

EMBALMING

Dr.S.V.PHANINDRA
PROFESSOR & HOD
DEPT. OF FORENSIC MEDICINE & TOXICOLOGY
NARAYANA MEDICAL COLLEGE
NELLORE

WELCOME TO THE WORLD OF MUMMIES



- INTRODUCTION
- PRESERVATION OF DEAD BODY
- NEED FOR EMBALMING
- MODERN EMBALMING
- ANATOMICAL EMBALMING
- SPECIAL SITUATIONS
- LEGAL IMPLICATIONS
- PRECAUTIONS
- HAZARDS OF EMBALMING

INTRODUCTION

BALMS & BALSAMS

EGYPTIAN-----MUMMIES

XAXOS-----CANARY ISLANDS

(Guanche embalmers)

- EGYPTIAN PERIOD-----3200-650 AD
- ANATOMIST-----650 AD-1861 AD
- MODERN-----1861 AD

PRESERVATION OF DEAD BODY

- NATURAL
- ARTIFICIAL

NATURAL

- FREEZING
- DRY COLD
- DRY HEAT
- ADIPOCERE
- SOIL CONTENTS



30 5 2005

St. Bernard mountain









ARTIFICIAL

- HEATING
- FREEZING
- EMBALMING
- PLASTINATION

The catacombs of Capuchin monastery



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NEED FOR EMBALMING

- FOR ACADEMIC PURPOSES
- FOR TRANSPORTATION
- FOR PUBLIC VIEWING

MODERN EMBALMING

EMBALMER SHALL FOCUS ON

- PERSONAL SAFETY
- HANDLERS SAFETY
- PUBLIC SAFETY

- EMBALMING DESTROYS THE COLLOIDAL NATURE OF THE PROTEINS, NEUTRALIZES THE ACTIVE CENTRE'S OF THE MOLECULES AND ESTABLISHES MANY CHEMICAL CROSS LINKAGES THAT WERE NOT THERE BEFORE BETWEEN ADJACENT PROTEIN MOLECULES.

- AS A RESULT THE PROTEIN ARE CONVERTED TO HIGH MOLECULAR, CROSS LINKED LATTICE WORK OF INERT SOLID MATERIAL.
- THEY DO NOT RETAIN WATER AND THE STABILITY IS MAINTAINED BY PRESENCE OF LITTLE UNCOMBINED FORMALDEHYDE.
- SO THAT THEY NO LONGER SERVE AS FOOD TO BACTERIA.

- PROTEINS -----COAGULATED
- TISSUES-----FIXED
- ORGANS-----BLEACHED & HARDENED
- BLOOD-----BROWNISH MASS

PRE-REQUISITE

- CONSENT
- COPY OF DEATH CERTIFICATE
- NO OBJECTION CERTIFICATE

- PRE-EMBALMING
- EMBALMING METHODS
- EMBALMING FLUIDS
- EMBALMING PROCEDURES
- INJECTION AND DRAINAGE

PRE-EMBALMING

- DISINFECTION
- CLEANING

METHODS OF EMBALMING

- ARTERIAL EMBALMING
- CAVITY EMBALMING
- SUPPLEMENTARY -HYPODERMIC
 -SURFACE

EMBALMING FLUID

- NO RISK OR FEAR OF INFECTION
- LIFE-LIKE APPEARANCE IS PRODUCED
- PRESERVATION WITHOUT PUTREFACTION
- PREVENT CONTAMINATION WITH INSECTS
AND MAGGOTS.

COMPOSITON OF EMBALMING FLUID

- **PRESERVATIVES** –Formaldehyde,Methanol,Phenol
- **GERMICIDES**-Phenol,Glutaraldehyde,Zephiran
- **BUFFERS**- Borax ,sodium and Magnesium carbonates and bicarbonates
- **WETTING AGENTS**-Glycerine ,Glycol,Sorbitol ,sodium lauryl sulphate
- **ANTICOAGULANTS**- Sodium Oxylate ,Sodium Citrate
- **DYES** – Eosin,Ponceau ,
- **VEHICLE** – Water , Glycerine ,Sorbitol , Alcohol
- **PERFUMING AGENTS** –oils of clove,cinnamon,pepepermint,lavender

