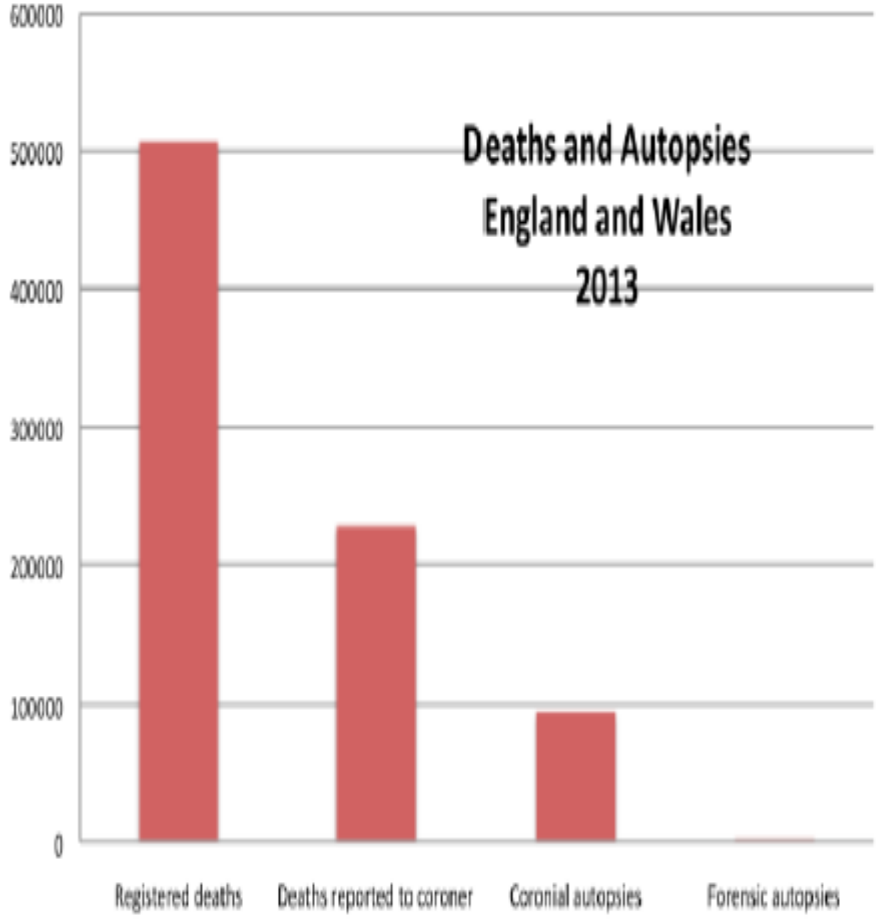


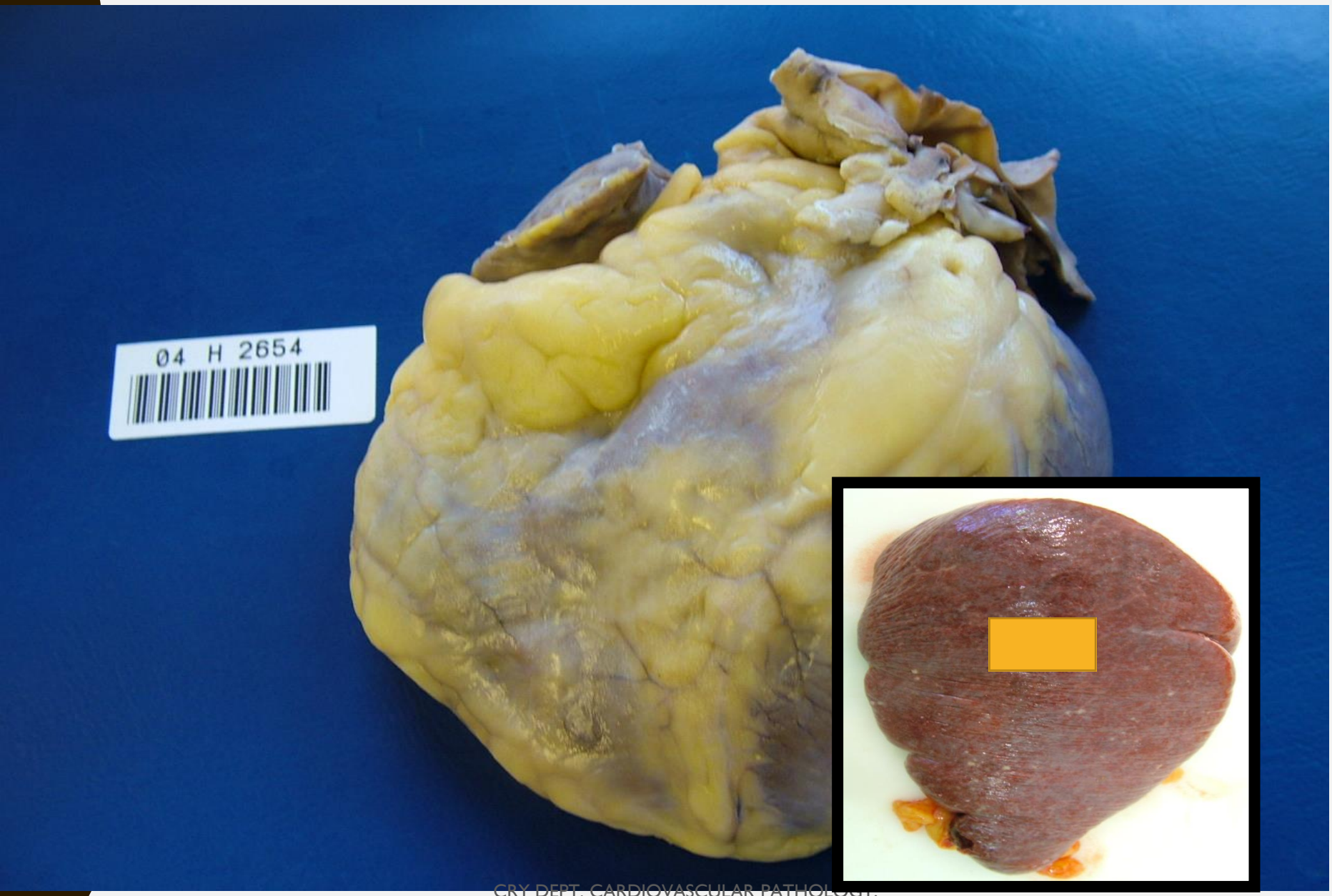
Fig 3.3: The annual registered deaths, reported deaths, coronial autopsies and forensic autopsies in England and Wales in 2013

CORONER OFFICER GUIDE SCD

- **CIRCUMSTANCES OF DEATH**
- Found dead in bed with no previous significant heart disease history
- Found dead in community with no previous heart disease history
- Found collapsed in community either brought in dead or died shortly after admission to AE
- department of local Hospital
- Witnessed collapse with failure to resuscitate at home or in the community
- Collapse during or after sport event
- Death Following impact to chest in sport or assault
- Cardiac arrest with resuscitation and survival to hospital admission but died with hypoxic brain
- damage
- Drowning where circumstances are no clear. Found dead at bottom of pool with no struggle.
- Road traffic accident where circumstances indicate driver collapsed before accident or car veered off
- road before impact. Found dead at wheel of car that is stationary
- Toxicology is negative or non-toxic levels of drugs are found

CORONER QUESTIONAIRE

- Was the patient previously well/ Did patient have symptoms prior to the sudden death
- Had patient a previous history of heart disease or attended a heart clinic.
- Had patient a history of cardiac arrhythmias (irregular heart beat), Had patient a previous ECG
- Had patient a history of chest pain, blackouts, SOB, swelling of legs
- Had patient a previous history of other disease, asthma, epilepsy, diabetes, PE
- Was patient on any medication
- Is there a family history of heart disease
- Is there a previous family history of sudden premature death or infant death
- Was patient a smoker / drinker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Form C- Packing Instructions

CRY Cardiovascular Pathology
Cardiovascular Sciences Research Centre
St George's University of London
Cranmer Terrace, London SW17 0RE
Tel.: (+44) 020 8725 5112 Fax: (+44) 020 8725 5139

REFERRAL PACKING INSTRUCTIONS
for
A. Cardiac Specimens B. Spleens

Specimen to be sent to:
Professor M Sheppard
Site Services
Goods Inwards
St George's, University of London
Cranmer Terrace
London SW17 0RE

To ensure compliance with guidelines issued by the Human Tissue Authority (HTA) please follow the following protocol which is designed to provide us with the requisite information to deal sensitively and appropriately with human tissue specimens, and to comply with relatives' wishes.

After examination is complete, we will contact you regarding collection of the specimen. **NOTE: The referring hospital is responsible for organising both delivery and return of material.**

A. HEART SAMPLES:
SPECIMENS REFERRED TO US MUST BE FIXED IN 10% FORMALIN FOR AT LEAST 24HRS PRIOR TO DESPATCH. ALL FORMALIN MUST BE DRAINED BEFORE SENDING

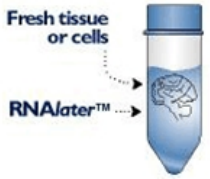
1. Place a label with the following information into either a ziplock or sealable bag:
   - Patients Name, DOB
   - Your Reference Number
   - Formalin hazard label
2. Fix the label to the HEART
3. Wrap specimen in absorbent material dampened with formalin
4. Seal specimen in the ziplock/sealable bag expelling as much air as possible.
5. Place in a leak proof container (i.e. wadded polypropylene screw cap container, code SCC35, from Henly's Medical Supplies Ltd, Tel: 01707 333164 or Hays DX container) surrounded by absorbent material.

CRY Cardiovascular Pathology
Cardiovascular Sciences Research Centre
St George's University of London
Cranmer Terrace, London SW17 0RE
Tel.: (+44) 020 8725 5112 Fax: (+44) 020 8725 5139

6. Affix addressee label (top of page), return address of Mortuary, Name of the patient, 'Diagnostic Specimen UN3373' label, and 10% Formalin Hazard label to leak proof container.
7. Pack leak proof container **into an outer box**.
8. **In the outer box** include the following:
   - Completed consent form detailing relatives' permission to return/retain the blocks and slides (**Form B**)
   - Completed confirmation of receipt of specimen form (**Form D**)
   - Letter of referral with clinical details and any points of interest for investigation
   - Provide preliminary post-mortem report if available
9. Seal the box with tape
10. Affix Addressee (top of page 1), return address and 'Diagnostic Specimen UN3373 label **to the outer box**. **NOTE: NO PATIENT INFORMATION OR DETAILS ARE TO BE INCLUDED ON THE OUTER BOX.**
11. Arrange a courier to deliver the specimen to us between the hours of **9am – 4.30pm Monday - Friday**.

Note: The specimen should be transported by courier ONLY.

B. Spleen
1. If you do not have a CRY RNAlater sample tube kit, please contact us on 020 8725 5112 ASAP.
2. Cut a **small fresh** piece of spleen tissue (0.5cm x 0.5cm x 0.5cm) The RNAlater solution **cannot penetrate large samples**, so DNA quality is poor if they are sent.
3. Place tissue into pre-filled 5ml RNAlater container with lid.
4. Label side of tube with patient name and date of birth using pen, or sticky label.
5. Replace 5ml tube in large 50ml clear tube.
6. Store at room temperature (or preferably in refrigerator) until sent by courier with specimen.
7. Do not put frozen material in RNAse later. If sample is frozen, thaw first and then place in RNAse later



NOTE: RNAlater solution can be stored indefinitely at room temperature and does not expire.

Form A- Specimen

CRY Cardiovascular Pathology
Cardiovascular Sciences Research Centre
St George's University of London

PLEASE ENSURE DELIVERY BETWEEN 9.30 AM - 4.30 PM

Address for delivery:	***Address for correspondence:***
Prof M N Sheppard *Site Services, Goods In* *St George's University of London* *Cranmer Terrace, London SW17 0RE* *Prof. M. N. Sheppard* *PA: 020 8725 5112/5959* *Fax: 020 8725 5139*	*Cardiovascular Pathology* *Cardiovascular Sciences Research Centre* *St George's University of London* *Cranmer Terrace, London SW17 0RE*

REFERRAL OF HEART REQUEST

Name of Patient:

DOB: DOD:

Attn:

Location:

Fax No: Phone N

Email address:

IM

Please note the following:

- Consent Forms B (pages 1-2)
- Packing instructions Form C
- Confirmation of receipt Form D

PLEASE INCLUDE THE PRELIMINARY POST-M
AND BMI OF THE PATIENT.
ALL FORMS MUST BE COMPLETED IN FULL

NUMBER OF PAGES INCLUDING COVER SHEE

SIGNED: _____

The information contained in this facsimile
intended only for the use of the individual c
is not the intended recipient, you are her
copying of this telecopy is strictly prohibite
immediately notify us by telephone: 020 872

FORM A: Referral of organ request

CRY Cardiovascular Pathology
Cardiovascular Sciences Research Centre
St George's University of London
Cranmer Terrace, London SW17 0RE
Tel.: (+44) 020 8725 5112 Fax: (+44) 020 8725 5139

PERMISSIONS FORM

CORONER'S REFERRALS – RETURNING / RETENTION / RESEARCH & TEACHING

Name of Deceased	
Date of birth	
Date of death	
Pathologist name	
Mortuary	
Coroner officer	
Coroner	

The heart of the patient named above is being referred to Professor Mary Sheppard (at the CRY Cardiovascular Pathology, St. George's University of London, London SW17 0RE) for specialist analysis to help determine the cause of death.

ole heart as well as slides made from small blocks of tissue.
etain the blocks and slides for scheduled purposes including

e of human tissue, including the heart. We usually
o referring mortuary

wishes about what they would like to happen to the blocks
plete. Small piece of spleen will be taken for possible future
e returned.

pecimen has been referred? *Yes/No*

s below, concerning the heart, blocks and slides by ticking the *appropriate box:*

ST BE COMPLETED IN FULL.

	To RETAIN for scheduled purposes	To RETURN

eing retained for possible future genetic analysis
sy. Consent will be obtained if this is required.

ETURN / RETAIN of heart, blocks & slides

1

Form B Permissions Form

CRY Cardiovascular Pathology
Cardiovascular Sciences Research Centre
St George's University of London
Cranmer Terrace, London SW17 0RE
Tel.: (+44) 020 8725 5112 Fax: (+44) 020 8725 5139

Otherwise the small piece of spleen will be disposed of within 3 months of completion of coroner investigation in this case

Unfortunately we are unable to dispose of cardiac specimens. If it has been requested for the specimen to be disposed of after analysis these will be returned to the referring centre in order for them to do so.

Name of person completing form.....

Position of person .....

Phone number.....**Fax number** .....

Signature.....**Date**.....

Family member whom you obtained consent from .....

Relation to deceased.....

Phone number.....**Fax number** .....

Email.....

