

Original Article

Perceptions of students on dissection after an exposure to prosections

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Abstract

Back ground: Presently, teaching-learning in Anatomy in adverse conditions of short duration and scarcity of cadavers, is to be addressed. **Aim:** To drive the students towards self learning. **Objectives:** To improve applied anatomy during dissection and evaluate students' perception on the usefulness of prosections prior to dissections. **Materials & Methods:** During lower limb dissection, prosections were displayed and demonstrated before dissection. After completion of the lower limb, the feedback questionnaire was answered by 250 students. **Results:** 60-70% of students opined that ease, quality & 3-D orientation of dissection is very good. 84-86% of students rated that retention of information, drive for self study & ease to face practical exam as good to very good. **Conclusion:** Understanding a 3- dimensional concept soon after theory class is difficult, but prosections before dissection creates interest and improves self-learning.

Keywords: Dissection, Prosections, Self-learning

Introduction

Human anatomy is a complex 3-dimensional study and dissection has been the best means to teach¹. In recent times, scarcity of cadavers led to teaching with prosections. Few studies tried to prove, students learn equally from prosections as much as from dissection.^{2,3,4,5}

In India, the Anatomy course is reduced from 1½ to 1 year, with syllabus remaining the same. This means dissection has to progress quicker. Moreover, "identifying structure in prosection", is now a part of examination. To facilitate learning in shorter time, students are first taught on prosection and then dissection. This enables easy and quick understanding of the anatomical relations. Moreover it is affordable.

Materials & Methods:

The study was undertaken in Maharajah's Institute of Medical Sciences, Nellimarla, Andhra Pradesh. Following ethical clearance, an analytical cross-sectional study of 150 students of Anatomy 2014-15 batch & 100 students of 2015-2016 batch were chosen. The upper limb anatomy was taught by dissection only. For the lower limb, the students were made to go through prosections before

dissection. After completion of the lower limb, feedback was asked by a questionnaire, to be answered on 5-point Likert scale.

Statistical Analysis:

The data obtained from feedback questionnaire was compiled and analyzed manually by frequency analysis & represented in bar diagram using excel sheet.

Results

The data collected from 250 students are shown below.

	Very poor	poor	Average	Good	Very Good
Dissection made easy	0%	4%	16%	20%	60%
Quality of dissection	5%	7%	11%	15%	62%
Saving time during dissection	2%	4%	8%	16%	70%
Ease of orientation (3 dimensional visualization)	0%	4%	11%	24 %	61%
Comfort level	4%	7%	13%	50%	26%
Retention of information	2%	4%	8%	66%	20%
Drive to self study	2%	4%	8%	56%	30%
Ease to face practical exam	0%	4%	11%	54 %	31%

Table 1: Data from students

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60% of students felt dissection easy (very good) after exposure of prosections, and only 4% experienced difficulty (Fig 1). 5% of students felt that there is no improvement in the quality of dissection even after exposure to prosections (Fig 1). 70% of students were able to do dissection fast and save time (Fig 1)

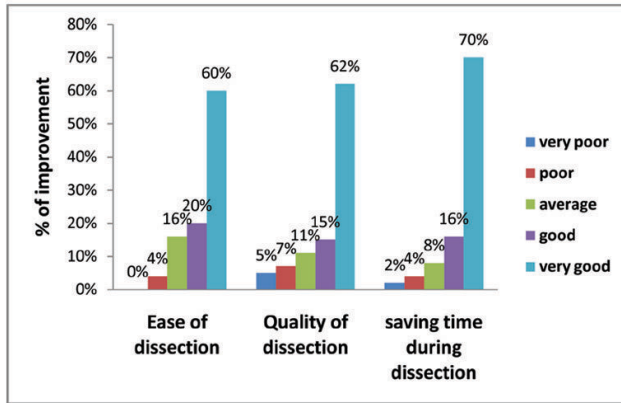


Figure 1: Relative percentage of improvement in ease, quality & saving time

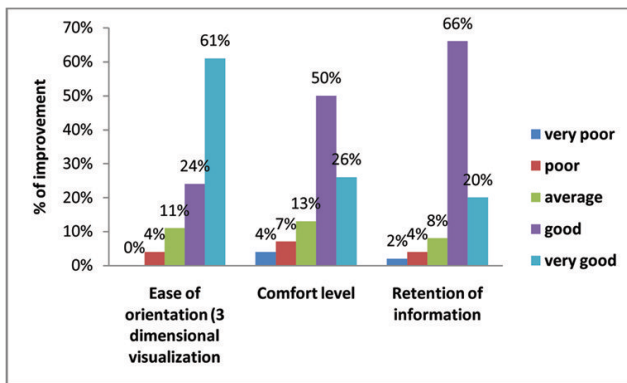


Figure 2: Improvement in ease of orientation, comfort level & retention of information.

