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Saturday, August 13, 2016
11:00 - 11:25  Art Autopsy and Anatomy - A History of the Brain from Galen to Rhoton
A HISTORY OF BRAIN EXPLORATION
FROM GALEN TO RHOTON

EDWARD MEE 2016

THE MINDS BEHIND THE BRAIN
The Egyptians

- Little regard for the Brain
- Extracted brain via nose before embalming
3D CT of Paankkenamun
Aristotle

Reversed thinking and suggested that the seat of the soul was in the heart.

Reverted to Egyptian view.
- Brain was a cooling device for the heart
- Brain is devoid of sensation and therefore could not be the home of feelings
Galen 130-200

- Surgeon to the Gladiators in Pergamon
- Human dissections banned
- Fluid model of brain
- Described 7 cranial nerves
- Ventricular theory of brain function
- Book of Galen-collected works
- Library lost in a fire
The first major translator of Galen into Arabic was the Syrian Christian Hunayn ibn Ishaq.

Hunayn translated (c. 830–870) 129 works of "Jalinos" into Arabic.
Medieval Cell Theory 1497

I Common sense
II Reasoning
III Memory/movement
Leonardo da Vinci
April 15, 1452 – May 2, 1519
The Note books
Vesalius 1514-1560

De Humani Corporis fabrica
pub 1543 663 folio pages
Master anatomist
Critical of Galen’s anatomical work
Debunks rete mirabile
Reversed ventricular fluid theory
Masterful promotion of his work
Publishes in Basel
Art School 1550
The mind and the brain were considered separate - Dualism

Pineal gland was the seat of the soul and where mind and matter interact

Hydraulic system of vital liquids.
Rembrandt 1620
Virtuosi group in Oxford
Private practice flourished

1650 epidemics and autopsies performed

1671 Described the Circle of Willis
Gyrus was the centre for movement

1664 Cerebrae Anatomie

Christopher Wren illustrated his text

Rejects ventricular doctrine
Circle of Willis 1671
Luigi Galvani 1791
Hunter Brothers  Art&Anatomy

1772
Convolutions and lobes 1800’s
Wax Models Vienna 1800
Charcot 1860’s

- Developed an interest in diseases of the brain and spinal cord
- Performed autopsies and developed medical photography
- Correlated autopsy findings and diseased anatomy of the nervous system
Paul Broca 1860

- Born 1824 near Bordeaux
- Brilliant student and appointed surgeon to Bicetre Hospital
- April 12, 1861 Leborgne admitted under his care with gangrene
Hitzig and Fritsch pub 1870

- Home laboratory used to electrically stimulate the cortex of dogs
- Searched the cortex for stimulation sites
- Discovered a motor centre
- Motor centre represented body parts
- Somatotopically organised
Hughlings Jackson 1835

- Appointed to Queen’s Square in 1862 by Brown-Sequard
- 1869 Epilepsy was due to excessive local discharge of the grey matter
- Quiet unassuming serious and hobby less
Function of the Frontal Lobe

1848 Phineas Cage
No autopsy
David Ferrier

- Studied the effects of damaging the motor cortex in monkeys
- Presented his findings at a gathering at the West Riding late 1873
- 1874 conflict with publication and eliminated dog results from his paper
Localisation of Cerebral Function

- 1861 Broca
- 1886 Alexander Robertson
- 1869 Hughlings Jackson
- 1870 Hitzig and Fritsch
- 1873 Ferrier
- 1870’s Charcot
Sir William Macewen

- Born 22 June 1848 Isle of Bute
- Youngest of 12 children
- Read the works of Charcot, Hitzig and Jackson and Ferrier
- 1876
- Performed first planned brain operation on a dead boy
  - Operation consent refused
  - Autopsy granted
Late 1800’s Localisation
Sherrington

Eccles
10 billion neurons with 10,000 synapses
Harvey Cushing 1900
Wilder Penfield 1960’s

Motor control area of face
Walter Dandy
Clipping of Aneurysm 1936
1978

CT scan

Auckland

Neurosurgery at Auckland Hospital
Stealth Neuro-navigation
3d Modeling and Guidance

1995 Iraq 2003
Modern Imaging
Functional Scanning
Language Circuit
Awake Craniotomy  Cortical Stim.  S7 guidance  Pentero
INFRARED 800

INFRARED 800 is an efficient technique which delivers critical information quickly and conveniently to the surgeon without procedural disruption, optimising the overall operating work flow. This fluorescence

2010

Operative Microscope and intraoperative angiogram
Awake Image Guided Surgery
Modern Autopsy 2002

Decline in autopsy rate
1996  1000 autopsies at Auckland Hosp
Medical students banned from coroner's 2002
2004  27  Hospital autopsies
40% of death certificates may be incorrect
Digital Jeffrey Dahmer 1994

Plastinates 2000
Deep Brain Stimulation
Modern Op Rhoton Art
Modern Artist
Francis Bacon Figurative Art
How the Brain Works 2016