RETURN OF SPECIMEN

The Unit is unable to dispose of human tissue, including the heart, so it is the responsibility of the referring centre to arrange for the return of the organ. Please give contact details of the person organising collection and the return address for the organ:

Name: _____

Address: _____

_____

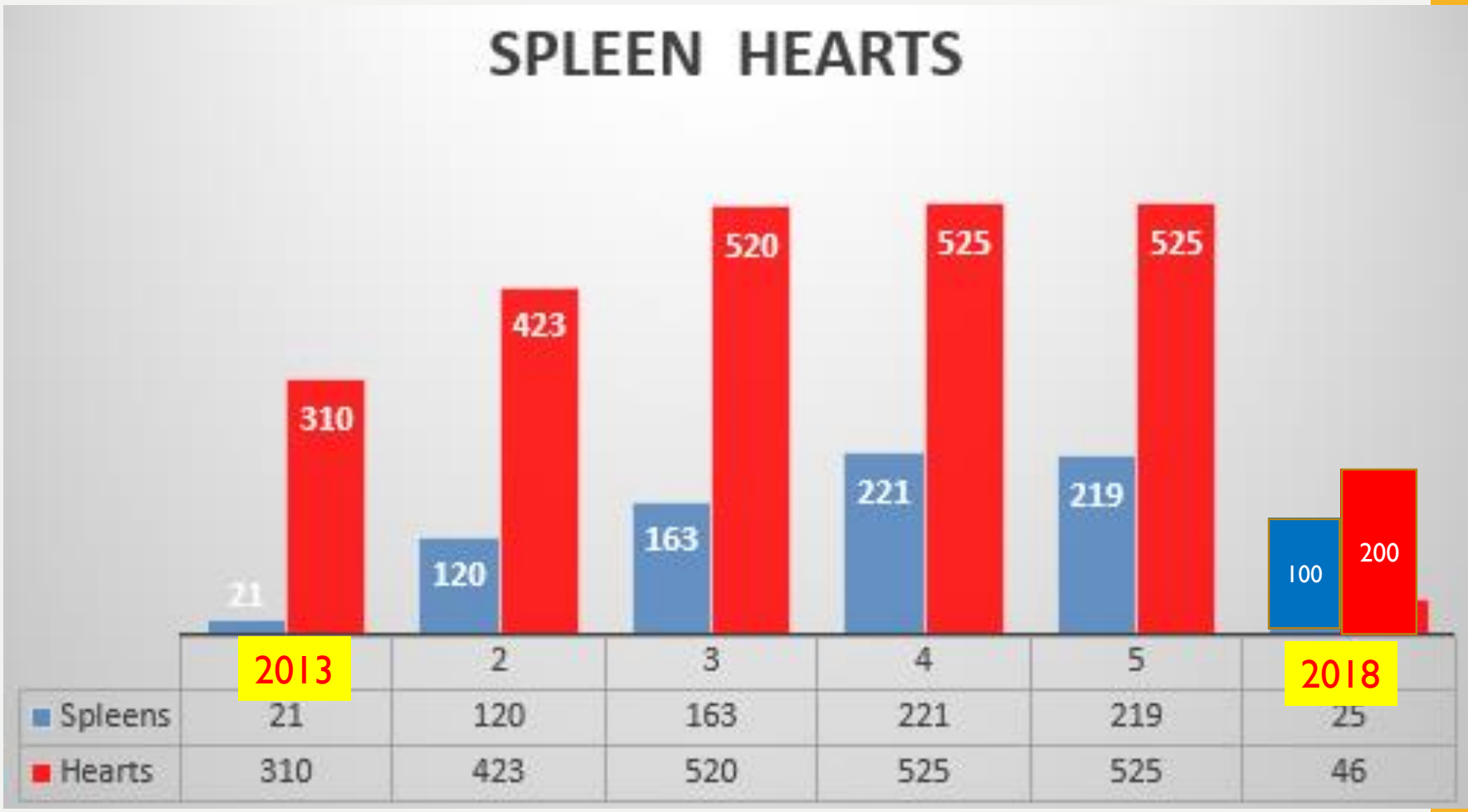
Telephone No: **Fax No:**

We aim to complete examination and issue a report within 2 weeks of the date of receipt, however in certain circumstances this may be longer.

If there is an urgency in returning the heart for funeral arrangements please inform us so we can speed up the examination.

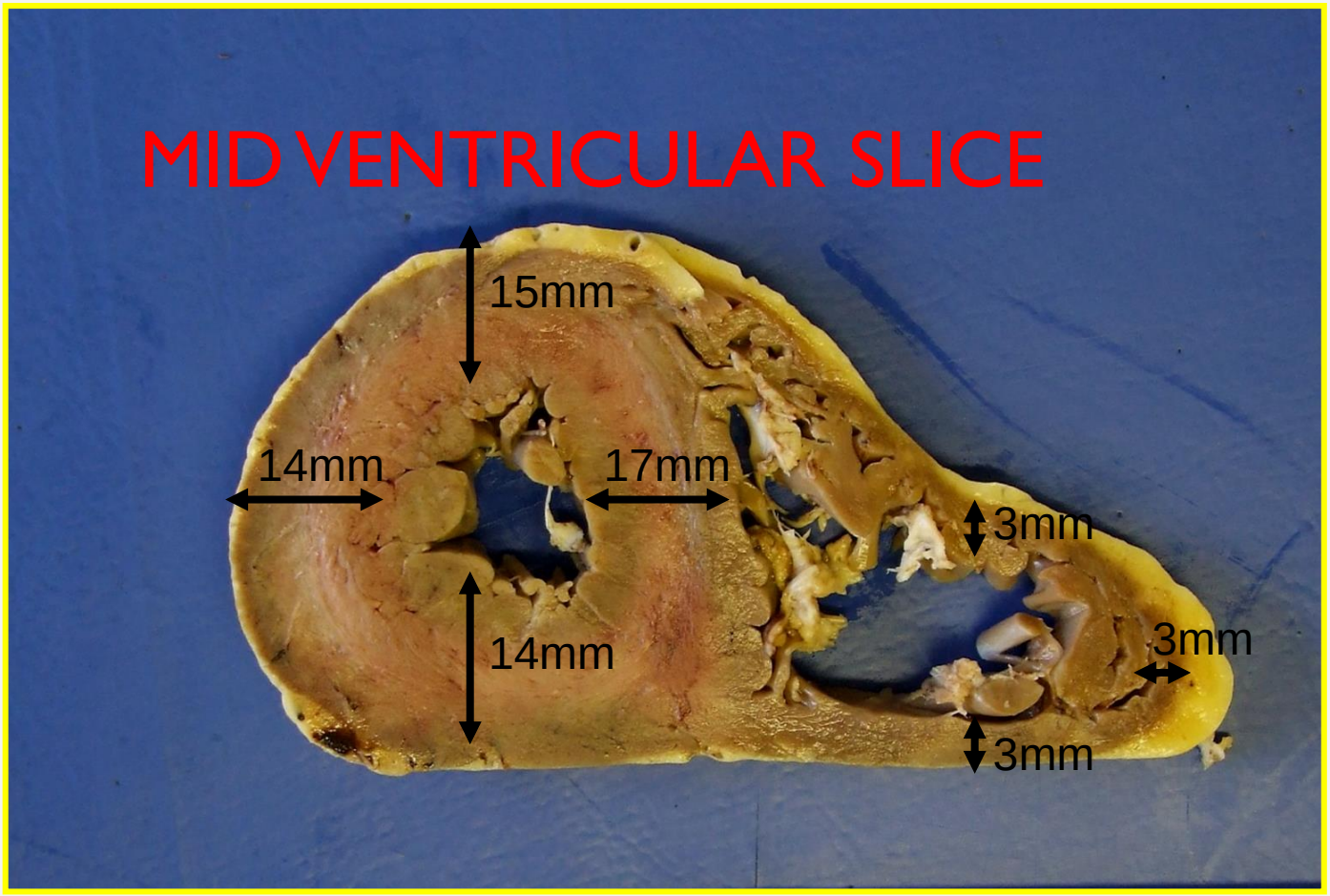
GENETIC MATERIAL

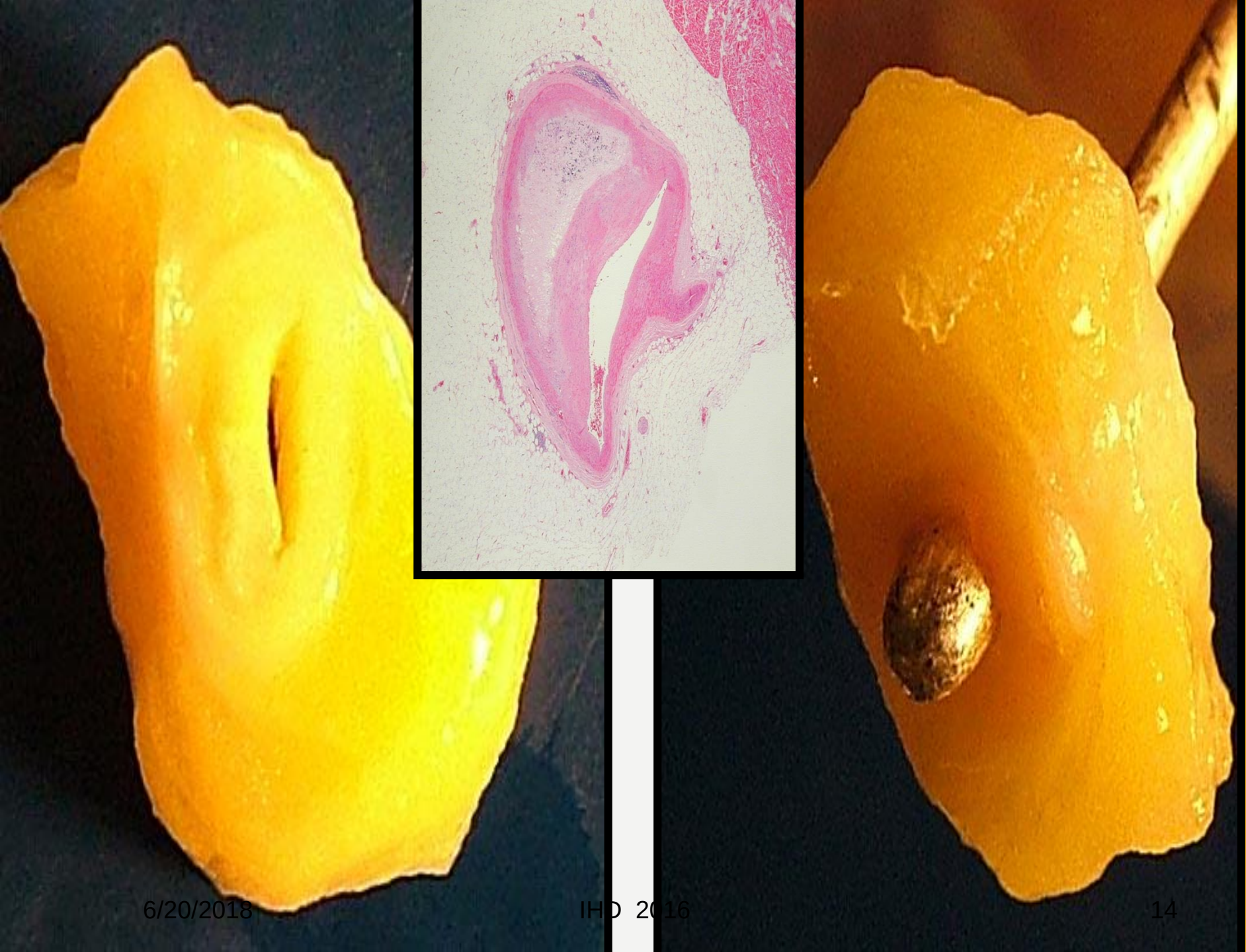
- The 100,000 genome project has been laying the foundations for delivering personalised medicine
- As of November 2018 this will form part of the new landscape of widespread provision of genetic testing across England.
- Genetic testing in unexplained sudden death in the young will be available through the NHS provided the sample has been retained.
- We therefore AS PATHOLOGISTS always aid the retention of such tissue as a matter of routine across the country at autopsy.

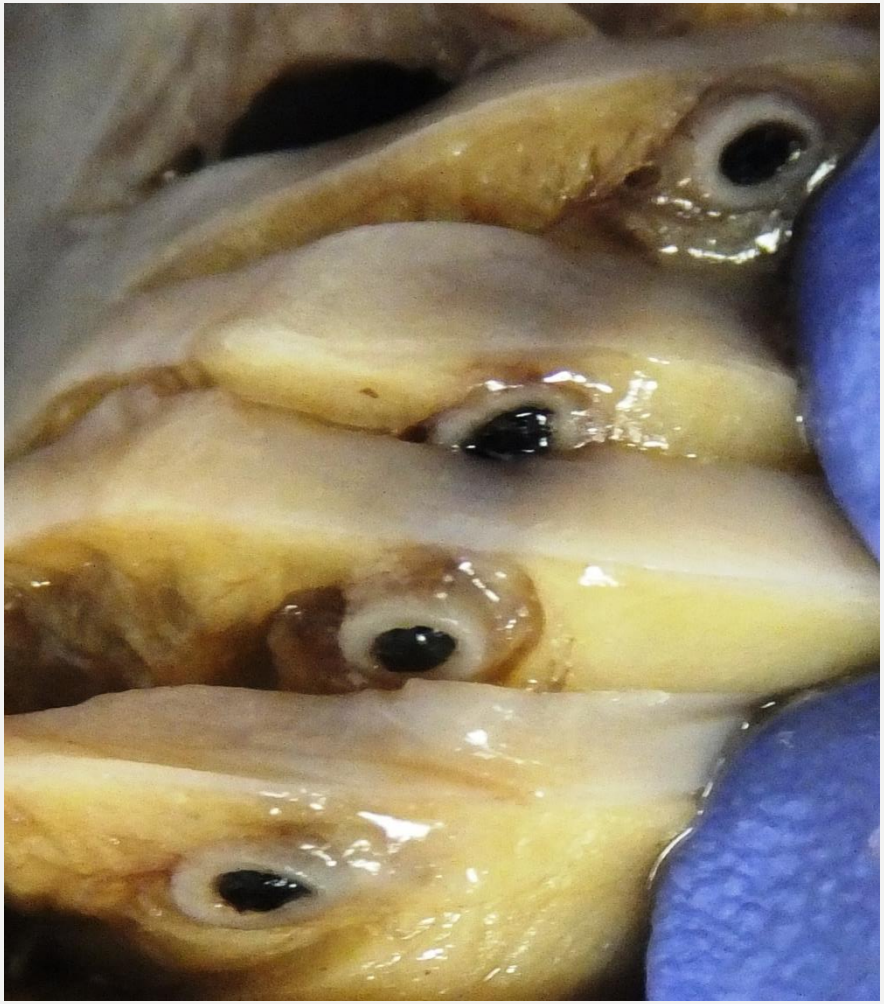


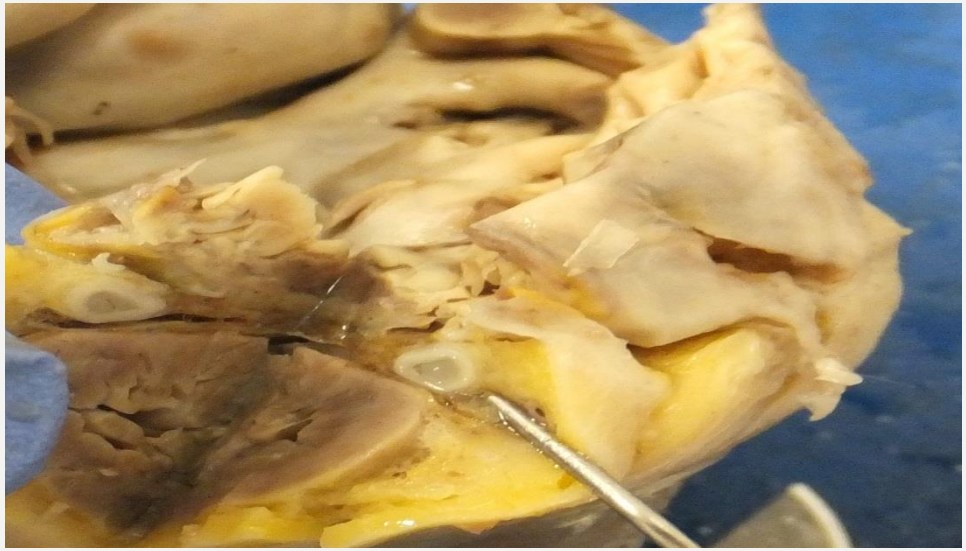
	2013	2	3	4	5	2018
Spleens	21	120	163	221	219	25
Hearts	310	423	520	525	525	46

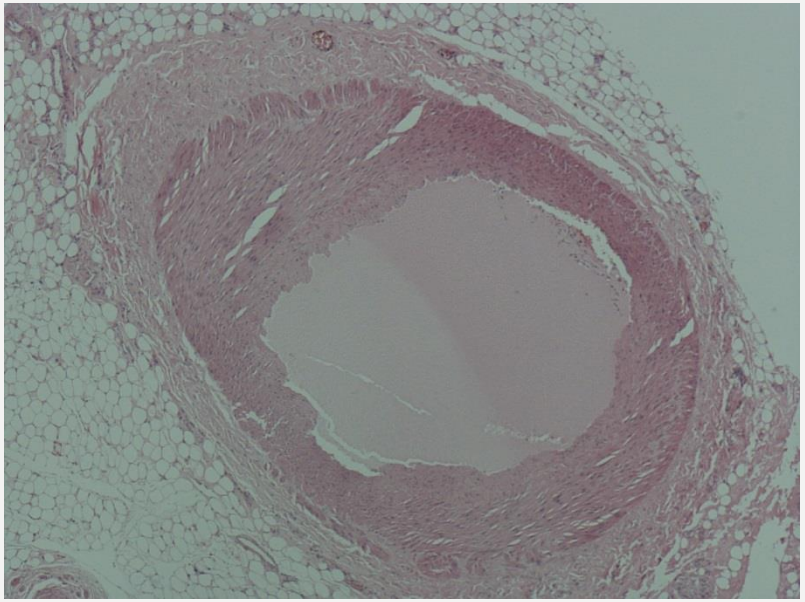
- 44-year old female, One episode of palpitations earlier same day.
- No past medical history.
- Heart weight 341gm Normal

