



Innovative Crash Course of Anatomy: Implementation of Clinical Anatomy Teaching for the Students of Medicine

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Abstract

Aim of the Study: The aim of the study is to teach clinical anatomy and assess the clinical students of medicine both in anatomy and in clinical subjects simultaneously [MBBS or MD or BDS programmes]. **Place of Study:** This anatomy can be taught in the department of anatomy and related cases in clinical subjects can be taught in the wards of teaching hospitals in medical colleges or university colleges. **Period of Study:** As and when students are posted in clinical, anatomy can be taught through regional or systemic anatomy - a continuous teaching during paraclinical and clinical postings. **Impact of Teaching:** Study of anatomy by this method will benefit the students not only in studying clinical cases but also in having sound knowledge of anatomy useful for their clinical practice.

Keywords: *Regional Anatomy; Clinical Medicine; Plastinated Specimen's Table Teaching; Clinical Practice, Correct Diagnosis; Bed Side Clinics*

Introduction

Anatomy is a subject which is essential and mandatory and has to be learnt by all students of medicine. One should have sound knowledge of anatomy, especially for clinical practice, so that they can apply their basic knowledge on the clinical side to all cases of physical examination, both for local and clinical examination. The new concept of a crash course in anatomy will help the students of both undergraduate and postgraduate courses. This will help them to update their knowledge and help them to become very good consultants on clinical subjects and to brush up on the knowledge of this preclinical subject on the clinical side. Hence, this study subject has great clinical importance.

Material and Methods

Different groups can be framed for the package of anatomy teachings for different systems [for example, cardiovascular system and gastrointestinal systems]. Later anatomy in two different systems can be taught separately in medical/university colleges' Anatomy departments, where dissected specimens of [for example, cardiovascular system and gastrointestinal system] were shown in dissection theatres by subject experts. This is followed by bedside clinics that can be taken on the same systems correlating the knowledge of anatomy by clinicians in the wards of a teaching hospital. This type of study will trigger an interest and will have crystal clear knowledge of clinical cases and will gain confidence in the mind. This will improve the efficiency and clinical knowledge.

Effects of Teaching:

This type of approach in teaching enables the students to understand all the clinical cases very clearly by correlating the knowledge of anatomy that has recently been taught. They gain confidence in their minds and develop an interest in the clinical subject. Later, they spontaneously started examining more cases in the same systems and improved their efficiency. Later internal assessments in anatomy and clinical subjects will improve performance in both subjects.

Ethical Statement:

This work has been ethically approved vide reference no. IRB-JMC/2019/30 dated December 19, 2019 by the Ethical Committee of Institutional Review Board, Janaki Medical College, Nepal.

Discussion

In recent years, the curriculum of undergraduates has undergone tremendous changes, including a reduction in teaching time allotted to teach the subjects of Basic Medical Sciences, including Anatomy. The new curriculum is a system-based curriculum. Then a study was done to assess the impact of changes to the new curriculum on students of medicine, especially on their knowledge of surface anatomy. A simple test was conducted on the medical students at Queen's University of Belfast, UK. for intake 95-98f to test the knowledge of surface anatomy. The students from the 1995 batch belonging to the old curriculum scored better than the students belonging to the new, systems-based curriculum [1996-1998]. The conclusion was that system-based courses had a negative impact on medical students' knowledge of surface anatomy (McGeown *et al.*, 2003). In 1993, a GMC document called Tomorrow's Doctors was implemented, which resulted in a reduction of time to teach Anatomy to undergraduate students. They conducted a study on perceived students' essentiality for packages of Anatomical Teachings to support clinical attachments. They formed two groups: Group A were the students at the beginning of their clinical postings, while Group B were the students who had finished their clinical postings and appeared for the examinations. Most of the students needed teaching packages for Anatomy and other subjects in Basic Sciences during

the clinical posting of the curriculum. There was a difference in the two groups, and they concluded vertical integration of anatomy through teaching packages which are clinically focused was welcomed by the group of students as part of their clinical postings (Dawson et al., 2009).

