European College of Veterinary Neurology (ECVN)

Examination Arrangements

Responsibility
The Examination Committee of the ECVN conducts the examination for the award of Diplomate, European College of Veterinary Neurology. This committee is composed of diplomates of the college, who are nominated by the ECVN Executive Committee. Also, the ECVN Executive Committee appoints a senior member to be chairperson. The members serve terms of 2-3 years. Members cannot serve on the Examination Committee and the Education Committee simultaneously. The Examination Committee sets and conducts the examination. The officers of the ECVN ratify the results of the examination.

Entry
Candidates must satisfy the Education Committee that their credentials meet the requirements to enter the examination. All fees must be paid and received by the ECVN (see Payment) by June 1 before the September examination and proof of successful payment must be provided. For residents ruled by the old guidelines (Education programme accepted before 1st of January 2009), the current costs are 40 Euros for approval of the credential file and 660 Euros for the examination fee. For residents ruled by the new guidelines (Education programme accepted after the 1st of January 2009), the current costs are 100 Euros for the approval of the residency programme, 100 Euros for approval of the credential file and 500 Euros for the examination fee. The examination fee for repeating the whole examination for all residents will be 500 Euros. The fee for repeating just part of the examination will be 300 Euros. The fee has to be paid each time a candidate sits the examination. Candidates can sit for examinations only if the Examination Committee has received proof of payment of the examination fee from the Treasurer.
Candidates are required to inform the Examination Committee chairperson of their intention to sit an examination session before the 15th of July of the year of the examination. Accepted candidates must sit the examination within five years of being notified that they have satisfied the credentials process. Candidates must pass the examination within 8 years of being notified that they have satisfied the credentials process. The candidate may sit the examination on three (3) occasions only. Failure to satisfy either of these requirements necessitates that the candidate undertakes the credentials process again and additional periods of training and/or experience may be required by the Education Committee.

Frequency
The examination is ordinarily set every year unless there are less than three candidates, in which case it is postponed until the next year.

Venue & Timing
The examination will take place over 3 days at the Faculty of Veterinary Medicine (Facoltà di Medicina Veterinaria), Ozzano Emilia (Bologna), Italy.
The timing of the components of the Examination, 2011, will be as follows:

ECVN Diploma Examination Timetable 4-6 September, 2012

Day 1 (Tuesday 4th September, 2012)
- Short answers: 10.00-13.00
- Neuropathology: 14.00-15.00
- Videos: 15.30-16.30

Day 2 (Wednesday 5th September, 2012)

- Neuroimaging: 9.00-10.30
- Electrophysiology: 11.00-12.30
- MCQS: 14.00-16.00

Day 3 (Thursday 6th September, 2012)
- Oral: 08.00-17.00 (depending on candidate number)

External Examiner
The Examination Committee may appoint one or more external examiners to oversee and/or participate in the examination. External examiners will provide a report on the examination to the Chairperson of the Examination Committee, which will be forwarded to the President of the ECVN. Laurent Garosi (ECVN vice-president and former Chairperson of the ECVN Examination Committee) has been appointed by the ECVN Executive Committee as external examiner for the 2011 Examination.

Submission of scripts and confidentiality
An Examination Secretary who is not a member of the Examination Committee will be appointed. The duties of the Examination Secretary are as follows:
1. To provide each candidate with an examination number, which will be confidential to only the candidate and the secretary.
2. On request of the Chairman of the Examination Sub-committee, the secretary will reveal the identity of the candidates. This will normally only take place after the oral examination has been completed to allow final collation of the marks. However, if a candidate is to be excluded from the examination at any time, a candidate's individual identity may thus have to be revealed.

Format
All components will be performed under closed examination conditions. All examination papers and answers will be conducted in English. An English translation dictionary may be taken to all written examinations. No other material is allowed to be taken in or out of the examination room. An explanation of the format of each section is given below.
Example questions are given at the end of this section:

1. Short answer questions
Questions requiring short written answers. Paper duration 3 hours for 20 questions. Each answer should be less than 1 A4 page in length and can be bullet pointed where appropriate. Neuroanatomy, neurophysiology and clinical neurology will be examined during this section. Each question will represent 5% of the total mark for this section.

2. Multiple choice
Paper duration 2 hours for 75 questions. Only one correct answer. Each question will represent 1.33% of the total mark for this section. All areas of neurology and neuroscience may be examined in this section.