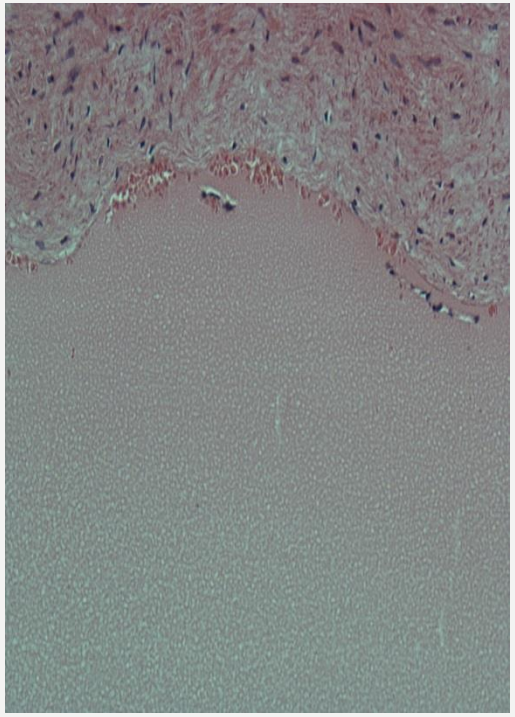






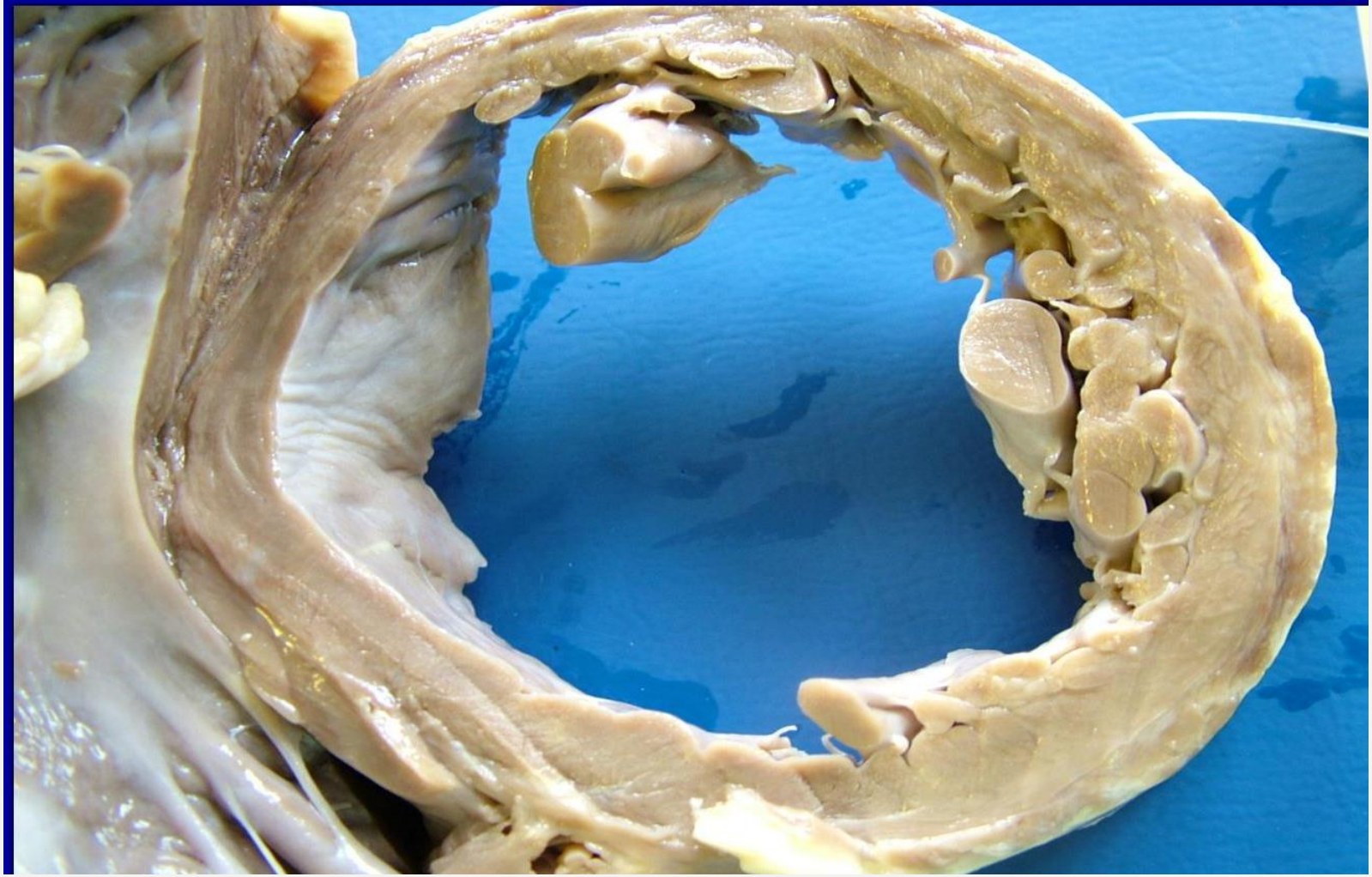




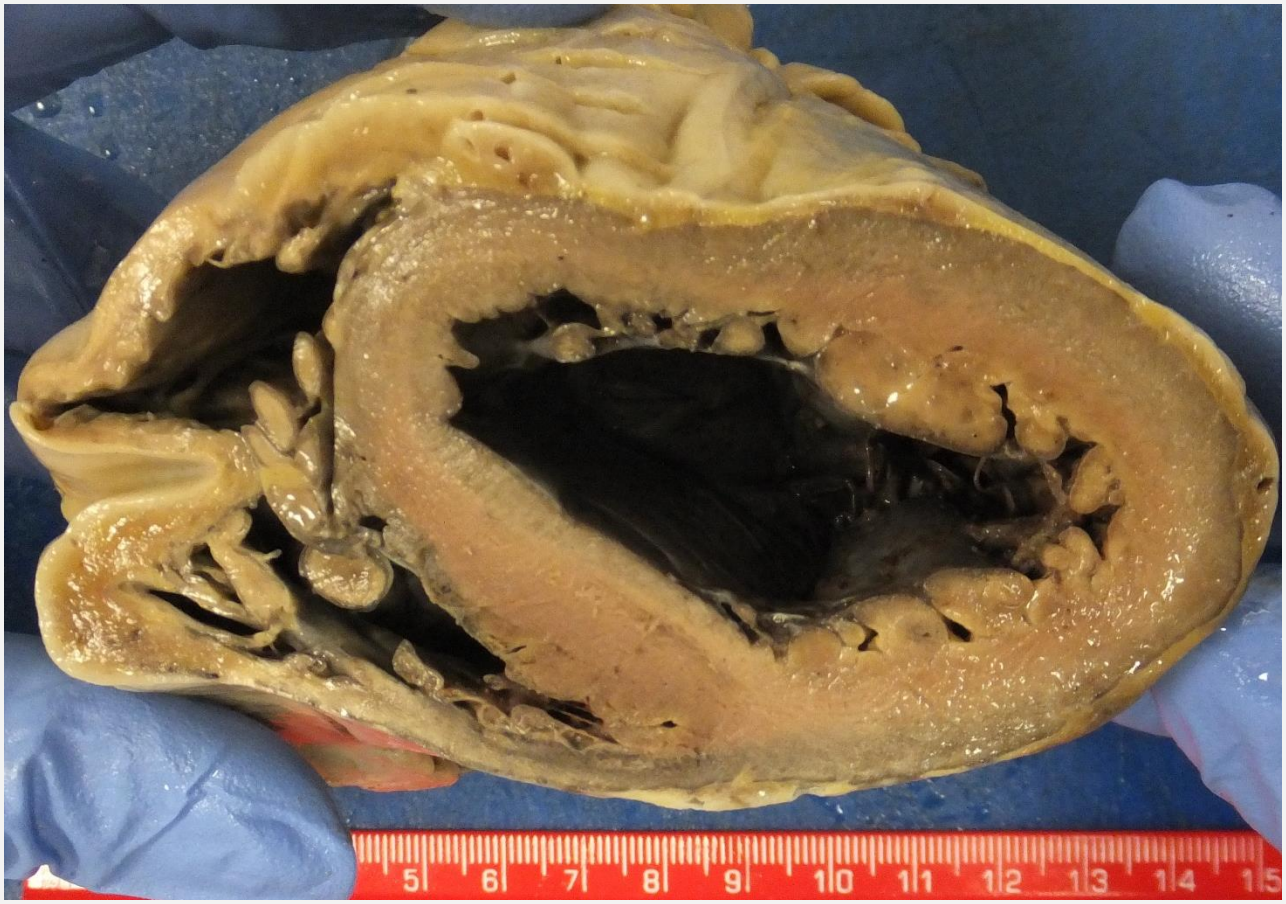


CRY DEPT. CARDIOVASCULAR PATHOLOGY,
LONDON 2018

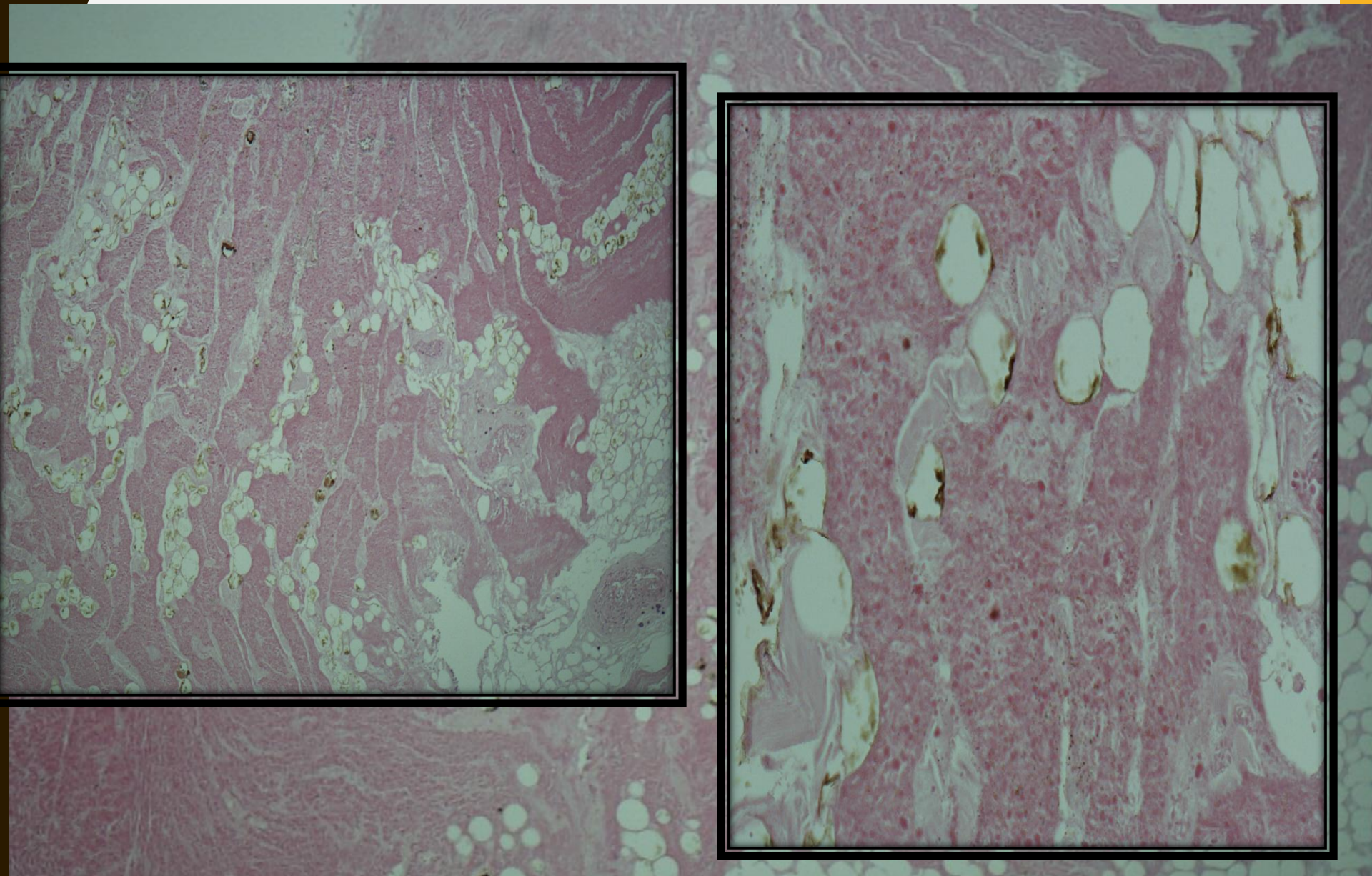
DILATED CARDIOMYOPATHY



BEWARE AUTOLYSED HEART



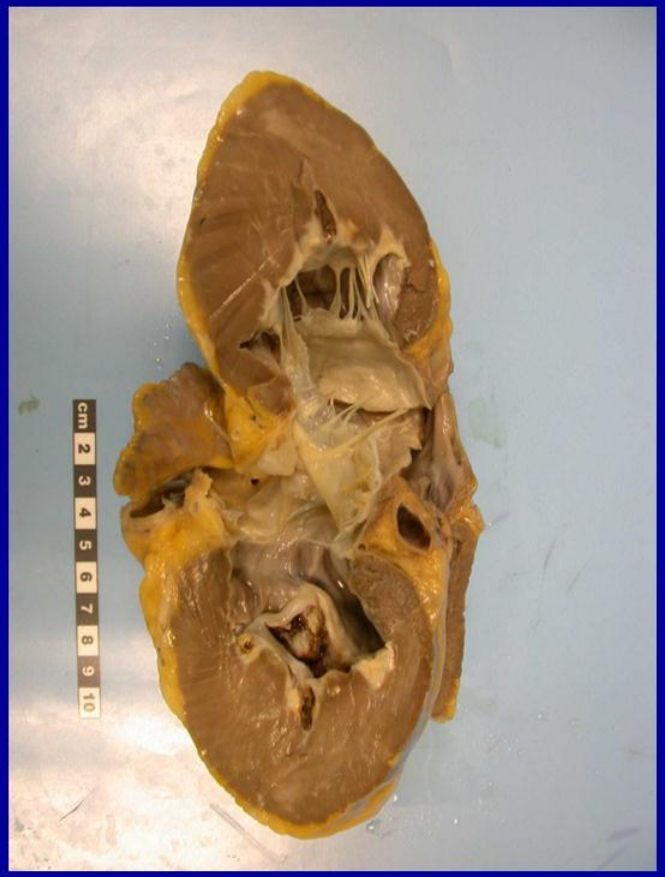
CRY DEPT. CARDIOVASCULAR PATHOLOGY,
LONDON 2018



Asymmetrical HCM

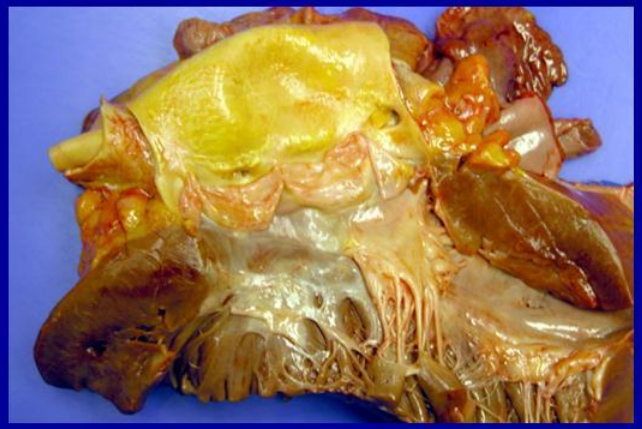
- Classical anatomic form of HCM described by Teare in 1958
- Basal anterior septum bulges beneath aortic valve
- Disproportionate thickening of interventricular septum

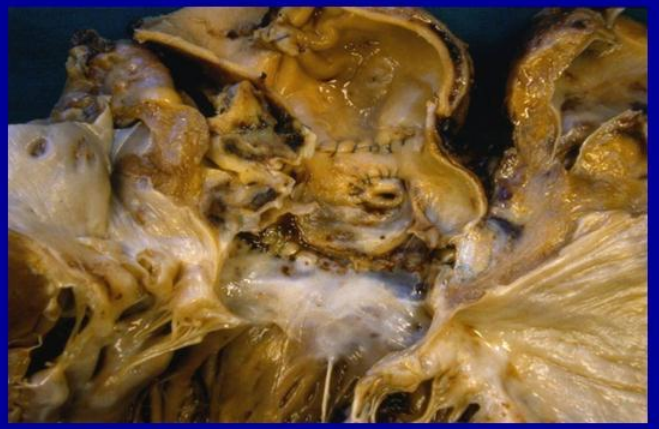
Morphological Variants of HCM



- HCM with mid-ventricular obstruction +/- apical diverticulum
- HCM with ventricular hypertrophy confined to apex
- Burnt-out or dilated HCM

