Interdisciplinary case-based teaching utilizing a dual-focused approach with participation from nurse anesthetists and residents in anesthesiology: first experience

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Abstract

We describe here our first experience with two focused case used in inter professional teaching at Linköping University. Both the teachers and the group of participants mirrored the two focuses in the case. At the end of the seminar a short epilogue and two references were given to the students to stimulate their reflection and learning. Two focused case seminar seems to be a useful instrument in inter professional teaching and learning.

Keywords: inter professional learning, case teaching, two focuses case

Introduction

The case-based teaching was introduced in the 19th century at the Harvard Business school, and soon thereafter it became a popular tool in medical education at Harvard University (Cabot, 1906). Cases usually had high taxonomy (Solo taxonomy 4- 5) and typically had one professional focus (i.e. one presenter is leading the case discussion as described by Johansson (Johansson & Nordquist, 2009)).

Preparations

We performed a pilot test of a dual-focus case as part of the implementation of case-based teaching in a post-
graduate course for nurse anesthetists at Linköping University, Sweden.

The group initially exposed included eight experienced nurses and three anesthesiology residents. The presentation was based on a case of a team managing a critical situation of upper gastro-intestinal hemorrhage in the operating theatre (see Appendix 1). The narrator of the case did not participate in the case discussion. The case described an authentic clinical situation recalled by the writer from memory, as described by Hafler (Hafler, 1989) at Harvard University. Our case had two viewpoints: one of Anna and the other of Bertil. The case was written in present tense to more effectively involve the students participating in the case seminar.

We distributed the case to the participants two weeks prior the case seminar. The participants received a student template containing the objectives and the requirements for an approved seminar. The students were expected to show active participation and good preparation, observe and judge complex anesthesiological situations, judge the risks in critical situations, be able to participate in a discussion on the basis of evidence based anesthesiological practice and consider the ethical perspectives of the case.

**The case seminar**

*Environment and circumstances*

The discussion took place after lunch (13.15-14.45) and was led by two individuals representing the two viewpoints (focuses) of the case: an experienced nurse anesthetist and by an anesthesiologist with long experience in clinical and pedagogic work. First we set the rules for the seminar and the students received a nameplate with their first names, so the discussion leaders could call the participants by name. The lecture hall for case was not a traditional lecture hall but a plain room and the boards were organized in a semi-circle so that all the participants could see each other and the discussion leaders. We used a large whiteboard for notes.

In earlier case seminars, we had good experience with using a warm-up call; the participants were divided into two groups, organized to reflect the team (nurse and anesthesiologist) to discuss the case with each other for 15 minutes. The intensity of the discussion declined within 15 minutes, after which the two groups could begin the discussion together with a general question: Who can summarize what this case is about?

In the first part of the discussion led by the senior anesthesiologist the questions were focused on the medical and safety content and the students were very active. The case contained six decision points which were landmarks for the case leader to navigate by. The case leader's questions generated discussion between the participants and the discussion was lively and objective. The participants were all engaged approximately to the same extent. The questions focused both on what the participants thought about the actions taken during the real case, and at the same time also what they would have done in the same situation. We also asked the participants to describe how they would have acted during the case at the six different decision points and whether the decisions were perceived as correct and adequate by the participants. If they objected, an alternative solution had to be stated.

After approximately 45 minutes the case was discussed and every main theme was noted on the whiteboard as shown in Figure 1. Thereafter the senior nurse anesthetist took over the leading of the case and the participants began on a new path to discuss behavioral issues that could be a part of an explanation of the decisions that were or were not made. Factors identified that could contribute to actions and decision making in this case were clinical routines, problems with communication, the absence of or insufficient planning for the procedures in the case, and the meaning of responsible acting in clinical practice. The case was closed after a short discussion of ethical issues. At
the end of the seminar we summarized the whole case and handed out two references to enhance the understanding of the case. We also gave the participants a short epilogue as seen in Appendix 2 in order to facilitate post-seminar reading and active reflection.

Discussion

In this first educational experience the dual focus of the case is reflected by the two teachers who lead the discussions. It appears advisable to discuss first the medical content from different angles with the main focus on clinical decisions: what, why and how-when. The aim of the second part was to raise general questions related to communication and ethics specifically in the context of patient care, while also providing an opportunity to explain things.

After the case one teacher was reflecting with the participating students who were pleased and very positive towards this kind of real-life based teaching. By using two focuses throughout the entire case, the student group and the teachers generate an atmosphere of team learning and promote an open communication within the team with tangible and direct benefits in clinical work, where improved communication may improve patient outcomes.

