Ebrain, E-learning & EAN Education

Hannah Cock
Institute of Medical & Biomedical Education
Epilepsy Group
Declaration

Dr Cock has received:

– Hospitality from all major AED manufacturers
– Invited talks & honoraria for UCB Pharma, Janssen-Cilag, Sanofi-Synthelabo, GSK, Eisai
– Unrestricted Research Grants from UCB Pharma, Johnson&Johnson & Pfizer

Dr Cock is Chair of EAN EC (2014-) & Clinical Lead on ebrain (2010-)

Dr Cock prefers gadgets to paper

This presentation reflects the views of author, and are independent of the meeting sponsor
Outline

• Introducing ebrain
• EAN Education & Accessing ebrain
• Why e-brain?
  – Adult learning
  – Changing culture & expectations
• Overview ebraincontent & features
• Future developments & how you can contribute
• Try it out
Introducing ebrain

• E-learning resource, Launched 2011

world’s largest, most comprehensive web-based training resource in clinical neuroscience.

• Not For Profit
  – >500 authors, 25 module editors, 3 + 3 clinical leads
  – $150,000/year IT Development & Support
  – EAN, UK Joint Neurosciences Council
  – Institutional & Individual subscriptions

Holmes Lancet Neurol 2012
Dassan Neurology 2012

www.ebrainjnc.com
ebrain Curriculum

25 modules, 660 lessons
Peer-reviewed
Self assessment
Bibliography

- Speciality
  - Neurology, Neurosurgery, Neuroradiology, Pain, eSpine
- Curriculum/learning pathways
- Topics
  - Epilepsy, Stroke......

Additional Features

Virtual Patient
150 Webinars (EAN 2014, 2015; SE Colloquium....)
Quiz bank/assessment capabilities
Full Bibliography
Accessing ebrain

• Direct
  - Free to Hinari/Low income countries (£0)
  - Reduced Rates Middle Income (£75/year)
  - Full individual subscription (£150/year)

• Via EAN
  - Join EAN (EUR45 RRFS; 75; 150/year)
  - Single Sign on via EAN website

www.ebrainjnc.com
Individual Membership in EAN Scientific Panels
One free Teaching Course at EAN annual congress
Access to VIP (catering) area at EAN annual congress
Access to selected congress webcasts on the EAN website after the congress
AAN Joint Membership (10% off the EAN membership fee)
- Resident
- Research Fellow
- PhD Student
- <3y post training without permanent position
- 45EUR/Year
All e-learning activities are free-of-charge for EAN registered users. Answer all questions correctly and you will receive one hour of CME. Every month one article is chosen for online learning. The following articles are available free of charge:

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<th>Published in</th>
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<td>September 2015 - Efficacy and safety of pharmacological treatments for acute Lyme</td>
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<td>October 2015</td>
<td>October 2015 - Non-aneurysmal subarachnoid hemorrhage in 173 patients: a prospective study of long-term outcome</td>
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<td>November 2015</td>
<td>November 2015 - Patterns of anti-inflammatory drug use and risk of dementia: a matched case-control study</td>
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<td>January 2016</td>
<td>January 2016 - Intravenous thrombolysis for acute ischaemic stroke in the elderly: data from the Baden-Wuerttemberg stroke registry</td>
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<td>February 2016</td>
<td>February 2016 - Clinical dissection of childhood occipital epilepsy of Gastaut and prognostic implication</td>
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<td>March 2016 - Diabetes mellitus exacerbates the clinical and electrophysiological features of Guillain–Barré syndrome</td>
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<td>May 2016</td>
<td>May 2016 - Distinguishing clinical and radiological features of non-traumatic convexal subarachnoid hemorrhage</td>
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Monthly article
1 CME Point, Single Best Answers (also EBN practice!)
Why ebrain?

- Adult Learning theory

![Diagram]

Adult Learners

- need
  - problem centred learning

- most motivated by
  - subjects relevant to them

- bring experience
  - basis for learning
  - including mistakes

- need to be involved
  - in planning instruction
  - in planning evaluation

- in
  - employment
  - life
Why ebrain?