Sub-aortic mitral impact lesion



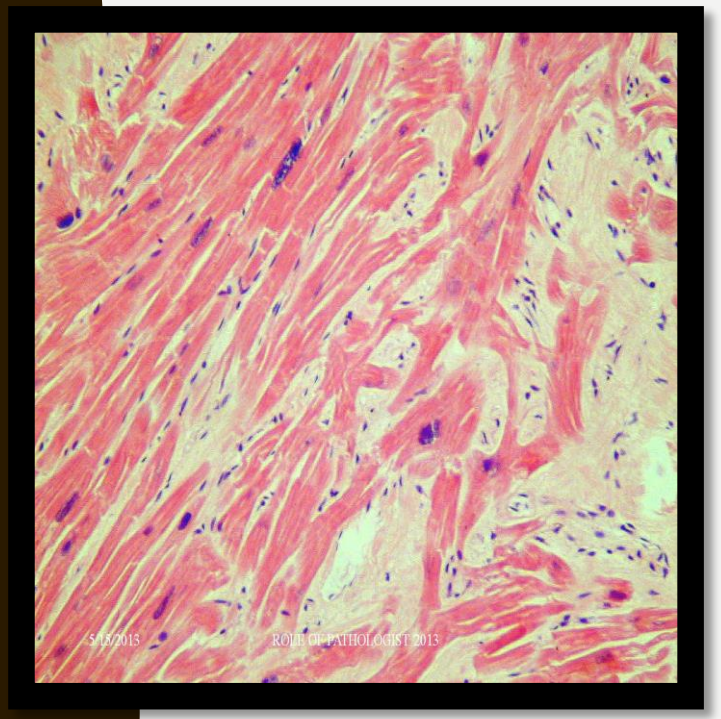


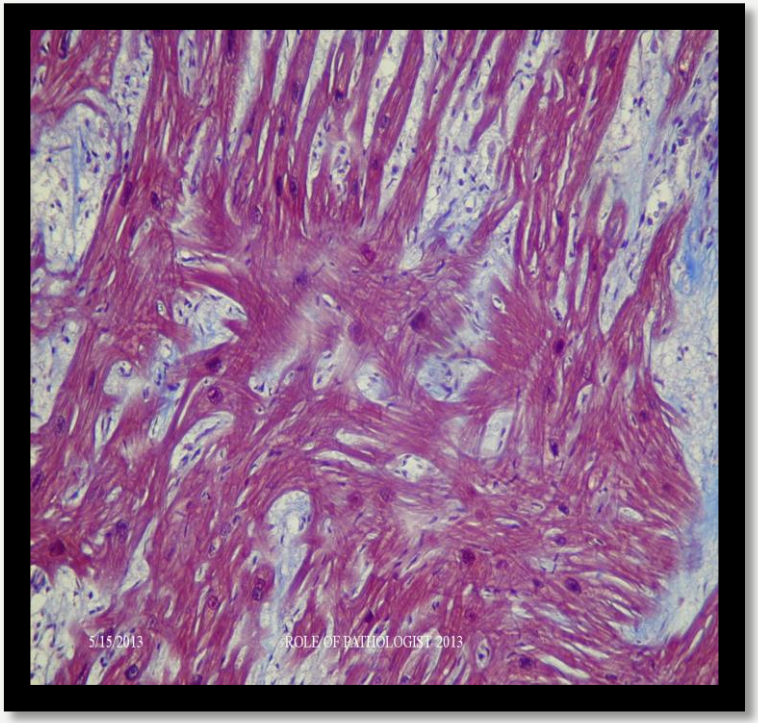
- Similar bands of endocardial thickening can occur in hypertrophied hearts of diverse aetiologies with accentuation of the base of the septum

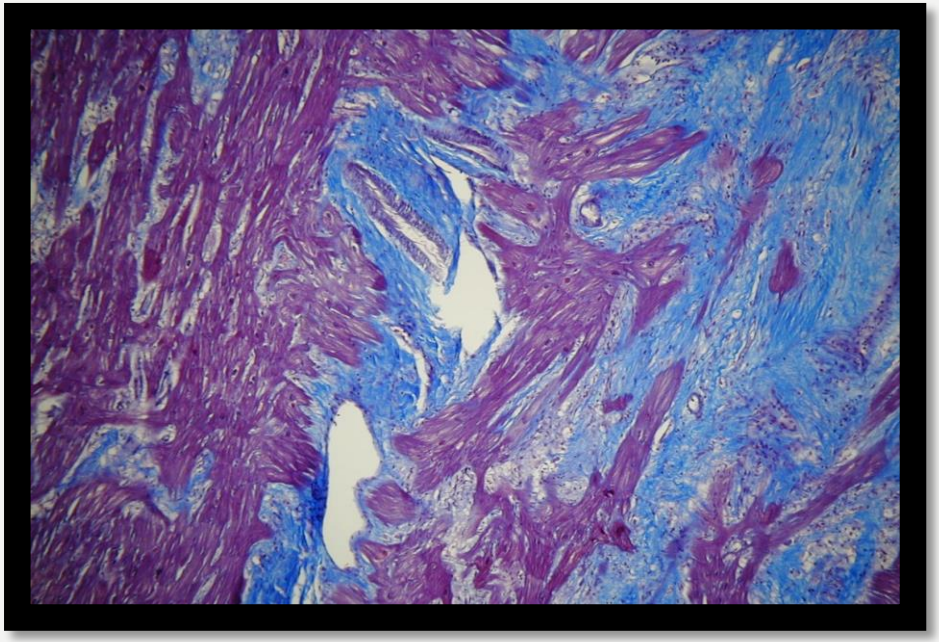
- eg ‘sigmoid’ septum in elderly, aortic valve stenosis, hypertension

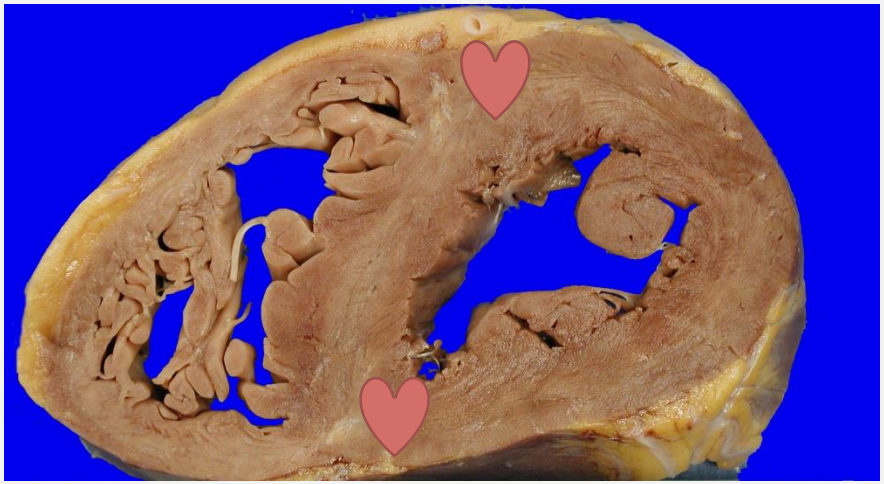
DILATED CARDIOMYOPATHY

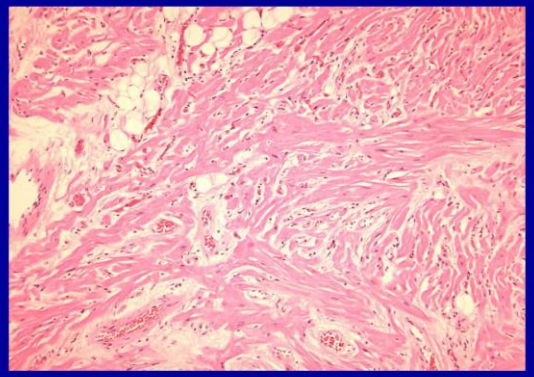
Histologically burnt out HCM


5/15/2013
ROLE OF PATHOLOGIST 2013


5/15/2013
ROLE OF PATHOLOGIST 2013







- Do not sample where the RV interdigitates with the septum

ELSEVIER

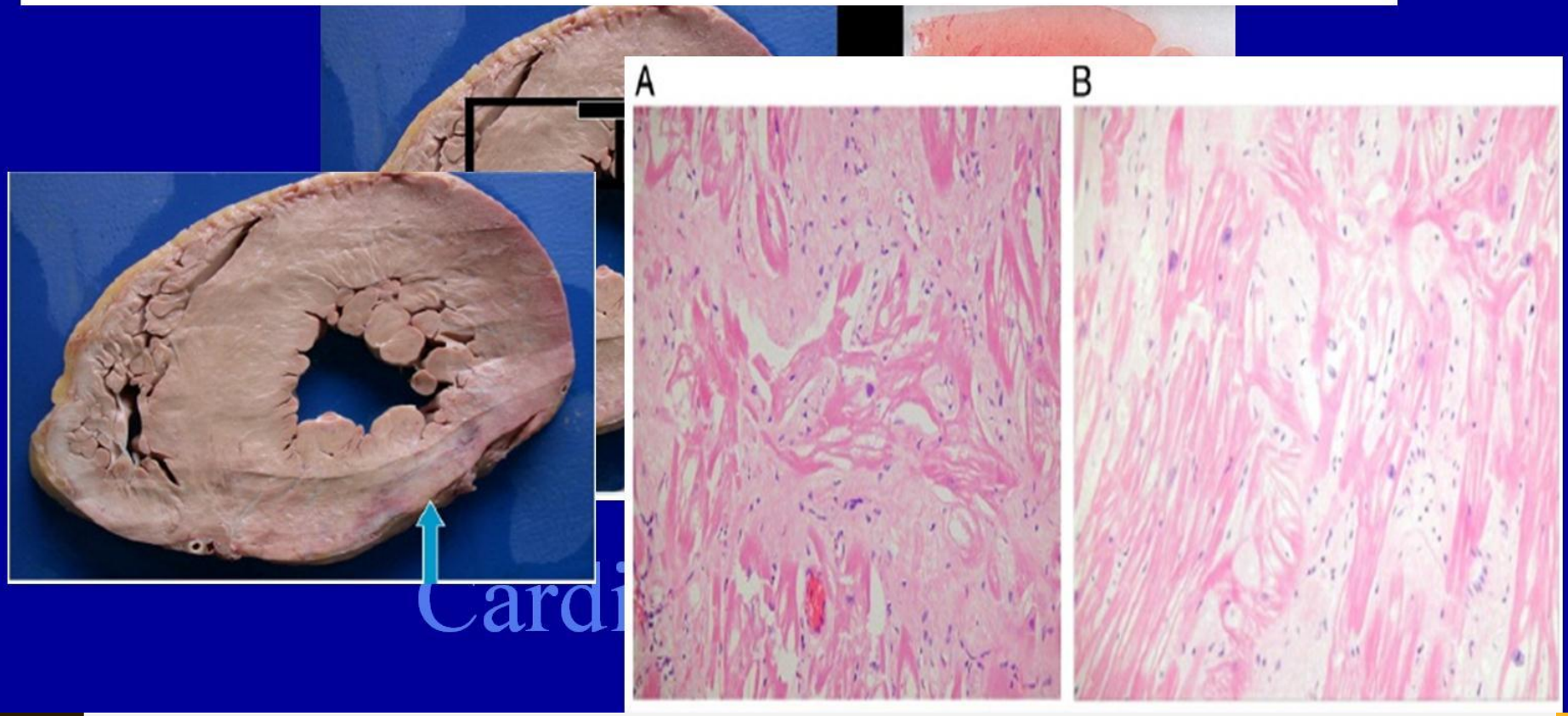
Cardiovascular Pathology 19 (2010) 293–301

CARDIOVASCULAR PATHOLOGY

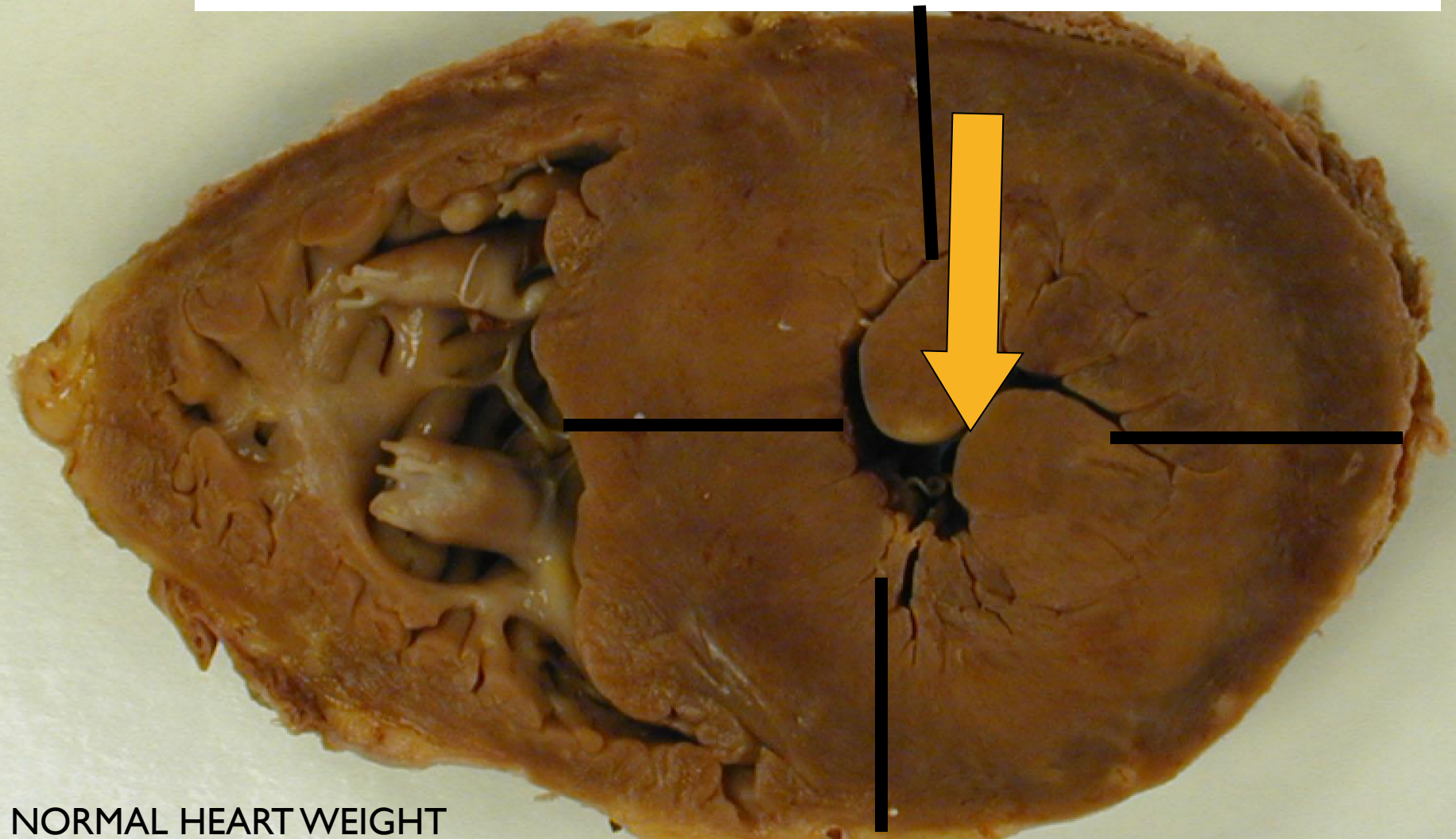
Original Article

A detailed pathologic examination of heart tissue from three older patients with Anderson–Fabry disease on enzyme replacement therapy

Mary N. Sheppard[a,*], Paul Cane[a], Richard Florio[a], Nicholas Kavantzas[b], Lydia Close[c], Jaymin Shah[c], Philip Lee[d], Perry Elliott[c]