Banda (2009) proposed a composite index, which incorporated the considerations of anatomical knowledge for evaluating clinical cases and conditions suitable for case-based anatomy teaching. The modified Guttman procedure was used to determine the development of the case anatomical knowledge index (CAKI). By using the coefficient of reproducibility, the scalability of the index was measured. Forty-seven clinicians participated in the activities that measured inter-rater and interclass reliability. The findings on the depth and scope of anatomy learning in case-based teaching have really international relevance. As a result, the Case Anatomical Knowledge Index (CAKI) was used to evaluate anatomy content in clinical cases (Banda, 2009). In order to facilitate learning through implementing various teaching techniques, it was aimed to understand the relevance of basic science knowledge in determining the assessment of the patient by establishing the diagnosis and by putting the patient on treatment. One such method is problem-based learning (PBL). It is facilitated by small group discussion, which is a significant challenge for the faculty. It is also through a tutorial programme which is guided through an enquiry process wherein clinical skills and information from basic sciences are combined (DiLullo, Morris & Kriebel, 2009).

Bergman et al. (2008) did a study by using a phenomenographical approach. 78 students from the second to sixth years of the PBL Curriculum took part in this study. Each group met twice, and each meeting was recorded and transcribed verbatim. There was a merging of five major groups. They were: 1) motivation to study anatomy; 2) the relevance of anatomical knowledge; 3) assessment of anatomical knowledge; and 4) students' (in) security about their anatomical knowledge. 5) the application of anatomical knowledge in clinical practice. They came to the conclusion that the PBL approach was not enough to ensure adequate learning of anatomy.

Teaching of Anatomy:

Innovation in teaching and in assessment like spiral curriculum, teaching in context, teaching for transfer, and assessment for learning are required to improve teaching of anatomy.

Anatomy and physiology are basic medical subjects taught in colleges, universities, and medical schools. But students are of the opinion that anatomy is endless memorization. This misperception has made the students approach the subject with the wrong attitude. But we, the educators, should educate and make them understand that success depends on learning the concepts rather than memorising the subject. It is our duty as teachers or educators that we have to create an interest in their minds towards the subjects. It is of great benefit for medical students and professors when they take Anatomy, Histology, and Physiology courses at the undergraduate level (Miller et al., 2002).

The present study has dealt with the importance of anatomy at graduate level in the clinical side, especially during the bedside clinic as well as examining the clinical cases in the wards. Later, the use of anatomical knowledge in their clinical practice By knowing the basics

of anatomy, they can build a strong career with sound knowledge of anatomy. It is our duty to have to create an interest in the minds of students in the subjects of basic sciences like anatomy, histology, and physiology and remove the wrong perception that anatomy is a memorising subject as per the opinion of Miller et al. (2002). The new concepts of teaching for transfer and assessment for learning will definitely improve anatomical teaching. To facilitate the learning of basic science knowledge, Problem-Based Learning [PBL], small group discussion and through tutorial programmes with a combination of clinical skills will improve the quality of learning. Applications of the different methods of teaching, like demonstrations of parts, specimens through plastinated specimens, through cyber anatomy, embryology through models and charts, will improve the knowledge of anatomy because seeing is believing. Also, showing short 3D or 4D films on developmental anatomy is one of the best ways of teaching. This will help them to establish a correct diagnosis of the patient and put them on the correct treatment. Thus, teaching anatomy to clinical students will prepare them to be excellent physicians, surgeons, orthopaedic surgeons, and so on.

Conclusion

Encouraging clinical students at undergraduate level to study anatomy and assessing their anatomical knowledge and use of their anatomical knowledge in clinical practise will make their career stronger and more successful.

Implementation of a short course of anatomy for the clinical students helps to improve their knowledge of anatomy and make a correct diagnosis. However, the use of anatomical knowledge in clinical practise increases the quality of the individual to become a very good clinician and makes society a health society.

Conflict of Interest

The authors declare that they have no conflict of interest.

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