

EDITORIAL

The teaching of anatomy in the modern world – The role of human cadaveric dissection

The teaching of anatomy has long been the core of medical education throughout the world. A comprehensive knowledge of anatomy is crucial in better understanding of pathology and physiology. This results in safer and better clinical performance.

Human cadaveric dissection (dissection) is a traditional component of anatomy teaching. The dissection has been practiced as a key method of studying and teaching anatomy since the ancient days. Herophilus and Erasistratus practiced dissection for the first time in the 3rd century BC at the Greek school of medicine in Alexandria. Herophilus and Erasistratus performed the dissection on executed prisoners. But, following their deaths, the practice of dissection gradually diminished. After that there was a dark period for dissection because it was prohibited by the religion. However the church permitted dissection in the 13th century for the development of anatomy and science. Following that, the dissection was declared official in the 14th century (in 1340) in Montpellier, France (1). Since that time, dissection has been the foundation of human anatomy education.

Dissection has numerous benefits for students. The dissection promotes respect to the death and the living among the students. It also encourages interpersonal skills and teamwork. For the students, teamwork is a vital ability for their future careers. Dissection also teaches students to appreciate the tactile perception of

tissues and increases three-dimensional perception. Furthermore, several studies conducted among medical students revealed that medical students regard dissection as a vital tool for learning and they like the dissection process. (2). Studies have also demonstrated that teaching using dissection produces better learning outcomes in students (3).

Traditional anatomy teaching was with dissection, lectures and tutorials. In Sri Lanka, dissection remains as the primary method of anatomy teaching. However there are problems associated with this type of traditional anatomy teaching. Trained personnel are required for dissection-based anatomy teaching. Some major issues with traditional anatomy teaching are a lack of anatomists, a lack of cadavers (in other parts of the world), and the number of teaching hours required.

However the method of teaching anatomy has changed overtime. The alternative teaching methods adopted in other parts of the world include; pre dissected cadaveric specimens (prosections), plastinated specimens, plastic models (4), computer based system learning (virtual dissection table) (5), etc. Furthermore, due to current curriculum revisions and the promotion of student-cantered learning, various teaching methods such as peer teaching, computer-based learning, learning through videos, and simulations have been introduced. (6).

The number of anatomy teaching hours and the amount of anatomy taught are rapidly decreasing globally due to the addition of additional specialties to the medical curriculum and the promotion of student-centered learning approaches. (7), (8). In Sri Lanka the number of hours allocated to the teaching of anatomy varies between the faculties from 483 to 733 hours (9). The notable thing in this is that faculties which were established recently allocated more time for anatomy teaching. Another factor is that the amount of anatomy teaching hours is reducing with curriculum revisions (9). For example, after such a curriculum revision at one of Sri Lanka's universities, the anatomy curriculum was reduced by 25.5% (9).

There is also a global lack of anatomists. This reduces the number of medical schools that have dissection (10). Furthermore, according to a circular issued by the University Grants Commission in 2019, the approved norm for a faculty's student: teaching staff ratio is 7:1 (11). However, many faculties do not have enough staff to meet this ratio. (9). In various regions of the world, the availability of human cadavers is also a difficulty (10). However due to the culture, there are adequate cadaver donations to medical institutions in Sri Lanka. (12).

Anatomy teachers have expressed concern about the reduction of anatomy teaching hours and dissection hours, which has resulted in students having lesser knowledge of anatomy. They reported that new surgical trainees who studied the revised curriculum as medical students (reduced dissection time curriculum) required additional anatomy teaching. (13).

Therefore we should continue the traditional dissection with explanations provided by a staff frequently. This combination is shown to improve the understanding of anatomy by the students (14). It has been shown that students also like the traditional way of dissection to learn anatomy.

Taking into account all of the factors. Dissection should be continued as a major component of anatomy education in the future. Because this forms the cornerstone of anatomy teaching. The teaching hours of anatomy should not be reduced significantly in the new curricula. Because the dissection teaches them the fundamentals of human structure, human pathology and physiology. This results in more effective application of their knowledge as doctors, particularly surgeons. As Robert Liston once said that “the foundation of the study of the art of operating must be laid in the dissecting room”.

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