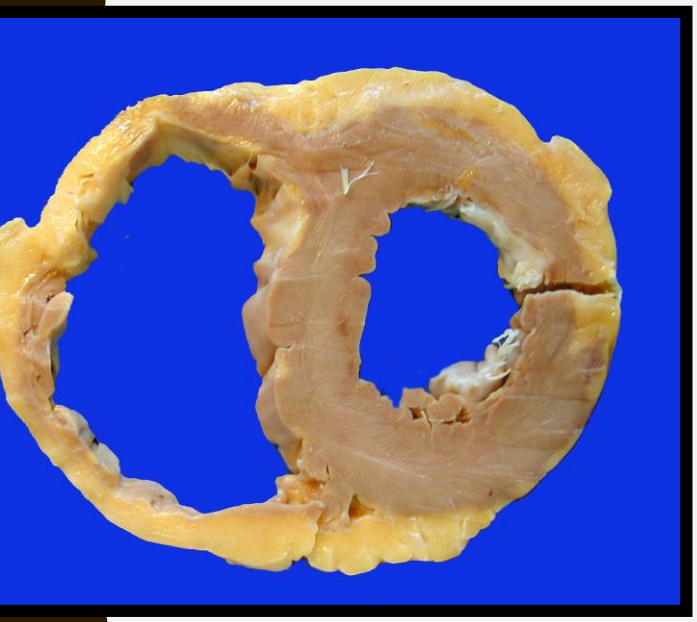


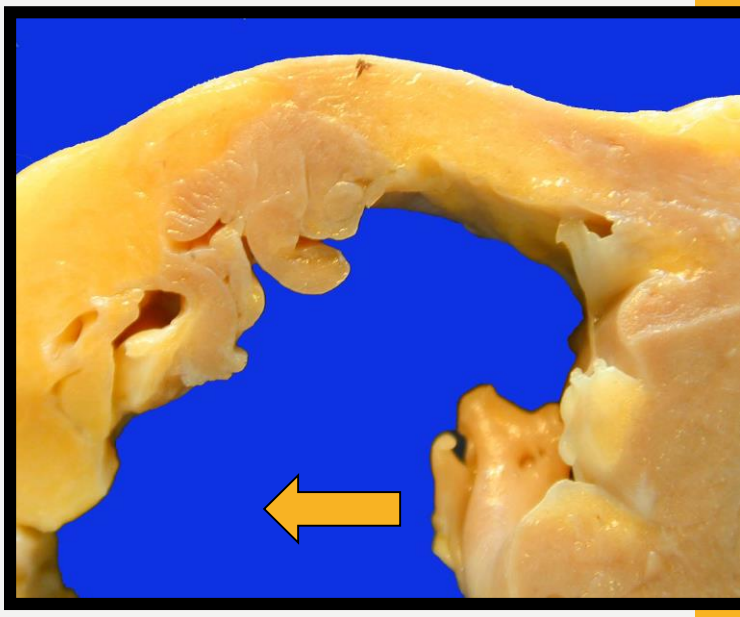
HYPERCONTRACTED HEART
DEATH IN SYSTOLE



NORMAL HEART WEIGHT
INCREASED CIRCUMFERENTIAL THICKENING
SMALL CHAMBER DIAMETER

DILATED RV WITH INVOLVEMENT LV





HEART

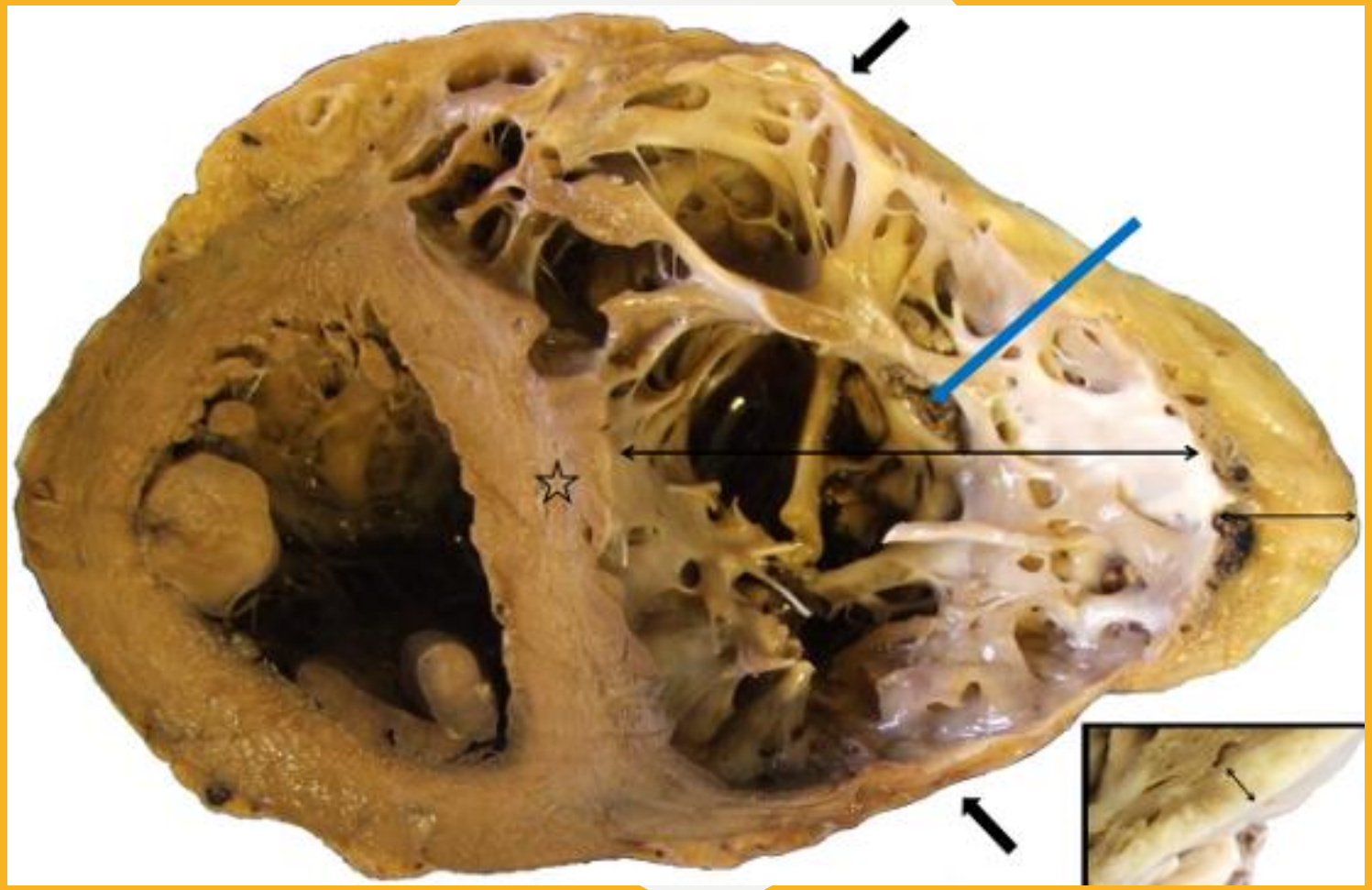
Arrhythmogenic right ventricular cardiomyopathy

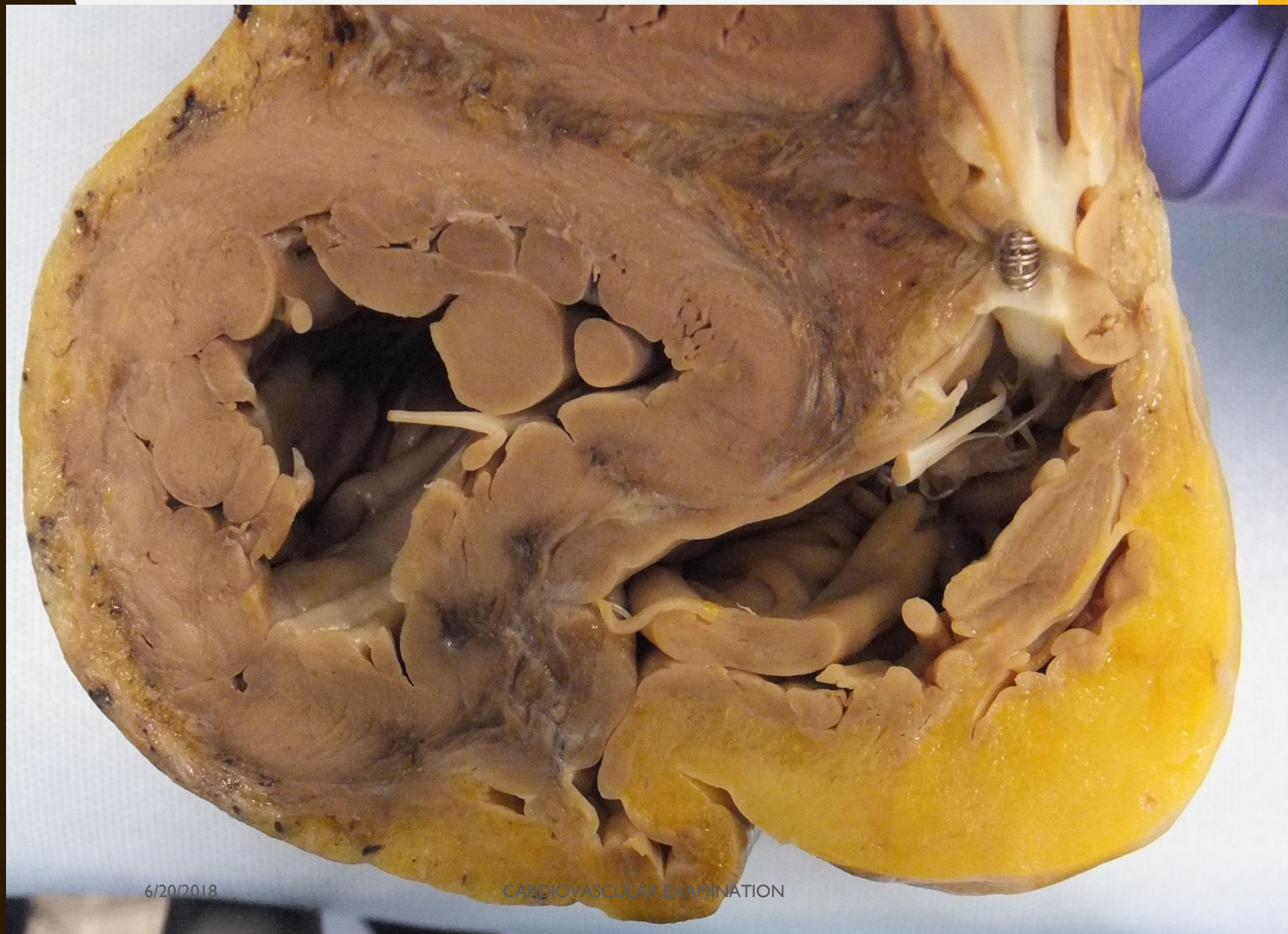
A S John, R H Mohiaddin and M N Sheppard

Heart 2004;90;1102
doi:10.1136/hrt.2003.030841

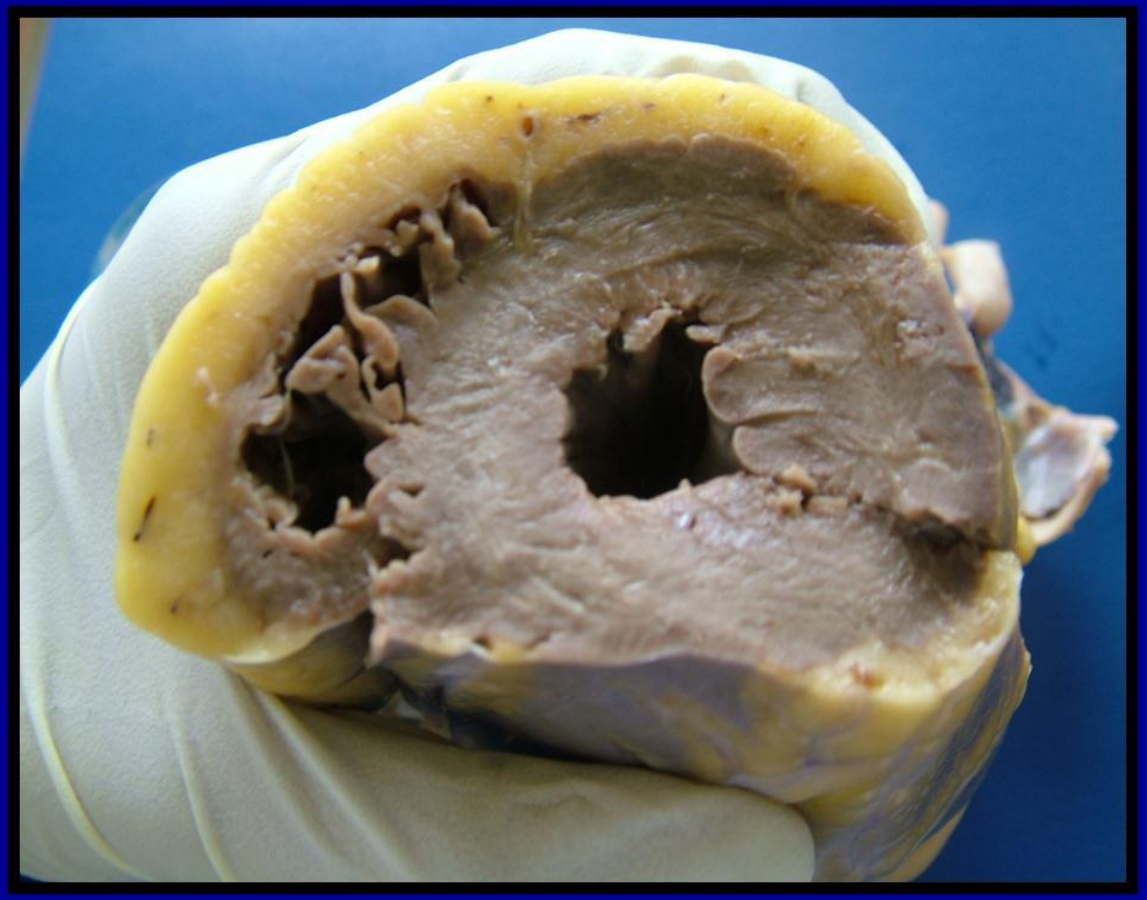
IST IN SUDDEN
009

Fig 3: *Cross section of right and left ventricle showing dilatation of the right ventricle. There is also thinning of the right anterior and posterior walls with scarring. Scarring can also be seen on the right side of the septum.(*) There is transmural fatty hypertrophy of the right lateral wall. Note also pale adherent thrombus within the right ventricular trabeculae and pale thickening of the subendocardium of the right ventricular wall.*