• Adult Learning theory
• Changing learners

Elkind, Neurology 2009
Why ebrain?

• Adult Learning theory
• Changing learners
• Increasingly globalized (but unequal) world

Elkind, Neurology 2009

Joeri VanDenBurg,
www.howcoolbrandstayhot.com
elearning

Advantages
• Wide audience
• Flexible/convenient
• Built in self-assessment
• Supports continuous learning
• Efficient
• On-going updating
• Multi-media
• Interactive

Dependent on
• Self motivation
• Technology access
• Maintaining attention

Appears no less effective (including for clinical skills)

McCutcheon, J Adv Nursing 2015
ebrain: the guided tour
Welcome to the ebrain e-learning program, a gold standard in interactive online learning for professionals in the neurosciences.

Returning Clinicians, please click the 'Access your e-learning' button on the left to access your learning.

New visitors, organisations and administrators please select a menu option on the left.

For university undergraduate study, please select the 'ebrain Lite' button from the menu options on the left.

ebrain is a resource that can be used by both trainees and trainers to support continuous professional development. Lessons can be studied individually or in combination. Certificates are provided and can be used within portfolios.

ebrain, a Not for Profit initiative, is brought to you by the Joint Neurosciences Council and The European Academy of Neurology, and represents the world’s largest, most comprehensive web-based training resource in clinical neuroscience.

Led by Professor Simon Shorvon, Mr Simon Thomson, Dr Hannah Cock and Dr Vitalie Lissic, the 450+ contributing clinicians form part of a multi-disciplinary team of expert authors and reviewers drawn from all areas of the neurosciences, both in the UK and across Europe.

For more information about the curriculum

Why not also visit the Neuropathology and Ophthalmic Pathology teaching sections kindly provided by St James University Hospital in Leeds, UK, via the following link: Virtual Pathology at the University of Leeds

Partners

Joint Neurosciences Council
European Academy of Neurology
Society of British Neurological Surgeons
British Neuropathological Society
British Society of Neuroradiologists
British Paediatric Neurology Association
British NeuroPsychiatry Association
Welcome to the ebrain e-learning programme

First time visitors:

**Step 1. Registration:** Please complete the Registration process by clicking on the My profile settings menu link on the left of the screen. (For assistance with this and other tasks, please choose from the 'How To' Movies, again on the menu to the right. You can also download the ebrain Userguide from the menu).

**Step 2. Computer Checker:** The ebrain website technical checker enables your computer to automatically make sure you have the correct software needed to use the e-learning materials fully. (See the Technical Checker movie on the right. The Popup Blocker movie may also be helpful).

**Step 3. Getting Started:** When you first login, please complete the Getting Started: Common Tasks, Features and Functionality lesson, which will help you make the most of working with ebrain.

Cookies
This site uses cookies. By logging in and continuing to browse the site you are agreeing to our use of cookies.
Clinical assessment
Neurological issues in General Medicine & Surgery
Surgical Principles & Techniques
Core radiology
Headache & facial pain
Ischaemic Vascular disease
Haemorrhagic Vascular Disease
Transient Loss of Consciousness & Epilepsy
Neurological infections
Neuroinflammatory diseases
Movement disorders
Coma & Sleep
Neuro-ophthalmology
Neuro-otology
Spinal Trauma
Elective Spinal Disease
Tumours & cysts
Hydrocephalus & CSF pathologies
Neurorehabilitation & Spinal Injury Rehabilitation
Neuropsychiatry
Lesson Overview
This session provides an overview of issues relating to carotid and vertebral artery dissection.

Topic 1
Launch Lesson
To launch the lesson, please click the title below.

Lesson Feedback
To provide feedback on this session, and to view all other learner feedback, please click below.

Topic 3
Lesson Certificate
To generate a certificate for this lesson, please click below.
NB - You must first provide lesson feedback to be able to generate a certificate.
Ebrain Lesson Format

1500-2000 word paper

3-5 specific learning objectives

Assessment

Peer-reviewed

Multimedia-rich

Interactive
Approach

There are a lot of things you could do when examining the limbs - so to allow you to remember what to do and remember what you have found it is useful to have a framework to work within. We will return to this later to explore pros and cons of using a different order of examination.