EMBALMING PROCEDURES

- GRAVITY INJECTOR
- HAND FOOT PUMP
- BULB INJECTOR
- MOTORISED INJECTOR

INJECTION TECHNIQUES

- SINGLE POINT INJECTION
- SPLIT INJECTION
- MULTI POINT INJECTION
- RESTRICTED CERVICAL INJECTION

PRE -INJECTION FLUID

- ANTICOAGULANTS AND BUFFERS

OR

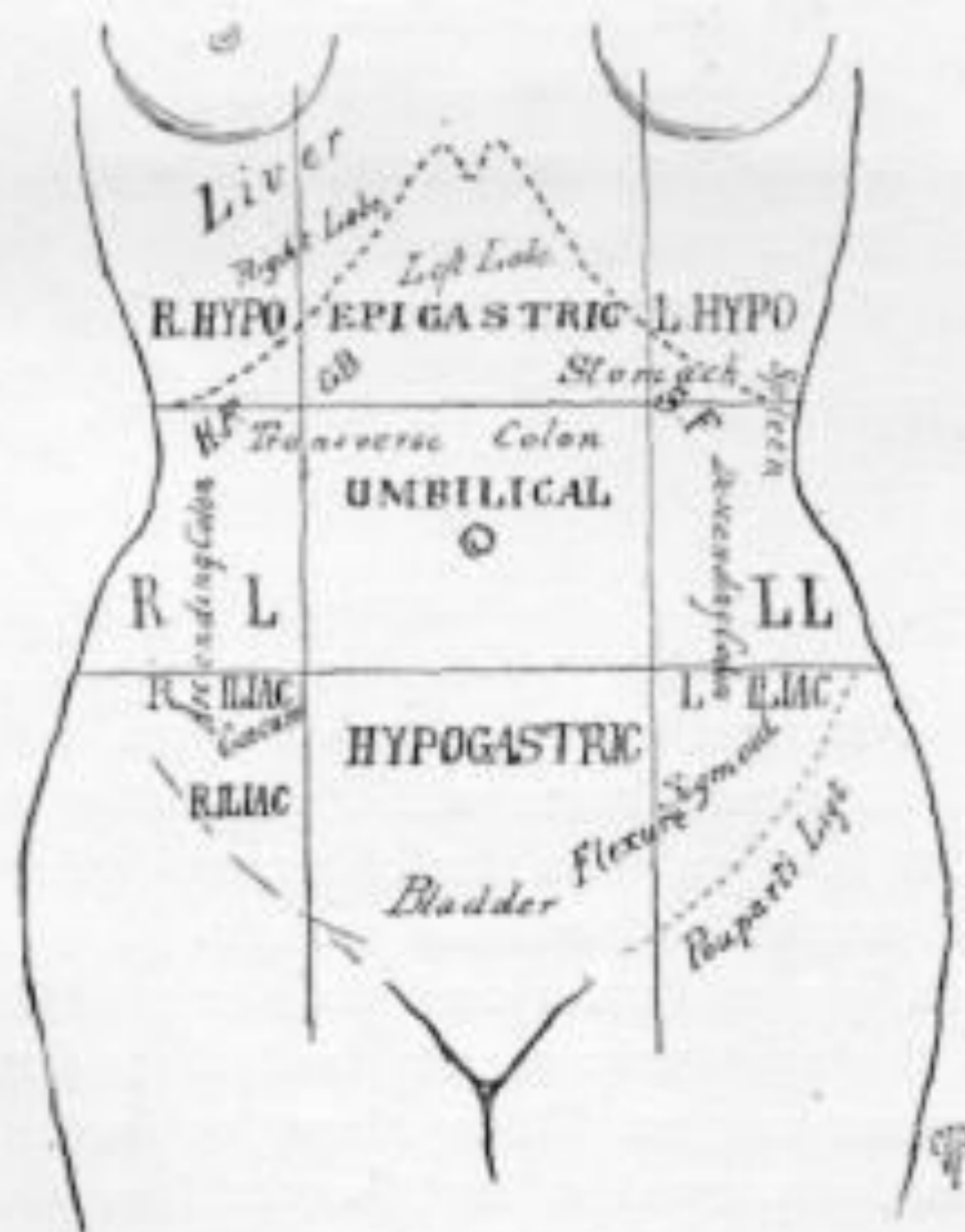
- 2% ARTERIAL FLUID

METHODS OF DRAINAGE

- CONTINUOUS DRAINAGE
- ALTERNATE DRAINAGE
- INTERMITTENT DRAINAGE

CAVITY EMBALMING

- RIGHT SIDE OF HEART
- STOMACH
- CAECUM
- URINARY BLADDER
- CRANIAL CAVITY





CAVITY FLUID

• FORMALIN	-	60%
• METHANOL	-	25%
• LIQUIFIED PHENOL	-	10%
• SODIUM LAURYL SULPHATE	-	1%
• MERCURIC CHLORIDE	-	1%
• EUCALYPTUS OIL	-	1%

HYPODERMIC EMBALMING

- 8-19 GAUGE NEEDLES
- OBSTRUCTION IN BLOOD VESSELS

SURFACE EMBALMING

- INFANT
- FOETUS
- VISCERA
- MUTILATED BODY PARTS

ANATOMICAL EMBALMING

- PROPER PRESERVATION
- TOTAL STERILIZATION
- SUITABLE FOR DISSECTION

TYPICAL EMBALMING FLUID

- | | | |
|------------------------|---|---------|
| • FORMALIN | - | 1.5 lit |
| • SODIUM BORATE | - | 600 g |
| • SODIUM CITRATE | - | 900 g |
| • GLYCERINE | - | 600ml |
| • SODIUM CHLORIDE | - | 800 gm |
| • 1% EOSIN | - | 30 ml |
| • SOLUBLE WINTER GREEN | - | 90 ml |
| • WATER – | | |

- VENOUS DRINAGE NOT NESSASARY
- CAVITY TREATMENT NOT NESSASARY