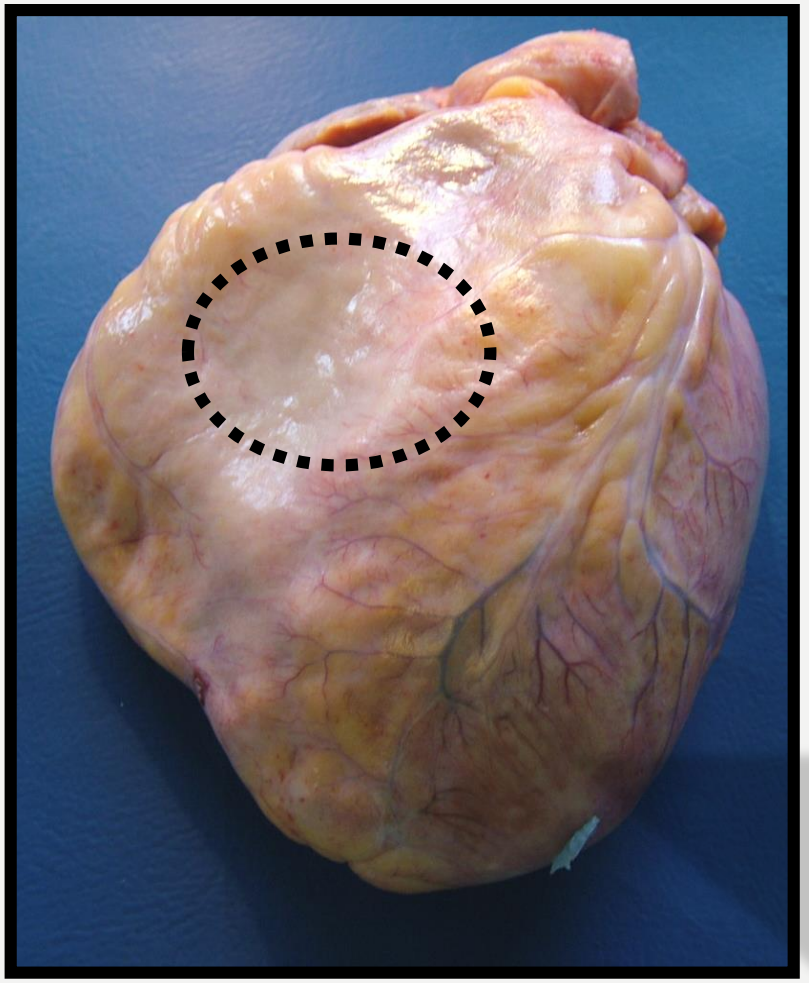


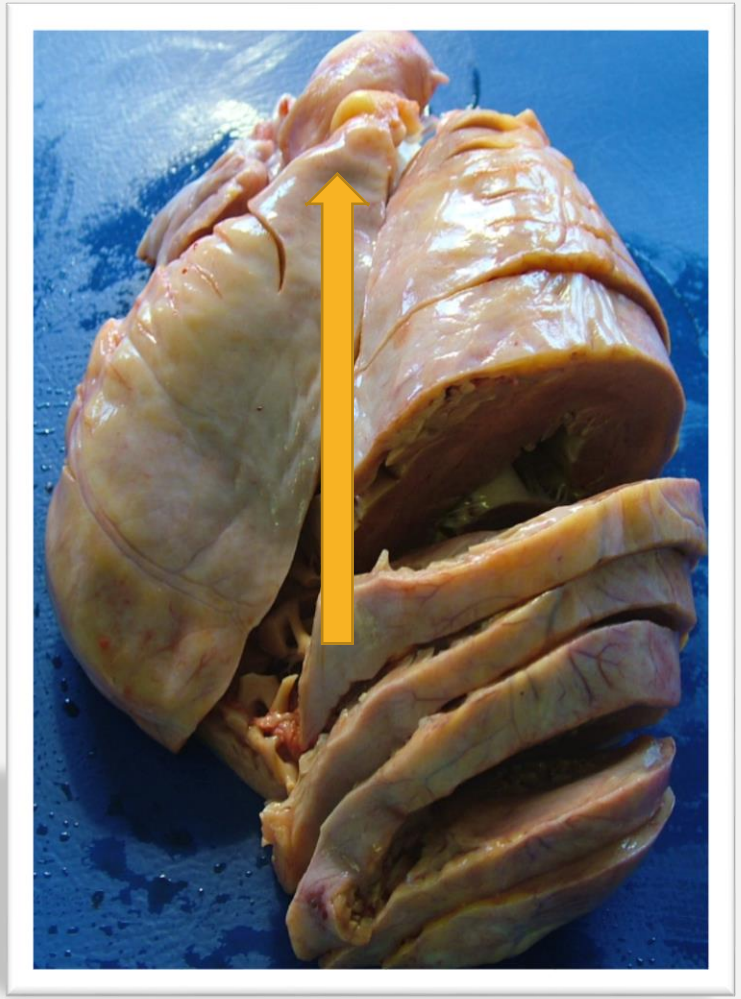


What when you have LEFT VENTRICLE HYPERTROPHY

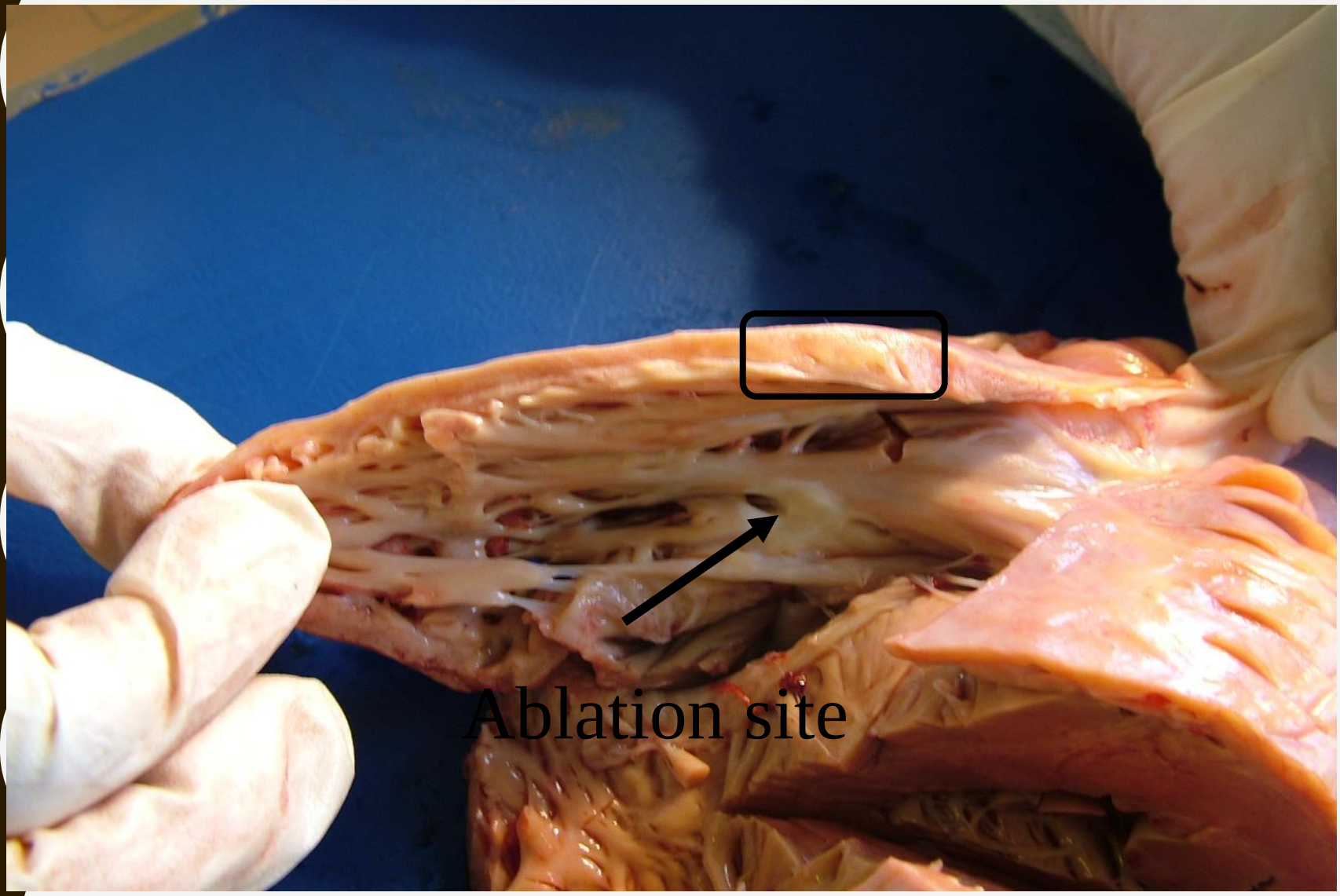


NORMAL APPEARING HEART

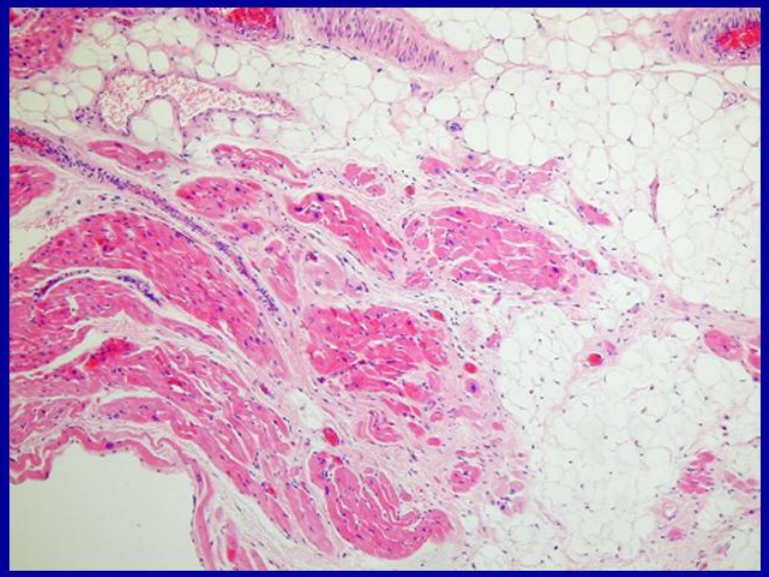


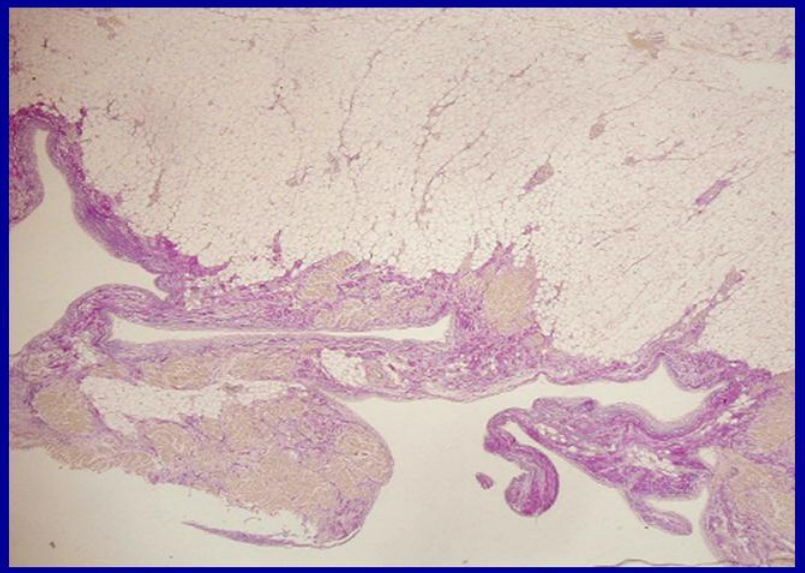


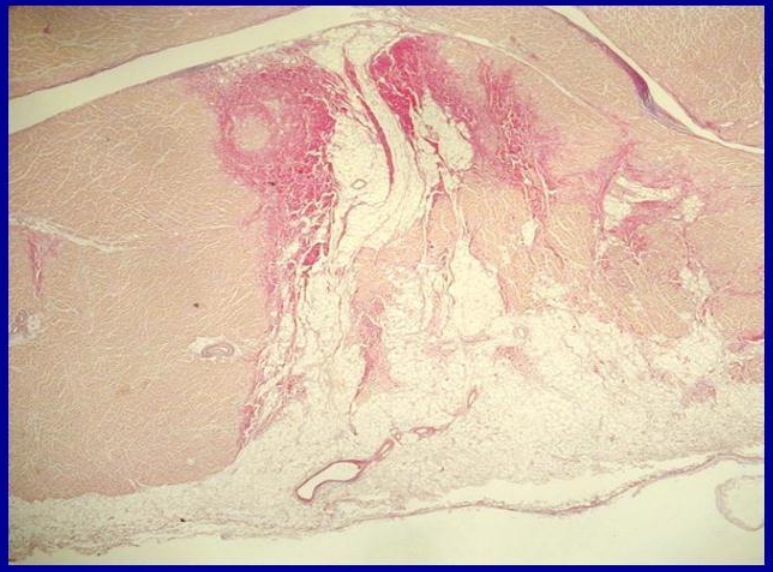
FATTY AREA

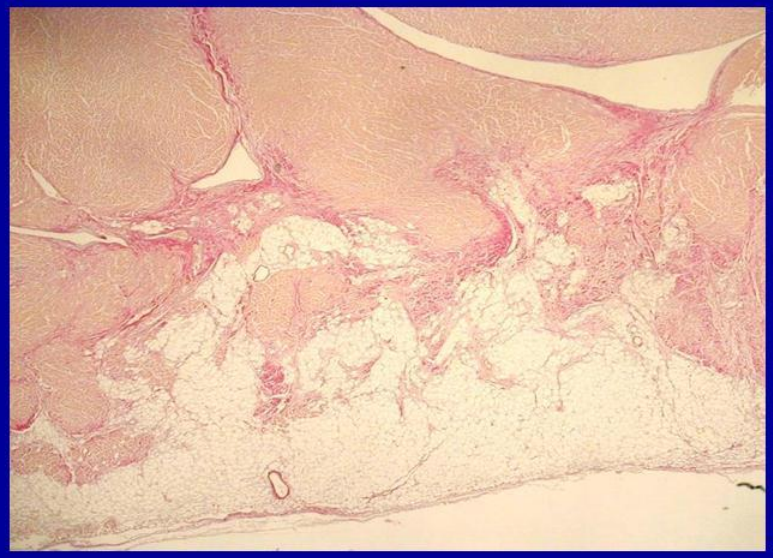


Histopathology in the right

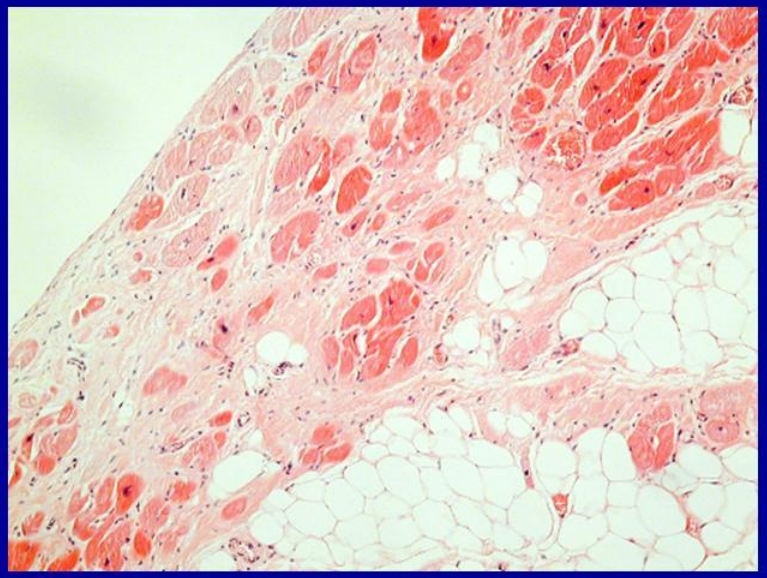


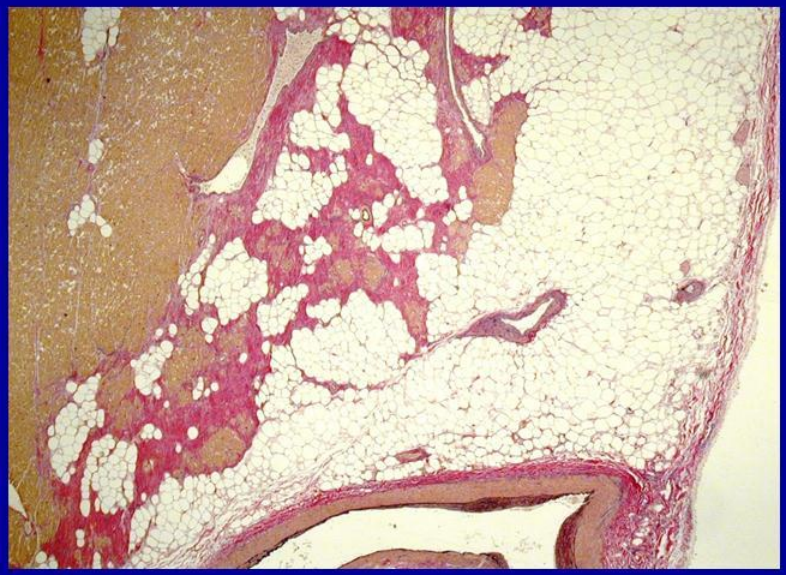


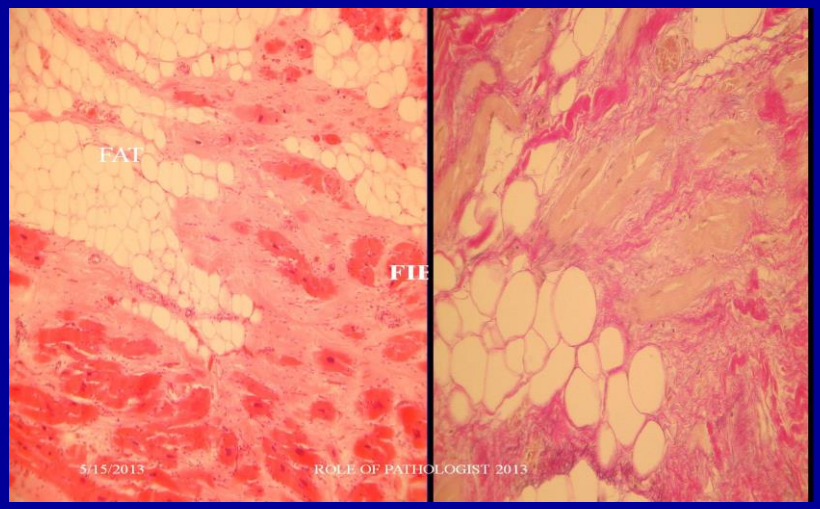