Before you start the examination you should have be thinking about what you might find on examination on the basis of the history - what you have to look for.

During the examination you need to think about what you are finding. Can abnormalities be accounted for by difficulties with examination technique?

Are abnormalities reliable? Consistent?

It can be helpful to 'summarise' your findings in words in your own head as you go along (the patient may well find it rather distracting if you said it out loud)

In summary: Think.
Power in Arms

Standard movements tested:

Watch the video shown opposite and below.

- Shoulder abduction: deltoid
- Elbow flexion: biceps
- Elbow extension: triceps
- Wrist extension: extensor carpi ulnaris and radialis
- Finger extension: extensor digitorum communis
- Finger abduction: index finger: First dorsal interosseous
- Little finger abduction: abductor digiti minimi
- For finger and little finger abduction remember to fix the joint
- Thumb abduction: abductor pollicis brevis
Joint Position Sense

Watch the video shown opposite.

Explain to the patient what you are going to do and demonstrate the movement with the patient looking at the joint.

Test distally starting with large movements. If the movement is felt reduce the amplitude to find the smallest movement reliably detected (usually an astonishingly small movement).

If the patient is unable to reliably detect the movement (remember 50% correct is chance) move to a more proximal joint.

Romberg’s test is also a test of joint position sense.
Self Assessment

Question 1

Select true or false for each of the following statements.

When examining the motor system:

**Statement A**

Value: 1

Wasting, increased reflexes and upgoing plantars are upper motor neurone signs.

- True
- False

**Statement B**

Value: 1

Asking the patient to grip your fingers and pull them towards you is useful screening test.

- True
- False

**Statement C**

Value: 1

MRC grade 3 power indicates a muscle cannot overcome resistance.

- True
- False
Appropriate Imaging Tools to Make a Diagnosis

**CT Angiography**

CT angiography can identify mural thrombus (thickening of the vessel wall by material with a different density to normal tissue) and allows accurate visualisation of the vessel lumen.

A dissection flap, long tapered stenosis, false lumen or pseudoaneurysm may be seen.

CTA has the advantages of being rapid to acquire and suitable for patients with contraindications to MRI (e.g. pacemakers, claustrophobia). It may be better than MRI for detecting vertebral dissection since it is not affected by signal drop-out. It has the disadvantages of ionising radiation exposure and iodinated contrast use.

*Mouse over the image for further information.*

return to top | previous page | next page
Self Assessment

Question 1

Can you identify the major cervical vessels?

Look at the image and answer the question below.

Put the items in the correct order.

- Common carotid artery
- Vertebral artery
- Internal carotid artery
- External carotid artery

Value: 4
Occipital Epilepsies

Aetiology

Occipital epilepsy has many causes (idiopathic, vascular, tumour, cortical dysplasia). The seizure symptoms do not usually help to distinguish the underlying cause. However, onset in early childhood points strongly to a benign form.

Mouse over the links below.

The seizures

Visual hallucination

Blindness

Palinopsia

Eye movement

Mouse over the images.

return to top | previous page | next page
Technique of Anterior Temporal Lobectomy (ATL)

- Temporal craniotomy, exposing the lateral temporal lobe, and the sylvian fissure for orientation
- Infrasylvian coagulation of arachnoid aiming posterior, at 4.5 (L)/5.5 (R) cm rectangular turn for posterior resection towards the floor of the middle fossa
- Dissection and removal of the lateral temporal lobe including temporal pole, leaving the mesial structures
- Identification of the tip, then lateral opening of the temporal horn, identify choroidal point, then proceed with mesio-temporal resection as described above: amygdalum, uncus, hippocampal head, then en-bloc resection of the corpus hipppocampi
- Achieve hemostasis without arachnoid coagulation e.g. with surgicel

Mouse over the image for further information.

