

Redeeming of Dissection an Evolving a Strategy to Bring in Objectivity and Uniformity in Practical Examination in Anatomy

Sushil Kumar*, R.K. Zargar**

Abstract

With technical advancements, there is a distant possibility of doing away with dissection. This would adversely affect the conduction of practical examination.

The faculty aims to make the students

- Enthusiastically participate in dissection
- Comprehend the anatomical facts
- Grasp its clinical bearing.

Each day there is opportunity to lay the foundation of a sound understanding based on stimulating interaction. Besides being facilitator and editor, an anatomist has to inspire the students to reach their potential.

To redeem the importance of dissection, make it more purposeful and edit it to highlight clinical relevance, it is essential to test the students often. The reasons and gain of these tests should accord objectivity and uniformity to be convincing and compelling for acceptance by the teacher and the taught.

How Do We Make It Happen?

These tests have to be structured to make the student see the purpose of each dissection schedule. The methodology to evolve these tests is to be based on the premise that an examiner should judge whether the candidate is able to:

1. Identify the structure pointed at.
2. Seek and show the structures related to the main structure.
3. Demonstrate the pertaining anatomical facts.
4. Explain the pertinent clinical bearing.

Further, to evaluate if the candidate's ability is barely adequate to pass or he is inquisitive and knows more.

The scope of incorporating all the dissection schedules for university examination, its impact on the students and the feasibility of subjecting other heads of practical examination to this structured methodology is to be presented and discussed.

Keywords: Redeeming; Dissection; Anatomy; Practical examination.

Introduction

Author's Affiliation: *Professor, **Ex Professor & Head, Department of Anatomy, Armed Forces Medical College, Pune-411040.

Reprint's Request: Dr. Col. Sushil Kumar, MS (Anatomy), Professor, Department of Anatomy, Armed Forces Medical College, Pune-411040.

E-mail: drsushilkumar@rediffmail.com

The academics of a medical student commence with dissection of the cadaver. For generations, dissection has been practiced on scores of cadavers. With the paucity of cadavers and technological advancement, the utility of dissection has generated discussions

more so in the recent past.[1-4]

The views on continuation of practice of dissection for and against are substantiated by their proponents rather convincingly. There, the point missed out is the after math of learning anatomy without dissection. These include, amongst other things, the subtle points/issues that would have immediate and long-term impact on medical education. These are:

- Missing the feel of the structures.
- Absence of evidence to develop imagination.
- Inadequate opportunity to evolve reasoning.
- Little scope to hone communication skill.
- No chance to strengthen camaraderie,
- Lose on stepping on the threshold that leads to one's own potential.

The expanse of practical exam is fairly wide and within the time constrain the examiner is compelled to be sketchy. From a student's perspective, it would be an insipid experience and for life long, Anatomy fails to draw interest. The epicenter of this impending catastrophe is the possibility that defies the very meaning of Anatomy i.e. doing away with dissection.

So how do we redeem dissection? Thankfully, it is not difficult. We don't need the infamous grave diggers. It is attainable by evolving a strategy that would bring in objectivity and uniformity in practical examination in Anatomy. This in turn would make dissection indispensable.

Methodology

The faculty in Anatomy in any institute strives to make the students enthusiastically participate in the dissection, comprehend & communicate the anatomical facts and grasp the clinical bearing of the part under dissection. This requires to be put to practice vigorously. This is aimed to be achieved by -

1. Organizing the dissection of the entire cadaver into 90 schedules.
2. In each schedule, every step of dissection is well defined. The anatomical structures and their relevance is grouped as core areas of learning.
3. After the dissection of a group of schedules is over, the faculty conducts the tests in a structured format.
4. The structured format for conducting the exam includes four parameters prepared on cards. The parameters are evolved on the premise that the examiner conducts the test to evaluate by asking the student to:
 - I Identify the structures.
 - II Seek and show the structures dissected.
 - III Demonstrate the pertaining anatomical facts
 - IV Explain the pertinent clinical bearing of the part under dissection.
 - Three sets of card are made for each dissection schedule.
 - The three sets are given numbers to segregate them as
 - I Identity, Seek and show
 - II Demonstrate & Explain
 - III Mention clinical relevance
 - Each set enlists structures/ statements.
 - Where ever required, these structures/ statements are grouped into Level I, II & III (core areas of learning)
 - Color code is applied for each region.
5. Further, to quantify, the examiner evaluates if the candidate's ability is barely adequate to pass or he is inquisitive, knows better and deserves more marks.
6. Before a candidate approaches the station where the examination parts are laid, he/she is asked to pick up one card each from the four sets i.e., I, II, III & IV.

7. As his/her turn comes he/she submits the card to the examiner who asks questions sequentially from card I then II and so on.
 8. The examiner awards one mark for a correct answer and zero for incorrect answer.
 9. To a better student, the examiner raises the level of question and marks accordingly.
 10. After the student finishes the station, the examiner puts back the four cards in their respective sets.
 11. Once all the cards are collected back from the candidates, these are put back for the next bunch of students.
6. There is steady improvement in communication, more so in students from vernacular back ground.
 7. The effort to structure the soft part examination into 4 sets i.e. Identity, Seek & show, Demonstrate and Explain has yielded good response. It has prompted us to apply the same methodology for framing the questionnaire for other stations of practical examination i.e. Osteology, Histology, Living Anatomy and Radiology.