In conclusion we describe our successful first experience with case-based teaching utilizing a dual-focused approach. This may open a new era in high-taxonomy inter-professional teaching and learning. Elements essential towards the success of this approach include the group discussion prior to the case description, and cooperation between the two teachers. Further studies will need to be performed in the future.

Figure

Main theme noted on the whiteboard
Figure 1

**Take Home Messages**

- We describe our successful first experience with case-based teaching utilizing a dual-focused approach.
- This may open a new era in high-taxonomy inter-professional teaching and learning.
- Elements essential towards the success of this approach include the group discussion prior to the case description, and cooperation between the two teachers.
- Further studies will need to be performed in the future.

**Notes On Contributors**

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**Appendices**

**Appendix 1.**

The unaccustomed situation - Case 1
Anna spends part of her residency during her anesthesiology training at a large county hospital in Sweden. She looks forward to have the opportunity to work in a large hospital as she otherwise works at a smaller rural hospital. Anna has extensive experience with on-call work; she is used to always work alone when on call at the hospital. She is accustomed to adapt to various different clinical situations.

It is Anna’s third on-call night. At the emergency department a patient with upper gastrointestinal hemorrhage is assessed and seems to need a gastroscopy. Anna and the surgeon meet the patient in the emergency room and the surgeon decides to attempt endoscopy with the patient in conscious state in the OR. Because of a misunderstanding about who would inform the surgical team, the patient unfortunately is lying in the emergency room for quite long time before he is taken to the OR.

Anna and nurse anesthetist Bertil meet the patient together in the operating room, when they notice that the patient becomes increasingly restless. The surgeon begins the gastroscopy anyway, but finds it difficult to advance the gastroscope and the patient starts feeling unwell. He is not in pain and does not have nausea, but fails to cooperate during the procedure. Bertil is now suggesting to Anna that the patient perhaps should be sedated in order to tolerate the gastroscopy. Other operations in the meantime are being delayed.

Bertil explains that sedation is often used in this hospital for this type of intervention and it appears to Anna that he is confident about this. Anna does not feel very comfortable about it, but realizes that the situation is not really sustainable as it is now.

The patient soon receives a dose of fentanyl and the surgeon begins the gastroscopy. Now Anna is paged from the emergency room and she is forced to leave. A short time thereafter she is paged by nurse Cecilia from the OR and she asks Ana to return immediately to the OR. Once back she finds Bertil trying to ventilate the patient. The patient recovers somewhat and regains spontaneous breathing. The surgeon has not finished the gastroscopy and is waiting to continue. After approximately a minute, the patient begins suddenly gagging and vomiting. The patient is quickly becoming pale and arterial oxygen saturation falls rapidly. The patient has stridor and he develops ST depressions on the ECG. The situation is deteriorating rapidly, the patient loses consciousness and does not respond to stimulation. Anna now attempts to establish a free airway by chin lift and use of an oropharyngeal airway, but she doesn’t succeed. Surgical nurse Daniella asks if she should call the on call intensive care doctor. Anna feels that the situation is becoming critical. When the senior on call colleague Erik arrives, Anna and Bertil are still trying to secure a free airway and the patient is now severely hypoxic. Together with Erik Anna is inducing anesthesia and relaxes the patient. It is difficult to get good visibility with laryngoscopy. Even Erik makes several attempts to intubate before the tube is in place, and they begin to ventilate the patient. They decide now to discontinue the gastroscopy and transport the patient to the ICU for treatment of aspiration pneumonia, and swelling of the throat after the trauma caused by the difficult intubation.

Appendix 2.

Epilogue and reflection

Later on it becomes apparent that the patient developed an acute myocardial infarction and remained confused for ten days in the intensive care unit. Now Anna is reflecting on the events, and identifies a series of factors that could have contributed to the adverse outcome. She was not used to the routines and the organization of this large hospital, and she did not know the night personnel nor did the personnel know her. Anna tried to avoid conflict with the night personnel and therefore she did not oppose their proposal to sedate the patient. She was used to work alone during her calls at the smaller hospital and was therefore not used to asking for help once she was paged away, or when she struggled to secure the airway of the patient. Moreover, she did not read the information from the patient chart
accurately and had no backup plan in case of a disaster. At the same time Anna thought that she was too passive and not sufficiently in charge of the case. In conclusion she feels that this case was very instructive.

Declaration of Interest

*The author has declared that there are no conflicts of interest.*