Modifications

- Pole resection and extensive hippocampectomy (Wyler)
- Pole resection and anterior unco-amgydalohippocampectomy
- Any ‘tailored’ (more extended) temporal lobe (temporo-occipital, -parietal, -frontal, -insular etc) resection after brain mapping or with awake resection to preserve language
Epidemiological Characteristics and Clinical Manifestations

Malarial Retinopathy

Malarial retinopathy is common. 60% of all children with cerebral malaria have malarial retinopathy on fundoscopic examination:

- Whitening of the macula that spares the central fovea
- Papilloedema
- Multiple retinal haemorrhages, often with pale centres

Malarial retinopathy is specific and might aid the diagnosing of cerebral malaria.

Prognostic features: in Malawian children, the presence of retinopathy, particularly papilloedema, which was associated with prolonged coma and death.

In patients who recover, retinopathy resolves over 1-4 weeks.

Mouse over the image for further information.
Management and Current Treatment Guidelines of Cerebral Malaria

Pre-referral Treatment

Cerebral malaria is severe malaria and, hence, is a medical emergency. The risk of death is greatest in the first 24 hours. The transit time between referral and arrival at health facilities able to administer intravenous treatment delays the commencement of appropriate antimalarial treatment.

It is recommended that patients be treated with the first dose of one of the recommended treatments before referral (unless the referral time is less than 6 hours).

Recommended pre-referral treatment options:

- Intramuscular artesunate, artemether, quinine, or
- Rectal artesunate

Learning Bite: In young children of less than 5 years of age, the use of rectal artesunate (10mg/kg) has been shown to reduce the risk of death and permanent disability.
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<td>Dr Anne Ducros - Acute Headache Units</td>
<td>Webinars / Joint ENS-EFNS Istanbul 2014 Congress Webinars</td>
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Diagnosis and Management of Trigeminal Autonomic Cephalalgias

Cohen AS, Matharu MS, Goadsby PJ. Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) or cranial autonomic features (SUNA)-a prospective clinical study of SUNCT and SUNA. Brain. 2006 Oct;129(Pt 10):2746-60.

Acute Management and Prevention of Migraine


Cluster headache: Acute and Prophylactic Treatments

1st Congress of the European Academy of Neurology, Berlin 2015
June 20-23 2015, Berlin, Germany

ebrain is pleased to offer approximately 100 webcasts recorded at the 1st Congress of the European Academy of Neurology, Berlin 2015.

Teaching Course 5: Basic approach to the seizing patient level 1

Chairperson: Erik Taubøll, Oslo, Norway

This teaching course will focus on how to diagnose and treat epilepsy patients in clinical practice. The speakers will initially discuss how to characterize seizures through clinical findings, EEG and imaging techniques, then discuss possible aetiologies. Seizures are not necessarily epileptic, and having epileptic seizures do not necessarily mean epilepsy. But if so, a rational choice of antiepileptic drugs have to be done based on information on seizure and epilepsy type, but also on individual factors. And should every seizure imply start of AED medication? When should we start, and last, but not least, when should we stop treatment?

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<td>Milan Brázdil Brno, Czech Republic</td>
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<td>Aetiology of seizures in clinical practice</td>
<td>Erik Taubøll Oslo, Norway</td>
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<td>Rational choice of antiepileptic drugs</td>
<td>Elinor Ben-Menachem Gothenburg, Sweden</td>
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<tr>
<td>When to start (and stop) antiepileptic drugs?</td>
<td>Tony Marson Liverpool, United Kingdom</td>
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Teaching Course 6: The Ageing Brain level 1

Chairperson: Marco Düring, Munich, Germany

Aging populations around the globe represent major challenges for society and healthcare systems. Brain health plays a major role in maintaining wellbeing as we age. This teaching course covers recent advancements in multiple areas of brain aging. Topics include psychological aspects, the measurement of brain aging using neuroimaging techniques as well as genetic and cellular aspects that facilitate our understanding of brain aging and might provide targets for future interventions.