Observations

In our institute, the students were subjected to few tests. The students' performance was not quantified as the marking pattern is to be further evolved on the basis of core areas of learning. However, the following was observed:

1. The tabulated learning objectives for the dissection during the week were put up on the notice board.
2. As the test is conducted on a limited portion covered in the preceding week, the student can gauge his/her own performance vis-à-vis the efforts put in the dissection hall during the week. The students started taking active part in dissection.
3. It gives the student an impetus to do better in the next test. The under achievers started asserting themselves.
4. The student's efforts are guided by the desire to do well for which he/she is compelled to participate in every day's dissection. Outcome of each dissection were neat and better exposed structures.
5. Each dissection becomes purposeful. The keen ness to learn about the clinical aspect is the driving force to enter the dissection hall with enthusiasm and meet the

Discussion

The learning of anatomy is based on regional dissection. With the compression of I MBBS from 18 months to 12 months, the time allocated to dissection is considered wasteful. The paucity of cadavers is also weighing against the practice of dissection. The students' participation and the faculty's interest get affected as confusion prevails due to lack of time. Further, the clinical relevance is compelling to edit dissection and make it more purposeful.

Various workers have tried and tested methods that inadvertently attempt to redeem dissection.

1. *Edit to Make it Well Defined, Need Based and Suiting a Time Frame*

The present study commenced with preparation of ninety structured dissection schedules, that was published as a book.[5]

The anatomy faculty at the University of North Texas Health Science Centre (UNTHSC) have developed a computer - based dissection manual to adjust to their curricular changes and time constraints. Although they place a high priority on computerization on the anatomy laboratory, they remain strong advocates of the importance of cadaver dissection. They believe that the utilization of

computers for dissection is a natural evolution of technology and fosters, creative teaching strategies adapted for anatomy laboratories in the 21st century.[3] It is felt that the need and time constrain would compell committed anatomists to take up restructuring their respective dissection manuals.

2. *Generate Interest and Enthusiasm in the Students*

This is dependent on teaching in the dissection hall and conducting tests, Faculty participation in the dissection hall teaching remains the corner stone of learning anatomy. Ellis (2001) emphasizes the teaching in the dissecting room. The time constraint has compelled the traditional teacher “only teach anatomy that is going to be clinically relevant to them in their subsequent practice”. [2] Likewise McGarvey *et al* (2001) hold dissection as a positive experience and towards this they have prepared strategies that cope up with the stress in the dissection hall.[1]

The dissection room teaching has to be complimented by structured tests. These would make the student focused for learning and enthusiastically participate in dissection. Towards this Chakravarty *et al* (2005) have recommended assessment of anatomy in a problem-based-medical curriculum.[6] This is in practice at Arabian Gulf University (AGU) where problem based curriculum has been implemented since 1982. They have used several methods to assess the different domains of learning i.e. knowledge, skill and attitudes. They have devised for their curriculum multiple-choice questions, patient management problems and objective structured practical examination. They acknowledge that training should be based on “applying processes of reasoning than by memorizing of the facts”. In our experience enthusiastic table teaching motivates, interests and inspires the undergraduates. The impact of this is immediately seen after the tests are held. The credibility of these tests depends on the objectivity achieved and its bearing in the

final assessment of the student. This necessitated designing the test for testing the comprehension rather than memorization of the facts. The efforts put in to frame these structured tests have brought in objectivity and uniformity – a fact appreciated by the students who like questions to be asked to all the students from the same set. Hopefully these tests when implemented at the university level would curtail the hither to practice where there is very little objectivity and uniformity and the student are at the whims and mercy of the examiner.

By following the methodology framed the author believes that the expected outcome would account for:

1. Pruning the entire body dissection into required number of compact dissection schedules.
2. Each schedule to have specific learning objectives for the students.
3. The students get focused. The outcome of each dissection is better and the condition of the part under dissection improves. This is so because students realize the worth of the cadaver.
4. The dissection hall is abuzz with animated discussion generated from genuine interest taken by the students.
5. The sequential tests compell the students to be regular. This regularity and learning with a reason raises the comfort level of each student.
6. The out line of the structured questionnaire brings in objectivity and uniformity in the tests.
7. Anatomy no longer remains a dreaded subject. Cadaver regains the status of the “best teacher” and every Anatomist restores the pride amongst the medical fraternity.
8. Applying the same methodology on the other components of the subject is bound to show marked improvement in the approach of the student.

Summary & Conclusion

The threat to wreck havoc on the very edifice of medical education is to be countered by making dissection indispensable. It is to be achieved by following a planned strategy that makes the student realize the importance of dissection.

To redeem the dissection, it is devised to conduct regular tests on the part under dissection. Each test to be structured under specific learning objectives.

Over the years, each institution/university would modify, change and evolve a pattern that would bring in objectivity and retain uniformity in the examination.

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