



## SAFETY AND ETHICAL ASPECT OF CADAVERIC DISSECTIONS

<sup>1</sup>Dr. Sharadkumar Pralhad Sawant and <sup>2</sup>Dr. Shaheen Rizvi

<sup>1</sup>Professor and Head. <sup>2</sup>Asst Lecturer, Department of Anatomy, K. J. Somaiya Medical College, Somaiya Ayurvihar, Eastern Express Highway, Sion, Mumbai-400 022. Corresponding author E-mail: drspsawant@gmail.com, Telephone no: 9322061220, 022-22936867 Fax no. : 022 – 2409 1855.

**ABSTRACT:** It is an established fact that students learn Anatomy from the dead. Cadaver dissection is present since the time of Vesalius, where there was a physician-teacher performing dissection in the theatre surrounded by the students. Dissection of the human body has been globally considered a time honoured and an essential part of medical training for both undergraduate and postgraduate students as a part of learning human anatomy. It is designed to give medical students, a three dimensional view of the interior of the body. It is a known fact that a good medical or surgical practice can only be achieved, if the foundation on which it is based, is strong. This firm foundation comes from from learning human dissection. Thus dissection training has remained an important part of medical curriculum. Anatomy teaching in medical colleges has been traditionally based around the use of human cadaveric specimens, either taking the whole body specimens for complete dissection or as prosected specimens. But are the ethics of a dissection hall maintained by students and staff of Anatomy in medical colleges? This paper deals with safety and ethical issues of cadaver dissection by medical students.

**Keywords:** Anatomy, Cadaver, Medical Students, Dissection, Medical Curriculum, Ethics.

### INTRODUCTION

Anatomy is a rigorous course requiring great dedication and devotion. Cadavers are required for studying the human anatomy in all disciplines of medical science. As medical institutions are growing, the need for cadavers have also increased proportionately [1]. However, the use of human cadavers for teaching and training purposes is surrounded by ethical uncertainties. These ethical problems are recognized as one of the reasons for a large number of foreign universities planning to abandon anatomical dissections altogether [2, 3]. The students in India get enormous opportunities to dissect cadavers, as there is no dearth of cadavers due to voluntary donations as well as unclaimed cadavers.

### DISCUSSION

#### A. Ethics related to the Cadaver

##### 1. Respect for the deceased:

A person who donates his body willingly for the advancement of medical science has done so without anything to gain from it. The students don't know the name of the person they are dissecting, so in a sense it means that the person has given himself up for study without recognition. This is a quality which all medical students or would-be doctors should imbibe i.e. to give without recognition [4,5].

Hence, it is imperative that proper respect be paid to the cadaver at all times.

##### 2. Proper Care

The cadaver should be well preserved, by proper embalming and storage. If the cadaver dries or decays due to lack of proper care, it is like a selfless act of the donor going to waste. The cadaver should be kept moist at all times [6]. During dissection it should be draped and only the part being dissected should be left uncovered.

#### B. Ethics related to the Dissection Hall

##### 1. Dissection Hall Access

Ideally a dissection Hall should be accessible only to the staff of the department and to the students who are going to either carry out dissections or who are going to study the prosected parts. It should not be accessible to outsiders especially nonmedical persons [7].

### **2. Dissection Hall Dress:**

Embalming fluid should not come in contact with one's skin or clothing. Dress code in the dissection hall should be a full sleeved white apron, non-powdered latex gloves and a mask (optional). Aprons worn in the dissection Hall should not be used outside. Shoes should be closed, open toed shoes or sandals should not be worn. Contact lenses should be avoided as they can absorb chemical vapours [8].

### **3. Dissection Hall Safety:**

Cadavers harbour a multitude of organisms even after embalming. There is no definitive evidence to show that HIV is inactivated after embalming. Moreover, there is no system in practice to check the presence of these infections, either before or after the cadavers are embalmed. Against such a scenario, it is imperative that all persons handling cadavers follow universal precautions [9].

One of the basic precautionary measures one can take is the simple wearing of gloves, but sometimes students are prevented from doing so by senior faculty members who believe that students will be able to appreciate the feel of the various tissues and organs better with bare hands. Their point of view is baseless, because, as surgeons, these students will feel the same structures in live individuals in the operating theatre, only with gloved hands. So they're actually supposed to know how structures feel to gloved hands, not to bare hands. Not only do gloves help in warding off infections, they also protect the skin from the irritant effects of formalin used to preserve cadavers [10].

Moreover the instruments used by these students are never sterilised. They are simply washed with water at the end of each session. As students are handling sharp instruments for the first time, they are more prone to cuts and bruises. There is also a high probability of these medical students being infected by highly pathogenic organisms. Adding to the problem, there is not even a steam steriliser or an autoclave in most of the departments of anatomy, to sterilise the instruments used during dissection. In western countries, these precautionary measures are mandatory for everyone performing a cadaver dissection [11, 12, 13].

The regulatory bodies which approve the establishment of medical colleges in India, should include sterilisation equipment as a basic necessity in the departments of anatomy of medical colleges [14].

So, it is very unsafe and unethical to allow - and sometimes force - students to dissect cadavers with bare hands [15].

The principles of universal precautions will be hammered into young brains only if they are made to follow them and they will follow strict aseptic precautions while performing surgery or invasive procedures in patients [16].

### **4. Other precautionary measures:**

Only textbook and dissection manual should be allowed in the dissection hall. Bags should be kept in lockers. Food and drinks are not allowed in the dissection hall. The ventilation system in the hall is designed to remove air at the level of the cadaver and to reduce exposure to the embalming chemicals and odours. The ventilation system should remain on at all times. The door to the hall should be closed at all times [17, 18, 19].

#### **C. Collection of Specimens**

All tissues and organs removed from the cadaver must be collected and placed in the containers or trays designated for the same. No tissues should be taken out from the dissection hall. The excess liquid and waste that has accumulated on the dissection table should be properly drained off from under the table [20].

#### **D. Emotional Precautions**

The dissection hall environment can sometimes evoke students' speculations, and fears about serious illnesses in themselves, their families, their loved ones etc. and their hopes and fears regarding the concept of death.

In such a situation, it is the teaching staff who should take up this emotionally charged task of mentoring the students'. This approach will instil confidence in the students who will themselves then practice humanistic values

This will allow students to implement and lay the foundation for their sound clinical training [21].

## **CONCLUSION**

The main ethical concern of cadaver dissection lies in respect to human life. These guidelines will help the students and the teachers understand their responsibilities regarding the use of human cadavers. If followed by

the medical students in cadaver dissection, these guidelines will pave the way for better understanding of how to respond in an ethical manner in medical professional life. And will also maintain the dignity of the cadavers. Donating one's body for dissection meets the criteria for the highest levels of charity as set forth by the 12th century philosopher, physician, and rabbinic scholar Moses Maimonides. Cadavers which are a valuable gift to medical education require to be treated with respect and sensitivity. Safety precautions in handling cadavers are a must. As bare hand dissection of cadavers is hazardous, it should be avoided at all costs.

### Competing interests

The authors declare that they have no competing interests.

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