3. Diagnostic imaging
Paper duration 90 minutes for 10 questions. Candidates will be presented with a diagnostic image of a patient with a given history. The candidate may be asked to describe the image in details (anatomical level, orientation, type of imaging modality used, lesion characteristics), list specific anatomical landmarks, and provide a differential diagnosis.

4. Neuropathology & Clinical pathology

Paper duration 60 minutes for 10 questions. Candidates will be presented with an image of a gross, histo- or clinical pathology sample of a patient with a given history. The candidate may be asked to describe the specific image, list specific anatomical landmarks, and provide a differential diagnosis.

5. Electrophysiology.
Paper duration 90 minutes for 3 questions. Candidates will be given a diagrammatic representation of an electrophysiologic study from a patient with a given clinical history. The candidate may be expected to describe how the study was technically performed and what it is physiologically represents in a normal patient. Additionally, an explanation of the specific results for the given patient may be requested.

6. Video case work-ups.
Paper duration 60 minutes for 3 questions. For each question, a small or large animal neurological examination will be projected and the history of the patient provided. The candidate will be expected to interpret the neurological examination with respect to the specific patient and will be asked specifically about further diagnostics and differentials for the case.

7. Oral Examination
The oral examination will be conducted by two or more examiners, who may be accompanied by an observer, and will last 30 minutes.
Candidates will have preparation time to review details of 3 cases, both small and large animal, that will form the basis of a structured oral examination. The main emphasis of the oral examination is to test the candidate ability to provide a step-wise logical approach to a clinical case.

Resits
Candidates who fail 3 or more parts of the examination, will have to resit the entire examination. Candidates who fail 1 or 2 parts are required to re-sit only those parts.

Extenuating circumstances
Candidates who feel they have extenuating circumstances may submit these to the Examination Secretary. On no account should they be brought to the attention of examiners or any other person involved in the examination process. The examiners may elect to consider such submissions only when brought to their attention by the examination secretary at the time of final deliberations.

Appeals
See ECVN Bylaws

Failure to comply with arrangements
Any candidate who fails to comply with these arrangements may be excluded by the Examination Committee Chairman.

Notification of results
The results of the examination are required to be validated by the officers of the ECVN. This process will be expedited as far as possible and candidates informed personally by the Exam chair. The candidate will be notified within a week to 10 days the outcome of the examination.

Information to failing candidates
Candidates who fail to pass the examination criteria may request further information about their performance. In such a case, the Chairman of the Examination Committee may enter into a general discussion on areas of strength and weakness with the candidate's supervisor, with the aim of aiding the candidate in any future entry. Other examiners should not be approached nor can they enter into any such discussion.

Examination Arrangements – Information for 2011

1. Examination Venue:
Facoltà di Medicina Veterinaria,
Ozzano Emilia (Bologna), Italy
A map and description of the venue will be sent to all candidates a few weeks before the examination date.

2. Accommodation information for the candidates
Candidates should make their own arrangements for accommodation. Further details regarding accommodation will be posted on the website.

Contacts

Examination Secretary for 2011:
Holger Volk
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Hatfield, Herts, AL9 7TA, United Kingdom
secretary@ecvn.org.

Examination Chair for 2011:
Luisa De Risio
Neurology/ Neurosurgery Service
Centre for Small Animal Studies
Animal Health Trust
Lanwades Park, Kentford,
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examcom@ecvn.org

Payment
Pay by credit card or bank transfer as follows:
- download and print the form on the ECVN Candidates page ("Payment form"), fill it with your credit card details and personal data and send it by ordinary mail or fax to the treasurer's address.
- bank transfer of exact fee (all charges paid by your bank) to:
Commerzbank Hannover, Germany
Account Europ. Kolleg. F. Veterinaerneurologie, number 303380000
SWIFT code: COBADEFF 250
Banc number: 25040066
IBAN number: DE34 2504 0066 0303 3800 00
Payment data and personal details should be sent to the **Treasurer**:
Veronika Stein
Klinik für Kleintiere
University of Veterinary Medicine Hannover
Buenteweg 9
D-30559 Hannover, Germany
treasurer@ecvn.org

Example Examination Questions

(1) Short answer questions:

a. List 3 causes of mydriatic pupil (either neurological or non-neurological) (3 marks – 1 mark for each correct answer)

Unilateral GVE oculomotor neuron lesion

Severe unilateral retinal or optic nerve lesions may result in a slight ipsilateral mydriasis that responds only to light directed into the normal eye