None of the students reported difficulty in having 3 dimensional orientation about their scheduled dissection. Only 50% of students felt comfortable during this exercise, but for 66% of students retention of information is good (Fig 2).

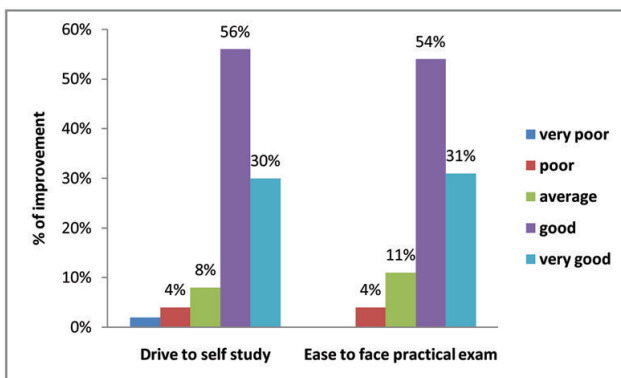


Figure 3: Improvement in drive to self study & ease to face practical examination

Drive to self study is good for 56% of students & very good for 30% of students. The ease to face practical exam is good for 54% of students & very good for 31% of students (Fig 3)

Discussion

Dissection defines anatomy and helps students learn essential surgical skills. Historically, dissection has been the gold standard for teaching. According to S K Nagar et al⁶, the best method of learning anatomy is dissection. Efficiency increased with supportive aids like plastinations and computer-aided technology⁷. Despite new aids like 3-D videos, internet, computer aided modules which are freely available, Lynn Ashdown study⁸ proved that the students exposed to prosections showed best results than the control group. In India, scarcity of cadavers has led to crowding of students at dissection table. The study of human anatomy is concerned with not only learning individual structures but also learning the spatial relationships that exist between those structures. Students must be able to visualize this 3D organization in their mind to fully understand the workings of and relationships that exist within the human body⁹. As Jacobus Sylvius¹⁰(1555) remarked in his *Manual of Anatomy*: “For my judgment is that it is much better that you should learn the manner of cutting by eye and touch than by reading and listening. For reading alone never taught anyone how to sail a ship, to lead an army, nor to compound a medicine, which is done rather by the use of one’s own sight and the training of one’s own hands.” The results of the literature reviewed⁶ indicated that the concurrent use of multiple methods of teaching was the most efficient and beneficial way to learn Gross Anatomy. Literature⁸ suggests that dissection appears to offer benefits to students concerning their attitude towards death and the development of clinically relevant visuo-spatial abilities and procedural skills. Study by H. K. Lempp¹¹ highlights the fact that dissection can impart anatomical knowledge as well as offer other relevant, positive learning opportunities to enhance the skills and attitudes of future doctors. VL Yeager¹² concluded that there is a small advantage gained from dissecting and demonstrating to their peers, but that learning from dissected cadavers is a satisfactory method of study. LS Jones¹³ study concluded, to encourage curriculum design that explores additional mechanisms of study to reduce the students’ dissection time while increasing their time spent in actual study. JO Nnodim⁵,

stated that the students who dissected cadavers are not superior to the students who studied with prosections. With a view to save time, few educational strategies suited for adult learning may be adopted, like Self-directed learning, Problem-based learning (PBL) & Integrated learning. Teachers and curriculum setters should make attempts to bring reform of teaching anatomy using prosections in the dissection hall.

Conclusions

60-70% of students opined that ease, quality & 3-D orientation of dissection is very good. 84-86% students rated retention of information, drive for self study & ease to face practical exam as good to very good.

To have a 3-dimensional orientation after attending theory class & reading is time consuming, but the exposure to prosections before dissection drives the students towards self-learning and reduce the guessing factor. Concurrent usage of prosections plays a major role to inculcate and develop surgical orientation during dissection.

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