Enhancing First Year Curricular Anatomy Education

Raimel Brooks, Elena Stark
David Geffen School of Medicine, University of California, Los Angeles
Department of Pathology and Laboratory Medicine

INTRODUCTION

Recently many medical schools have updated their curriculum to a 1.0 -1.5 year preclinical course. As a result, several topics and concepts have had to be condensed/ fast-tracked, including those within anatomy. Thus, there has been much development and discussion of best teaching practices within medical education. Through the development of relevant clinical vignettes and assessment, this project's aim is to aid medical students to apply anatomy topics to their clinical training within the first year of medical school.

METHODS

Focus:

- This project was a new lab activity with the goal of aiding medical students build bridges between foundational anatomy knowledge and clinical application using interactive activities and models to structures that they learned only minutes prior, within the lab.
- The lab that was targeted taught the anterior triangle of the neck (ATN) and face.

Question-based Learning:

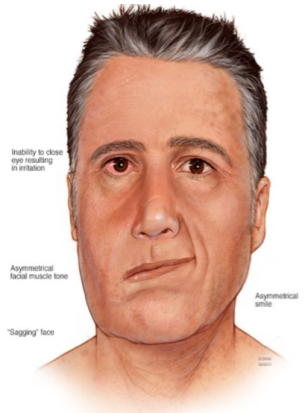
- Part of the activities included board-style (STEP1) questions that applied ATN anatomy.

Vignettes:

- Clinical vignettes were assembled with applied anatomy from the lab. In a team-based activity, students were instructed to complete the vignettes and apply the concepts of the new anatomy.

DESIGN

Vignette 1: Patient presents as follows: read 5 PE findings below.



Q1. What facial muscles are likely affected? Find those at the cadaver/face model and list them here: _____

_____

Q2. What nerve innervates muscles of facial expression?_____

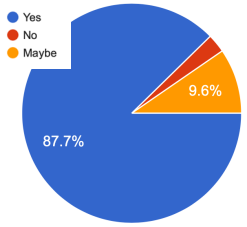
Q3. List a possible cause of damage to this nerve _____

Q4. This nerve exits the skull through _____ (foramen). A narrowing of this foramen could also be the cause of this condition. Get a skull and find this foramen. What bone is it in? _____

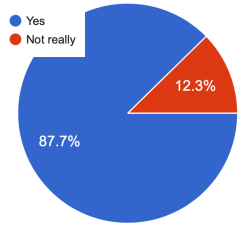
Q5. This nerve courses through the substance of a gland. Look at the cadaver and find the largest salivary gland anterior to the external ear. What gland is it?_____

Q5. What is this condition called? _____

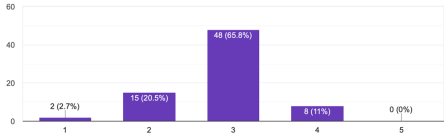
IMPACT/FEEDBACK



Do you think an activity like today's helps to internalize relevant anatomical structures?



Did today's clinical application activity motivate you to learn the structures on the ID list?



On a scale of 1 (too easy) to 5 (hard to follow), how difficult did you find the clinical concepts in the activity?

Free Text Submission

- "Wow the activity was greatttttt!!! Grateful to the TAs that helped put things together <3"
- ***"I like both the clinical activity and the practical style questions but both in one day is a lot! Maybe could alternate"
- "It was excellent. You should definitely incorporate it more next year."
- "Fantastic session. Very immersive and allowed us to understand the concepts from many angles and contexts. Left understanding more material than most previous anatomy sessions"
- "It brought us together to work as a group and made learning more fun"
- **Good activity but just a lot for 1 session. Felt like I didn't have enough time to focus on each task."

Students were asked to fill out a questionnaire after the lab to elicit feedback about the activity. About 90% of students stated the clinical application helped them to learn structures on their ID list (a compiled list of anatomical structures to be identified per week of lab). Free text submissions were useful to clarify the 10% of "may be" and "no" responses (left) as most students in this small group stated that while the activity was worthwhile, the limitation of lab time was an issue since the activity was in addition to other lab requirements that day (embryology, quiz at the cadavers etc).

DISCUSSION

Summary

- In our opinion, clinical modules are a great way to supplement instruction of anatomy lab.
- Vast majority of students surveyed were satisfied with the activity, showing enhancement in both motivation and understanding; of those with alternate satisfaction, critiques were aimed at lab timing, not the new activity.

Lessons Learned

- More consideration should have been taken for time allotted/ other activities during lab. Students reported feeling pressured for time to complete the new activity as well as embryology and the lab quiz.

Positive Aspects of the study

- Special consideration was made regarding the level of difficulty of the vignettes given the novice level of 1st year students.
- Considerations for learning styles/speed of individual students were deemed successful (i.e. visual aids and supporting documents)

Future Direction

- Future studies could assess retention/level of comfort for these students during clinical/surgical cases while on the wards the following year

REFERENCES

1. Hansen, John T.,, et al. *Netter's Clinical Anatomy.* 4th edition. Philadelphia, PA, Elsevier, 2019.
2. Moore, Keith L.,, et al. *Essential Clinical Anatomy.* Fifth edition. Philadelphia, Wolters Kluwer Health, 2015.