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<td>Imaging brain ageing</td>
<td>Marco Düring</td>
<td>Munich, Germany</td>
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<td>Genetic architecture of brain aging</td>
<td>Hieab Adams</td>
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<td>The ageing brain and neurodegeneration</td>
<td>Sebastian Grönke</td>
<td>Cologne, Germany</td>
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TC Epilepsy – basic approach to a seizing patient

Clinical, EEG and imaging diagnosis of epileptic seizures

Milan Brázdíl

Brno Epilepsy Center,  
1st Department of Neurology, Masaryk University,  
St. Anne’s Hospital, Brno, Czech Rep.  
mbrzd@med.muni.cz

1st EAN Congress, Berlin 2015

Virtual patients
(decision Problem Based Learning)

Getting Started

THE CASE

- Identify Problem
- Generate/Rank Hypotheses
- Explain Mechanisms
- Ask Questions/Predict Answers
- Get New Information
- Decision & Action Plan

PRE-EXISTING KNOWLEDGE

Independent Study

Learning Issues

Reflection/Assessment

Very simple slides

secondlife.com

Ellaway, Medical Teacher 2015

Beaumont, Interactive Learning Environments 2014
A 25-year-old obese woman presents with headaches. The headaches are continuous and severe. They have got slowly worse over 2 years. The headaches are worse in the morning but improve a bit later in the day.

There has been a recent episode when her vision blurred in both eyes for a few minutes. The vision has returned to normal now but she was scared by this and has come to see you. She takes no medication other than the oral contraceptive pill.

On examination there is a convergent strabismus.

Q: This is an image of the optic disc. What does it show? Click 'A' for the answer.
A: Papilloedema

Q: Why does she have a convergent strabismus?
A:
What would you do now?

CT Brain

MRI Brain

No time for imaging do urgent Lumbar puncture

Write to a Neurosurgeon for a shunt
Neurosurgery Referral

You write a letter, it takes two weeks to be typed, checked and sent.

Four weeks later you get the following letter back from the neurosurgical department:

Dear Doctor,

Your patient with Benign Intracranial Hypertension came to clinic today. They were blind and despite urgent treatment the vision has failed to recover.

We recommend that you call your defence organisation.

Yours sincerely,
Dead

Four days later the patient has a seizure, fails to regain consciousness and is ventilated. A repeat CT scan shows extensive enlargement of the mass lesion and severe cerebral oedema.

The patient dies.

At post mortem, the lesion is found to be a cerebral abscess. It enlarged, burst into the ventricle and the patient died from ventriculitis.

There was no presence of endocarditis and a tooth abscess was found.

*Click the 'Next' button to continue.*
She comes back 3 weeks later with a further headache. The papillodema has improved though it is still present. You encourage her to loose weight and remind her that IIH is usually self limiting.

What would you do now?

- Another Lumbar puncture
- A Lumboperitoneal shunt
- Acetazolamide
- Optic nerve fenstration
- Dural venous sinus stenting
External resource links

Neuropathology and Ophthalmic Pathology

Why not visit the Neuropathology and Ophthalmic Pathology teaching sections kindly provided by St James University Hospital in Leeds, UK, via the following link: Virtual Pathology at the University of Leeds

Neurocardiology: Epilepsy and Cardiovascular Disease

The above educational programme can be viewed on Cardio-Debate "Mini Courses" (www.cardio-debate.com/mini-courses). Please visit and register to view the content. Registration is free and quick.
The future of ebrain

Continued scaling up

- Pain
- eSpine
- Nerve & Muscle expansion
- Neuropsychology/Psychiatry
- Neuropaediatrics-MS

Revision & update all sessions post-review

Migration new platform

Potential for chat rooms, discussion forums, live webchats...
Getting involved

Authoring lessons
? Developing world/Africa perspective on all topics
African Academy of Neurology Learning Pathway

Peer reviewing lessons

Writing Virtual Patient Case Studies
Active call for cases

Hosting webinars

Hosting forums

All suggestions welcome...
Thanks to the support of

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Editors, authors, learners contributing feedback
EAN & WFN Africa Task Force