Focusing Student Learning During Anatomy Laboratory Sessions: Five Big Takeaways

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Background

In an environment characterized by limited time for teaching anatomy, in which cadaver dissection is retained, questions such as what content can be eliminated without ill effect on subsequent learning and how best to emphasize the importance of retained course material must be answered. We describe here an effort to highlight specific content to be considered during each laboratory session because of its clinical importance and as a framework and foundation for future learning. This method, referred to as the *Five Big Takeaways*, is presented to the class as a whole during the first five minutes of each laboratory session.

Block II Anatomy
Week 2

The Five Big Takeaways

- Example from Week 2 of the Cardiothoracic/Pulmonary Block -

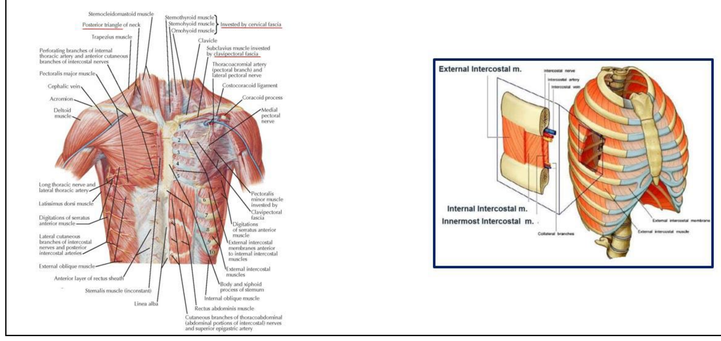
Introduction

Human anatomy is one of the foundational disciplines upon which the practice of medicine is founded. For over 150 years, students have been aided in their efforts to learn anatomy by means of dissection activities with human cadaveric material. A primary cognitive objective of cadaveric dissection has been to provide the student with an authentic, three-dimensional, visual and tactile experience of the human body. Additional benefits include an appreciation of anatomical variation in its many forms.

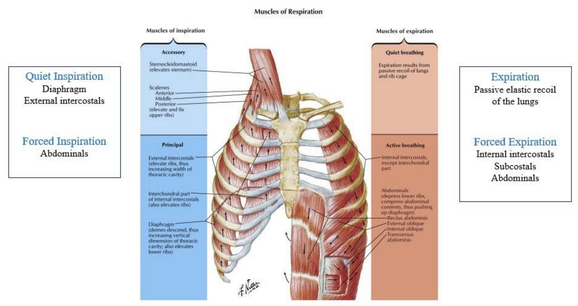
Over the past several decades curricular time dedicated to the basic medical sciences has been steadily decreasing. For anatomy, this reduction has come largely at the expense of dissection time, in part because of the time-consuming nature of this teaching approach and also the greatly reduced number of faculty competently trained and available to teach anatomy using cadaveric material. Questions such as what content areas and topics can be reduced in scope or eliminated and how best to increase efficiency in dissection tasks, are being asked and need to be addressed in a way that ensure student success at later points in the curriculum when knowledge of anatomy becomes critical.

In an effort to provide additional focus and emphasis on structures and relationships being dissected during each laboratory session, we developed a series of brief presentations referred to as the *Five Big Takeaways*, delivered at the beginning of each laboratory dissection session. Each takeaway focuses on a particular anatomical structure or relationship considered during that laboratory session that will be important at a later time when performing or interpreting findings elicited on the physical examination or in performing fundamental interventional procedures (e.g., aspirating fluid). The takeaways are intended to emphasize the sometimes, critical importance of anatomy in medical practice.

1 – The Thoracic Wall
- Dr. McNamara's Lecture -

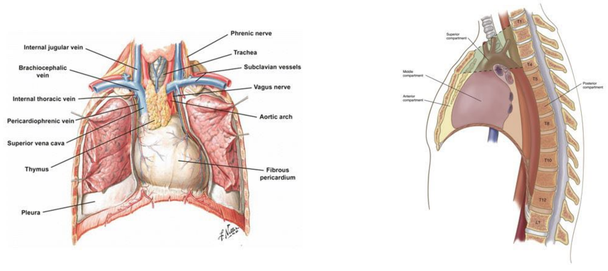


2 – Muscles of Respiration
- Dr. McNamara's Lecture -

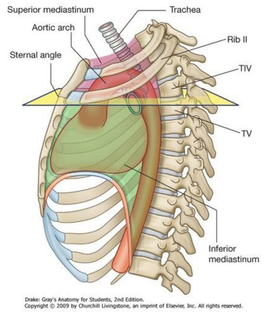


Essentially any muscle attaching to the ribs is an accessory breathing muscle.

3 – The Mediastinum
- Dr. McNamara's Lecture -

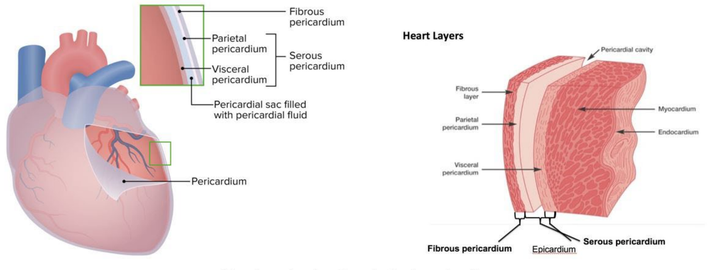


4 – The Superior Mediastinum
- Dr. Nolan's Lecture -



Superior Mediastinum
- Arch of the aorta and its branches
- SVC and its tributaries
- Nerves – vagus and phrenic, the cardiac plexuses and the sympathetic trunk
- Thymus gland
- Trachea
- Esophagus
- Thoracic duct
- Muscles – some infrahyoid and the origin of the longus colli

5 – The Pericardium



The visceral pericardium is aka the epicardium.

Results & Observations

Student comments elicited on the end of course evaluation are overall favorable. Students appreciated faculty efforts to make clear the importance of anatomy in the practice of medicine. Interactions occurring at the dissection table were often driven by student interest in further discussion of the takeaway material, and while these questions were typically raised by those in the group not directly involved in the dissection tasks (i.e., the reader and the researcher), all students in the group benefited by the discussions among the students and the faculty. We are gratified by the student response to this new addition to our laboratory dissection sessions that adds clinical relevance to our preclinical anatomy course and intend to further develop this valuable learning activity.

Discussion & Conclusion

Curricular reform in medical education is an ongoing process driven by the need to adequately prepare students for success in various clinical settings, including residency training programs. Reform efforts attempt to create a balance between the desire to add new, contemporary content with the necessity of retaining essential, foundational information such as anatomy.

The basic sciences in general, and anatomy in particular, have been characterized by a reduction in scheduled class time for direct interaction between teacher and student. In an effort to place special emphasis on important topics to be considered during each laboratory dissection session, we implemented a brief discussion of five "high value" selected topics at the beginning of each laboratory. We refer to these faculty presentations as our "*Five Big Takeaways*". Students have expressed their appreciation of our efforts in helping to manage a challenging academic workload by focusing voluminous content on absolutely essential material that must be mastered.

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