible patient flow during my rotation
100	71	I would wish a few selected patients with more time to discuss and go through the theoretical background for each case
Q9		