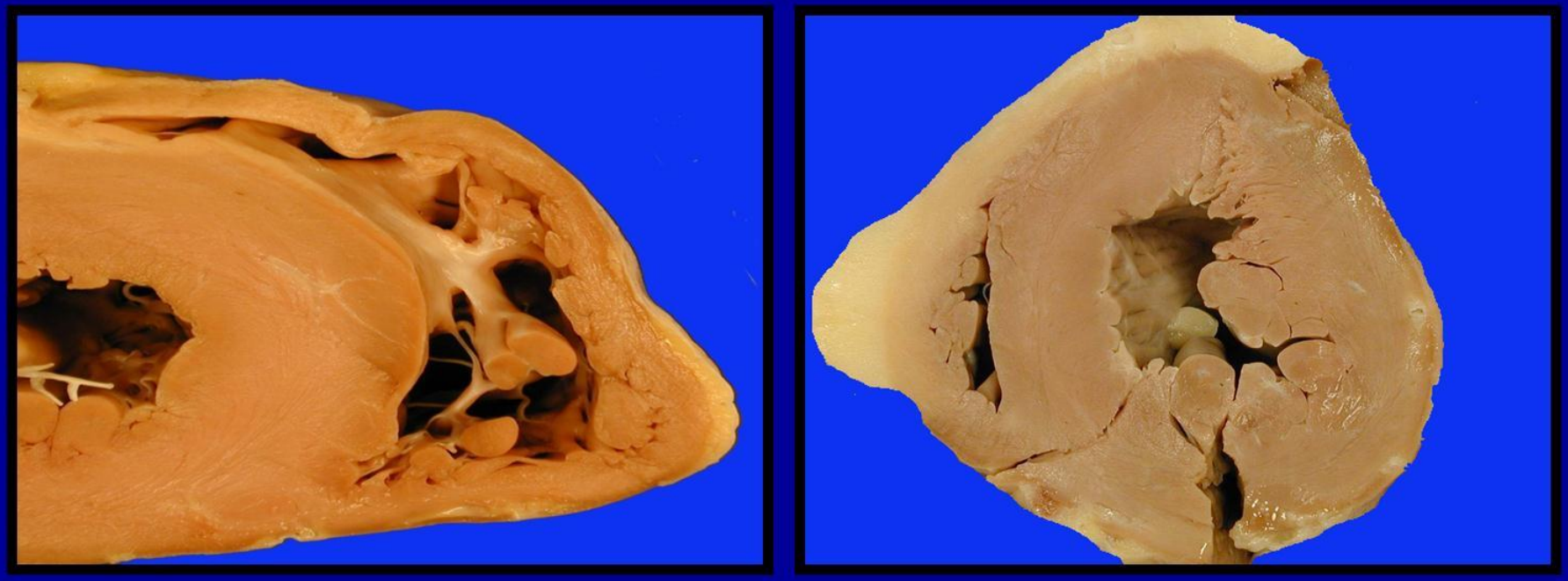


Histopathology in the left

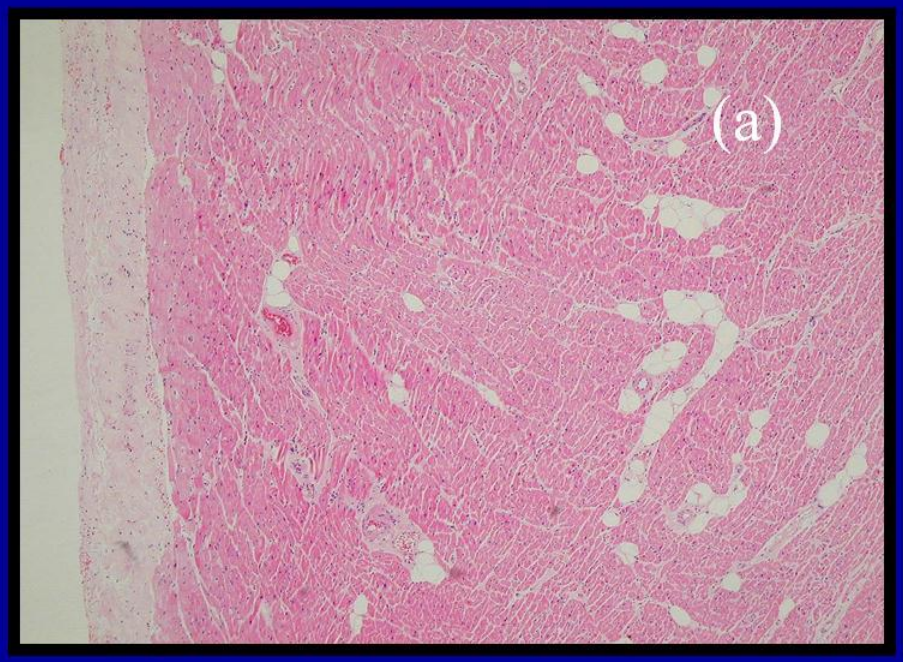








Tansey and Sheppard, Histopathology 2007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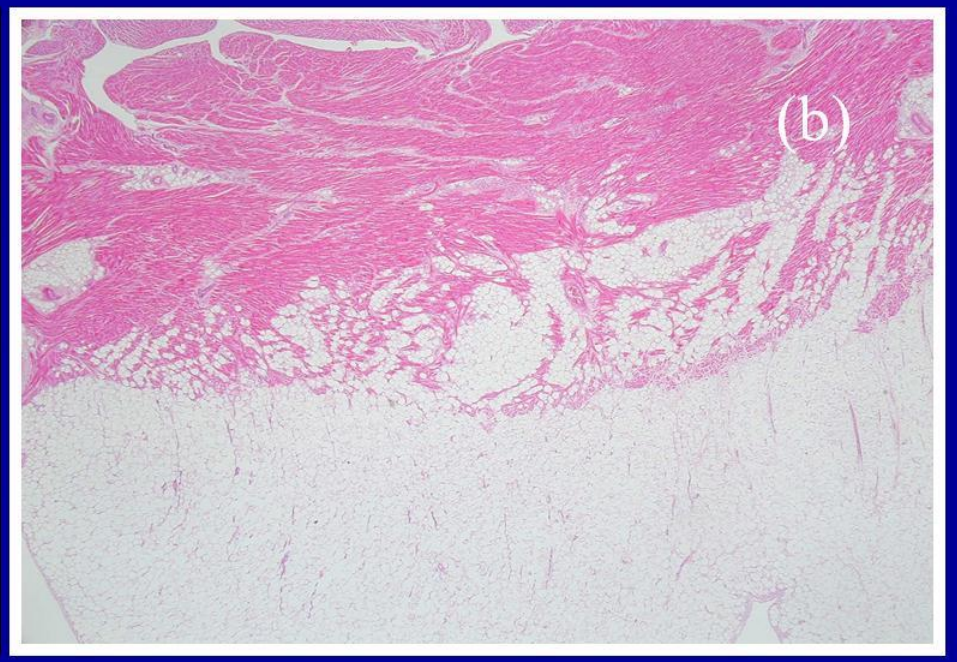
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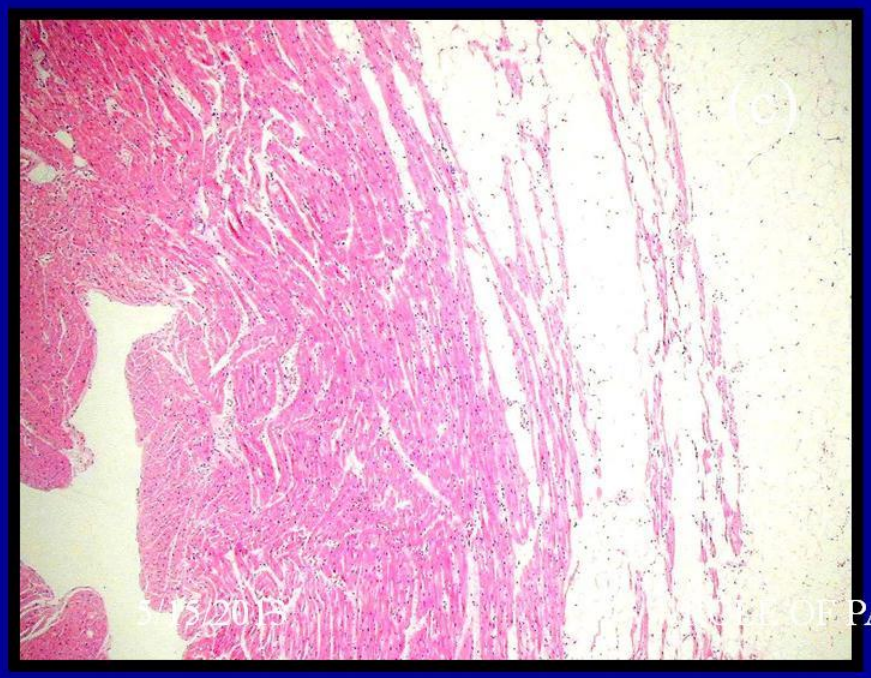
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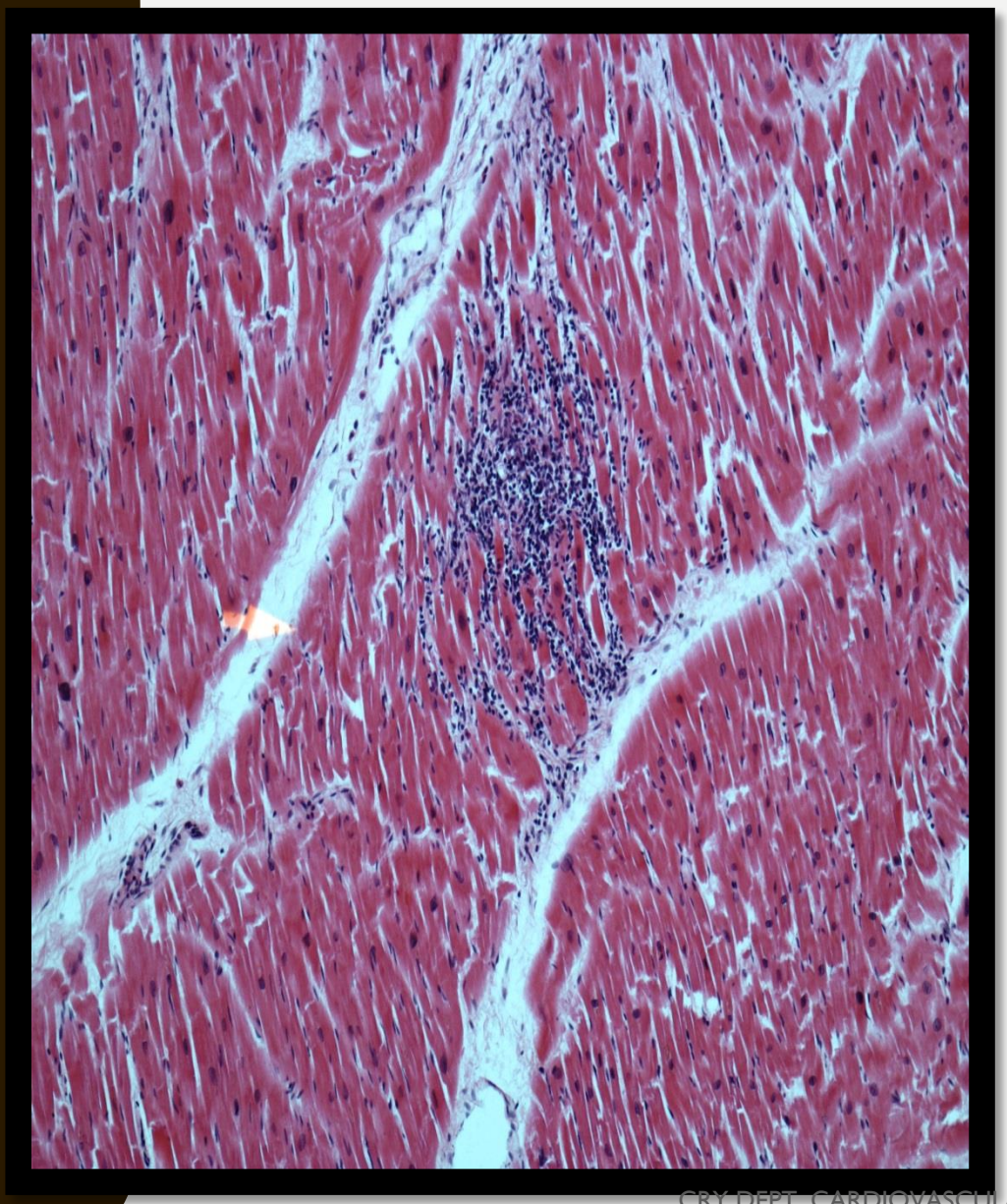

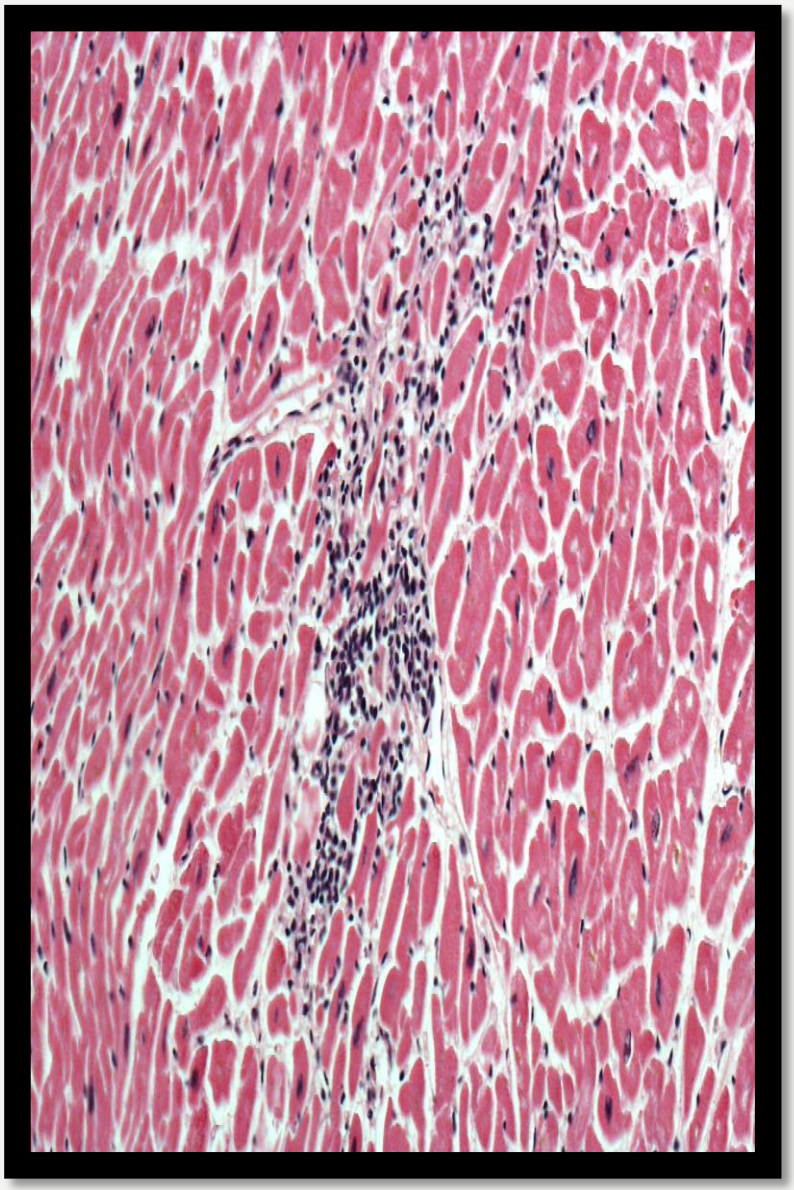

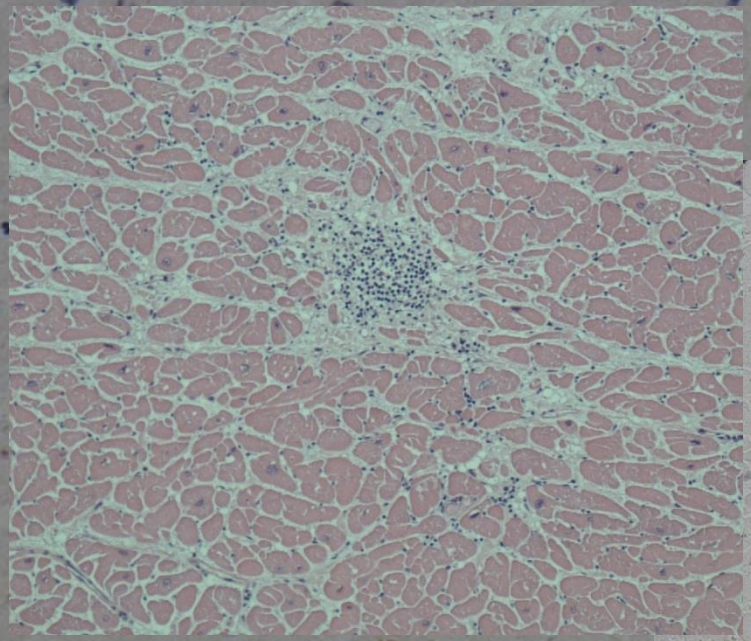
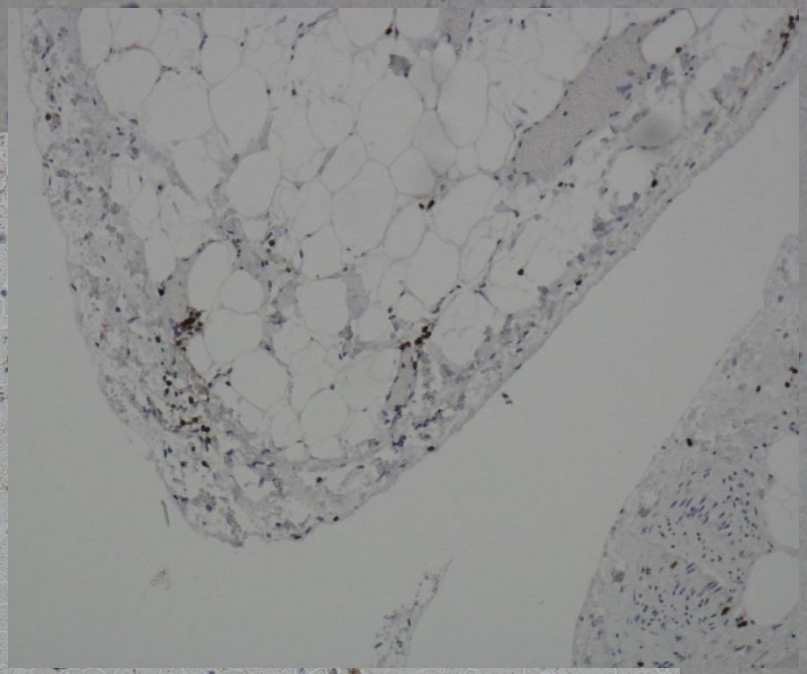

