EOSIN AS COLORING AGENT FOR EMBALMING OF CADAVERS

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ABSTRACT

The present study is carried out in the department of anatomy by adding eosin in the embalming fluid which is effective in maintaining life like appearance of the body for funeral embalming and for the purpose of dissection. It was observed that the use of eosin was very effective in preventing discoloration after embalming for funeral purpose as well as for identifying arterial fluid from cavity fluid and life like appearance of the soft tissues.

Key words: Embalming, dissection, eosin, coloring agents

INTRODUCTION

Cadavers form a principal teaching tool for anatomists for teaching gross anatomy. Dissection of cadavers has provided us a strong edifice so that we can express our surgical talents for independent learning and thinking, perform psychomotor skills and exchange our views. Dissection can thus play many roles in the educational process. For funeral embalming it is very essential to introduce some coloring agents so as to enliven the dull state of death, whereas for the dissection it is important to restore or enhance a normal ante mortem appearance of the body. An all India survey for the methods adopted in injection, precise quantity of the preservatives used and coloring agents used in cadavers for the dissection purpose[1]. The present aim of this study is to enhance the cosmetic effect of the deceased, impart color to the blanched tissues and to differentiate arterial fluid from cavity fluid.

MATERIALS AND METHODS

This study was carried out in the department of anatomy at Goa Medical College Bambolim Goa from 2005 to 2007. In this study 150 cadavers sent by the department of Forensic Medicine were embalmed by a mixture of embalming fluid containing preservatives, fixatives, softeners and aromatic compounds. One percent of 25ml of eosin diluted in water was added to the embalming mixture. The cadavers were embalmed by gravitational method and were transferred to the body preservation tank the next day. These cadavers were divided into two groups. Group I, embalmed for the purpose of (burial) funeral and Group II embalmed for the dissection purpose. The cadavers from group I were embalmed within 3 to 6 hours and were disposed immediately as soon as the embalming process was completed. The entire process of funeral embalming was completed within 30 minutes to 2 hours and was transported within or outside the country so as to perform the funeral rites. Group II cadavers were initially stored in the mortuary of Forensic department at a temperature of -4 degrees centigrade and embalmed within a period of one to two weeks. After embalming the cadavers were kept overnight in the embalming room and were transferred to formalin tanks of 500 litres capacity containing 15 percent formalin and were later on utilized for the dissection purpose.

OBSERVATIONS & RESULTS

In group II cadavers it was observed that although skin did not show much change in color imparting a natural look, the arteries appeared reddish in color. The arterial fluid was red in color and could be differentiated from cavity fluid. The superficial fascia appeared reddish over the face whereas the muscles appeared red in color.

DISCUSSION

Studies reveal that the dissection laboratory is the only place where the three dimensional structure of the human body is reinforced by visual, auditory and tactile pathways[2,3]. There is no method that can adequately replace the dissection of the cadaver. Various studies also state that the routine performance of the dissection provides students with training in spatial appreciation and orientation and in the use of instruments[4,5,6]. Most of these are directly related to surgery but the acquired skill in eye hand coordination and manual dexterity is relevant in a variety of clinical settings. Hence giving the cadavers an ante mortem appearance not only generates interest for dissection but also helps to identify the structures, its course, relations and variations which are encountered

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during the dissection. There is distinct difference between anatomical and funeral embalming. The end result in anatomical embalming is sterilization and suitability for dissection but neglecting the cosmetic effects, dehydration, discoloration and distortion of the exposed parts. In funeral embalming besides sanitation, cosmetic effect plays an important role for viewing in casket or bed till the funeral.

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Eosin, a red dye is derived from fluorescein. With haematoxylin it is the routine stain in histopathology and much of the knowledge of morbid histology has been gained from the study of haematoxylin & eosin (H&E) stained sections. Till date hardly any research work has been published regarding the coloring agents used in the embalming fluid. In order to overcome the problem, in the current study eosin was added to the embalming mixture so that the soft tissues (muscles) will have life like appearance and we are able to differentiate the arteries, and arterial fluid from the cavity fluid. It was observed that muscles were red colored and had life like appearance. This effect was seen immediately after dissection. Whereas when the dissected parts were immersed in the formalin tank immediately after the dissection was over the effect of eosin slowly faded over a period of two weeks and the red life like appearance had turned brown in color. This was due to the dissected bodies being immersed in the formalin tank. Hence adding coloring agent is very useful for the students to identify the structures for better appreciation and knowledge of the subject. Cadavers may present a number of disadvantages. Their color, texture and smell are not like real life and cadavers cannot be palpated, auscultated or usefully asked to change position. Hence our desired goal is to produce life like appearance and minimize the smell adding aromatic compounds like eucalyptus.

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