

Letter – Education in anatomy and embryology

## Dissection and demonstration by anatomists: back to good old days

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The practice of the anatomist himself dissecting the human body and demonstrating the details to the students was prevalent in the European universities during the Renaissance (Ghosh, 2015). The great Paduan anatomist, Andreas Vesalius (1514-1564) was a pioneer in this method of teaching as he displayed his exceptional dissection skills to the students during anatomical sessions (Goodrich, 1982). Later on, accomplished anatomists like Hieronymus Fabricius ab Acquapendente (1533-1619), Johann Vesling (1598-1649), Bernhard Siegfried Albinus (1697-1770), William Hunter (1718-1783) and many others followed the same tradition while teaching in the dissection lab (Mavrodi et al., 2013). Their efforts were instrumental in human cadaveric dissection achieving the central role in medical training and research in those days.

Human cadaveric dissection has been the primary medium of teaching gross anatomy to medical students for centuries, however in recent times teaching anatomy by dissection no longer commands the same number of class hours as it once did as more and more educational material is being inducted into medical school curricula over the past few decades (Ramsey-Stewart et al., 2010). Nevertheless human dissection remains the primary means of delivering fundamental regional, relational and topographical anatomical knowledge in medical schools of India (Ghosh and Sharma, 2015). In accordance with the undergraduate medical education curriculum in India, human cadaveric dissection constitutes a significant part of the teaching hours during the first two semesters. The prevalent trend in most of the medical schools in India is to allow the students to dissect by themselves and consult the anatomist (faculty members) present in the dissection lab as and when required (Holla et al., 2009). The students are required to follow an authentic text, which is usually Cunningham's manual of practical anatomy, which acts as a guide while undertaking dissection. Such a practice is based on the hypothesis that it would assist the students to learn and retain the details of gross anatomy. However this method of teaching in the dissection lab is associated with some major drawbacks as experienced by us

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while working in medical schools prior to our present assignment. The use of dissecting instruments requires a certain degree of control and precision which is obviously lacking in first year medical students.

Moreover during deep dissection, meticulous removal of fatty tissue is required to clean the dissected area and thereby expose the structures in order to visualize the anatomical details. Above all a precise anatomical knowledge concerning the area to be dissected is necessary prior to undertaking the procedure. Consequent upon all these, asking the students to dissect a human body from the onset of their medical career results in an unclean dissection field with possible damage to anatomical structures, which makes identification difficult and eventually leads to wastage of precious human tissues.

The medical school where we are working at present is relatively new and undergraduate medical teaching started a couple of years ago. In order to overcome the shortcomings as listed above, we have been undertaking the dissection ourselves and demonstrating the structures to the students as we proceed. At the onset of the class, we explain to the students how we would proceed with the dissection and what are the structures we expect to come across during the course of dissection. We ensure that each and every step of dissection from skin incision to exposing the deeper structures is performed in front of the students. The dissection is deliberately undertaken at a slow pace so as to allow the students to follow the procedure in details and if required they may clarify their queries with the anatomist. From experience we have learnt that we need to keep interacting with the students during the entire duration of the session to keep them involved in the learning process. At the end of the session, we summarize to the students the entire exercise we have undertaken for the day.

The students have been responding positively to our endeavor and this has reflected in their grades during periodical as well as summative assessments. As anatomists we feel satisfied that we have been contributing to teaching in the dissection lab in an active manner by utilizing our dissection skills. Moreover dissected specimens prepared during these sessions have strengthened the anatomical museum of our institution. It was a privilege to follow the footsteps of our illustrious predecessors in the field of anatomy with regards to teaching anatomy in the dissection lab and based on our experiences we may humbly suggest that at times it pays to turn the clock back to good old times.

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