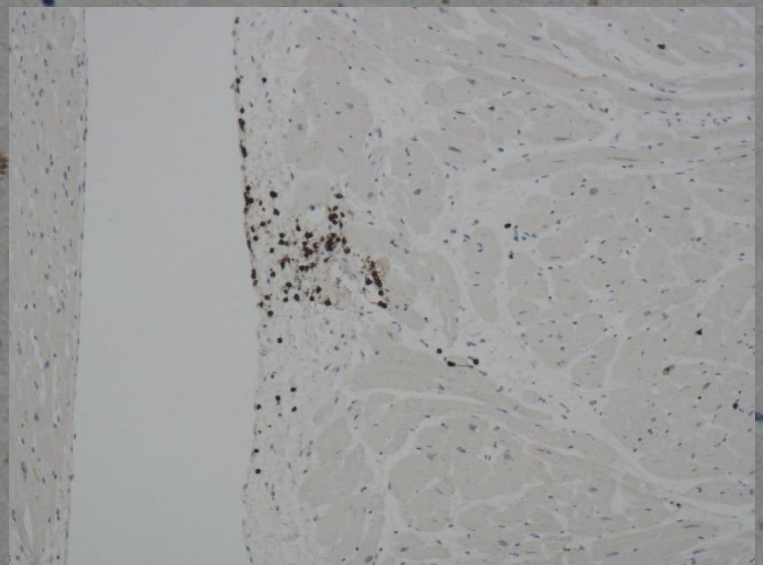
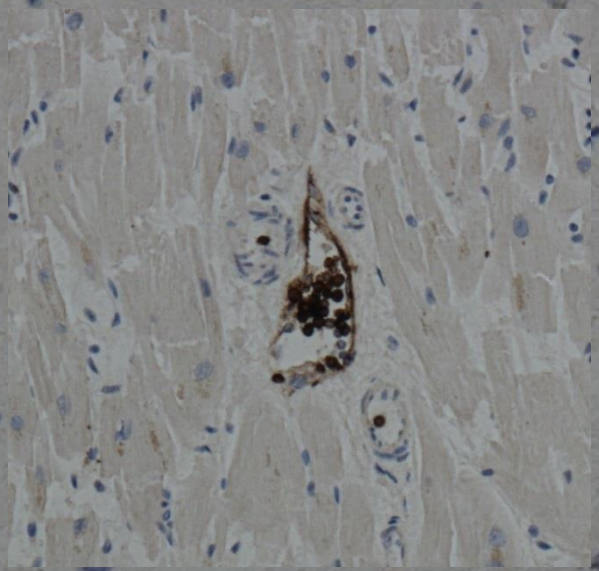

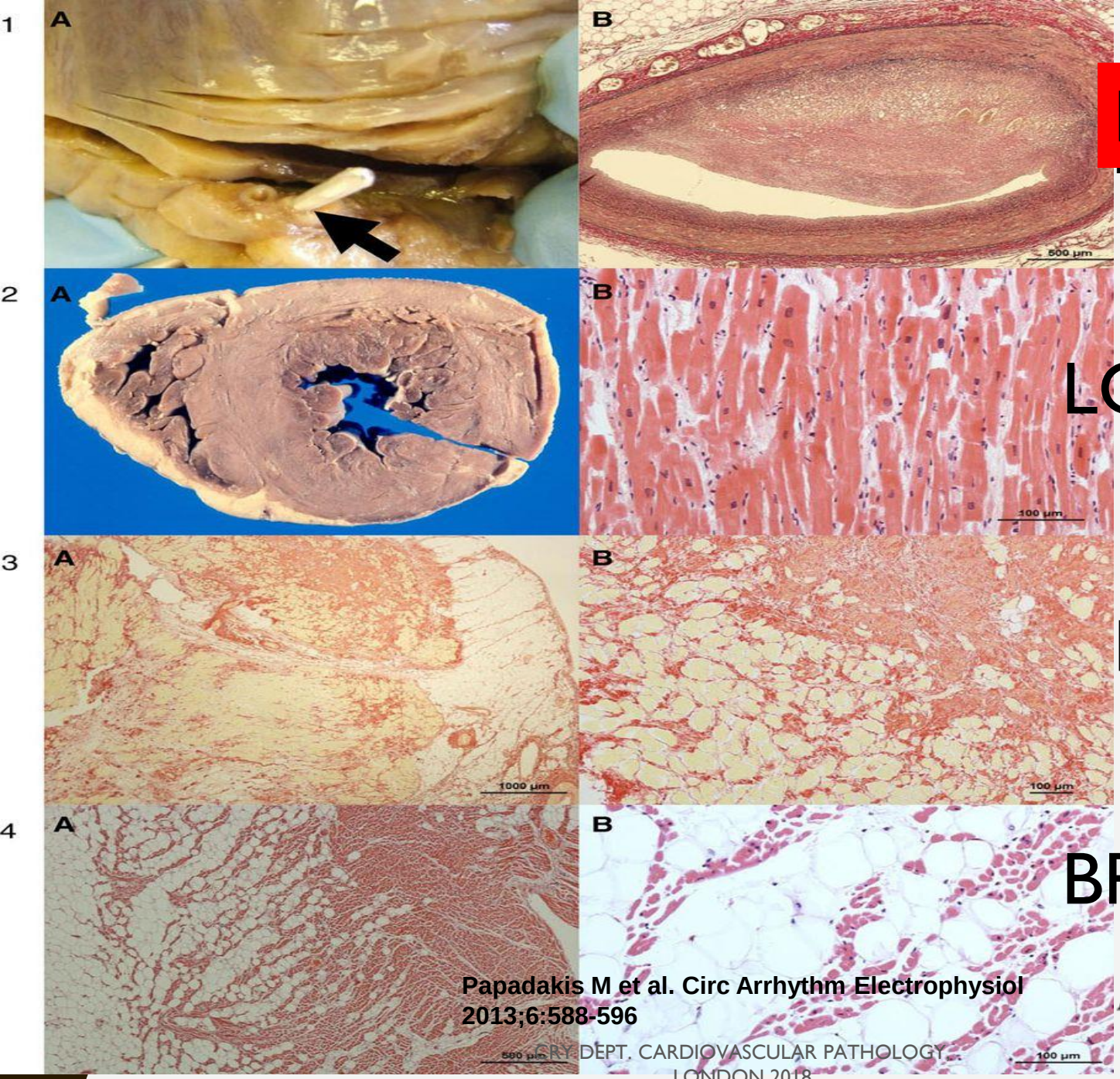

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Papadakis M et al. Circ Arrhythm Electrophysiol 2013;6:588-596

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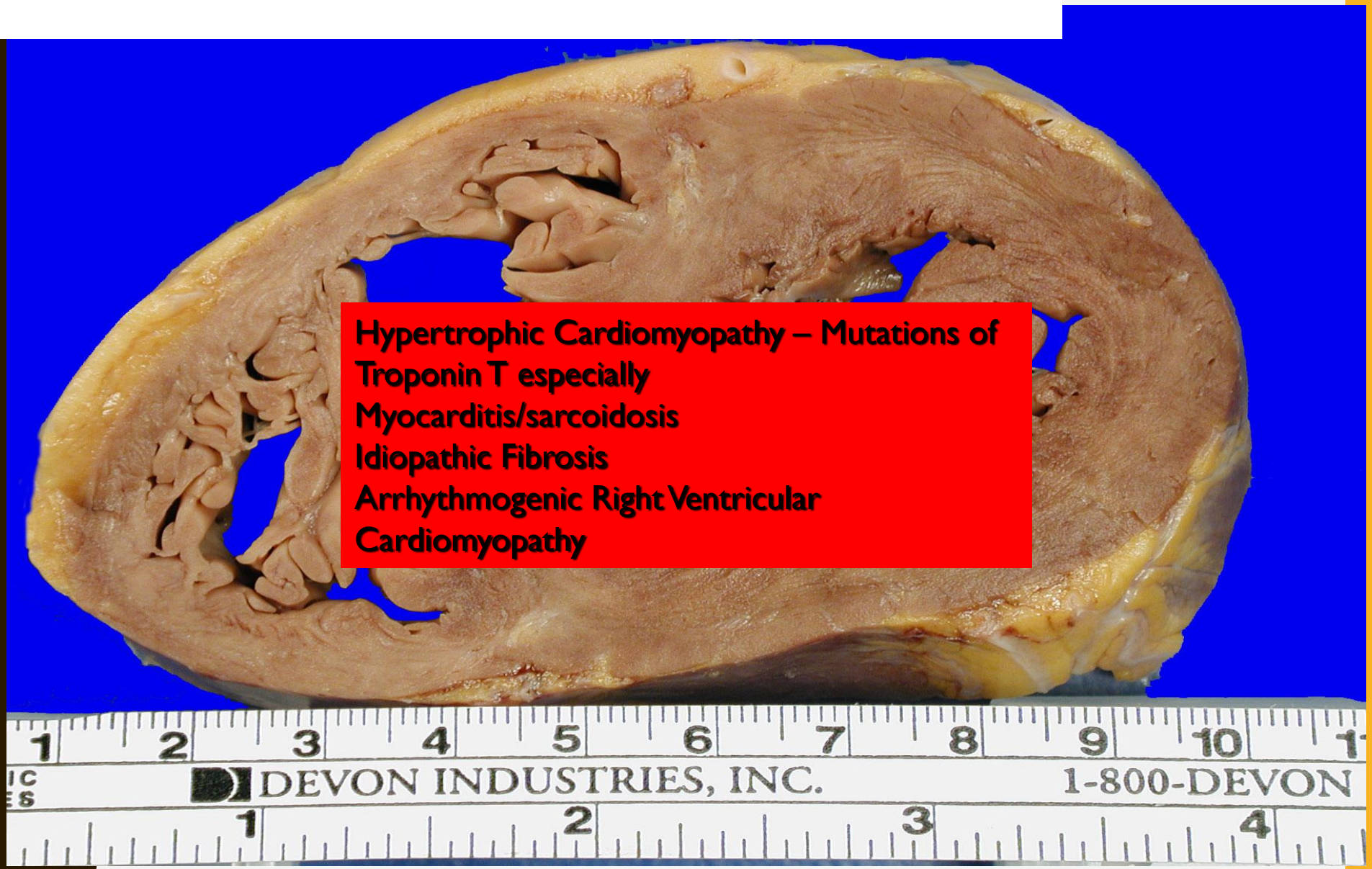
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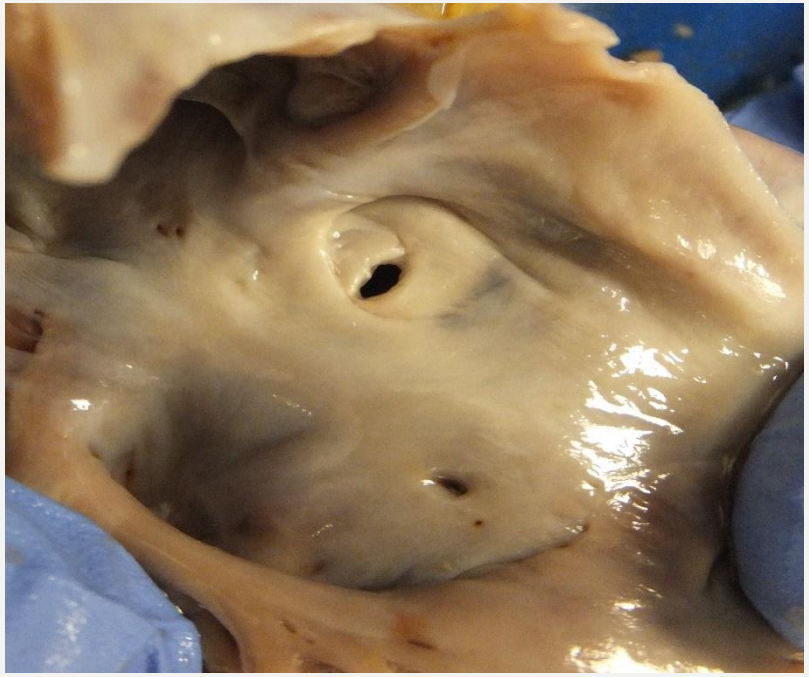

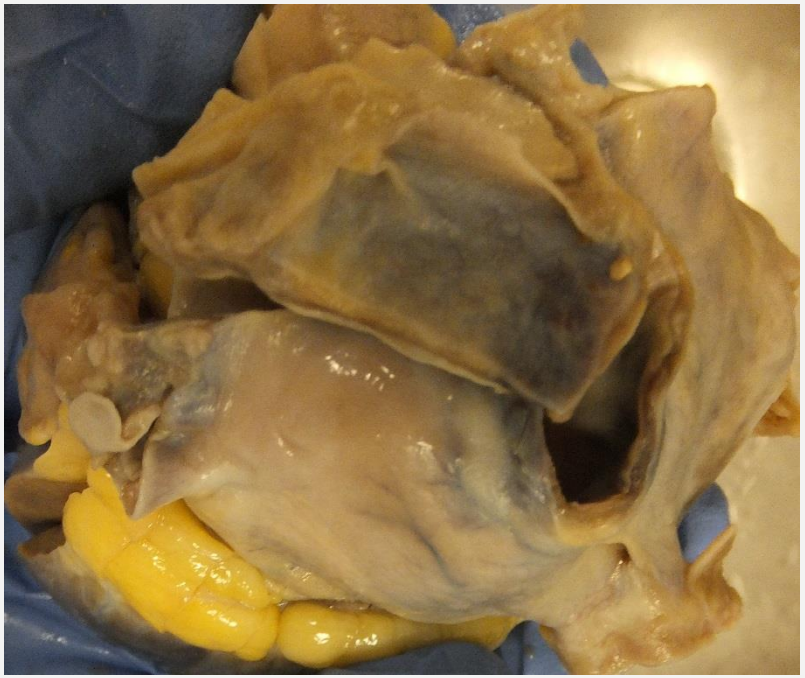

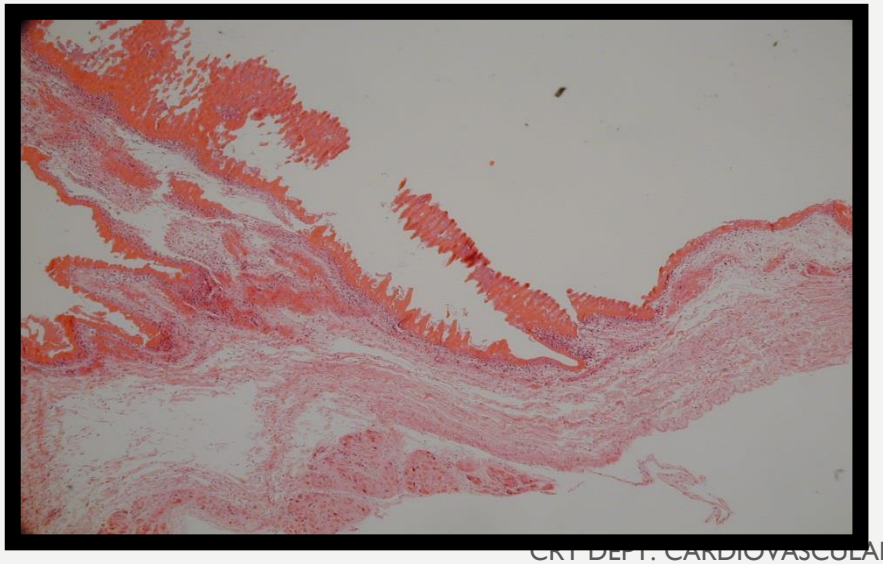

PULMONARY VEIN ISOLATION WITH ABLATION VIA TRANSSEPTAL ROUTE FOR ATRIAL FIBRILLATION