- BRAIN APPROACHED THROUGH ROOF OF THE
NOSE

Paint Mixture

- Glycerin 75%
- Alcohol 10%
- Phenol 5%
- Water 10%

Cloth Fluid

- Formalin 5%
- Phenol 5%
- Glycerin 50%
- Water 40%
- Add teepol and thymol crystals.

TANK FLUID

- FORMALIN - 15%
- GLYCERINE - 25%
- PHENOL - 10%

NERVOUS TISSUE

- 10% FORMALIN
- NO GLYCERINE BASE

SPECIAL SITUATIONS

- INFANTS
- AUTOPSIED BODIES
- BURNT BODIES
- DECOMPOSED
- H I V CASES
- CERTAIN MEDICAL CONDITIONS

INFANTS

- FOETUS AND SMALL INFANTS
- SMALL AMOUNT OF FLUID
- INFANT TROCAR (12 X 0.25 INCHES)

AUTOPSIED

- PREPARATION
- DRAINAGE
- ARTERIAL INFUSION
- CAVITY TREATMENT

DECOMPOSED

- EARLY — STRONG
- NO DRAINAGE
- LATE — HYPODERMIC
- UNDILUTED

BURNT

- HYPODERMIC
- DOUBLE PLASTIC BAGS
- STRONG ARTERIAL SOLUTION

LEGAL IMPLICATIONS

AUTOPSY AFTER EMBALMING

- BODY BECOMES RIGID
- INJURIES CANNOT BE PROPERLY INTERPRETTED
- DISEASES CANNOT BE PROPERLY INTERPRETTED
- POISONS CANNOT BE IDENTIFIED
- THROMBI & EMBOLI ARE WASHED OUT
- BLOOD GROUPING CANNOT BE DONE

- SEC 39 Cr.P.C
- SEC 201 I.P.C
- SEC 297 I.P.C
- ANATOMICAL ACTS

PRECAUTIONS

- IMMUNIZATION
- MOUNTOUX SKIN TEST
- PROPHYLACTIC
- SCREENING TESTS
- UNIVERSAL WORK PRECAUTIONS
- UNIVERSAL BLOOD AND BODY PRECAUTIONS

HAZARDS OF EMBALMING

- T.B –JOHN HOPKINS RESEARCH INSTITUTE
- HIV-16.5 DAYS AT 2°C