Age-related iris atrophy

Mydriatic drug administered for fundic examination

Ingestion of species of beladona plant that contain atropine

Glaucoma

Unilateral cerebellar lesions can cause contralateral mydriasis

b. List 3 causes of miotic pupil (either neurological or non-neurological) (3 marks – 1 mark for each correct answer)

Unilateral GVE sympathetic neuron lesion

Iritis with swelling of the iris

Ocular disorder that causes discomfort (keratitis) and stimulate ophth branch of CN V (oculopupillary reflex)

c. In a dog with a right oculomotor nerve lesion, list three signs of neurological dysfunction that you would you expect to see in addition to the pupillary abnormalities listed in Question 7a above and explain why? (2 marks – 0.5 mark per signs and 0.5 mark per explanation)

Accept 2 out of the following 3 answers

- Ptosis of upper eyelid in right eye (accept narrowing of the palpebral fissure) – CN III innervates levator palpebrae superioris muscles

- Ventrolateral strabismus (lateral rectus and dorsal oblique muscles are still functional because it they are innervated by CN IV and VI)

- Inability to rotate the eye dorsally, ventrally and medially during oculovestibular testing due to paralysis of the dorsal, ventral and medial recti muscles

d. Pharmacological testing may be useful in asserting the site of lesions affecting the afferent arm of the pupillary light reflex. Which direct and indirect parasympathomimetic drugs will you use to distinguish between a pre- and post-ganglionic lesion (ciliary ganglion) (2 marks)

Direct: Pilocarpine (1 mark)

Indirect: Physostigmine (1 mark)

References BSAVA Manual of canine and feline neurology. 3rd edition. Chapter 1 & 9 de Lahunta and Glass - Veterinary Neuroanatomy and Clinical Neurology – Third edition - Chapter 7

(2) Multiple choice (only one answer will be correct)

What are the UMN cells involved in the Schiff-Sherrington syndrome?

a) Target cells

b) Purkinje cells

c) Renshaw cells

d) Border cells

Answer: d

Reference – de Lahunta & Glass – Veterinary Neuroanatomy and Clinical Neurology, Third edition, p.249

(3) Neuroimaging

Lateral radiograph (A), sagittal (B) and transverse (C, D & E) T2-weighted images of the thoraco-lumbar spine of a 4-year-old, female spayed Pomeranian presented with slowly progressive pelvic limb ambulatory paraparesis.
a. Describe the findings observed in A (3 marks)
The intra-articular space between the articular facets of T13-L1 and L1-L2 vertebrae is increased in width (1) because of the absence (accept aplasia or hypoplasia) (1) of the articular facets (1)
b. Describe the findings observed in B, C & D (4 marks)
The sagittal plane image shows hourglass-like (accept dorso-ventral) (½) extra-dural (½) compression of the spinal cord at T13/L1 (¼) and L1/L2 (¼) intervertebral spaces dorsally (¼) by tissue of low signal intensity (¼) extending ventrally from the dorsal aspect of the vertebral canal and ventrally by mildly bulging intervertebral discs (¼)
The transverse plane images at T13/L1 and L1/L2 shows severe dorsoventral stenosis of the vertebral canal (¼) and absence of the articular facet joints (½). The articular facets are poorly delineated with enlarged and misshapen cranial articular facets (½) of L1 and L2 extending almost to the midline (½).
c. How would you treat this dog? (3 marks)
Spinal decompression (1) by a modified dorsal laminectomy (1) with stabilisation (1)
Ref. The Veterinary Record 2005, 156:601-605

(4) Neuropathology
A
B
C
The dissected distal spinal cord/cauda equina from a seven year old mare with urinary incontinence and flaccid tail is presented in image A. A photomicrograph of a transverse section of a lumbosacral dorsal root including dorsal root ganglion is presented in image B (H&E, original magnification x5) and C (H&E, original magnification x40).
a) Describe the gross lesion(s) in A (1 mark)
Substantial thickening of the nerve roots and spinal nerves of the cauda equina
b) Describe the cellular change(s) in B/C (2 marks)
Infiltration of nerve fascicle by mixed cell types predominantly mononuclear cell
c) What is the likely underlying pathological process and name of the condition? (1 mark)
Chronic inflammation (0.5 mark)
Polyneuritis equi (accept cauda equina neuritis) (0.5 mark)
d) What is proposed to be the underlying cause of this condition? (1 mark)
Aetiology unknown (0.5 mark) although equine adenovirus 1 has been isolated from pathological material (0.5 mark) – also accept immunological/molecular mimickry and immunopath(olog)y
References: Veterinary Neuropathology 1995 – Disease of the peripheral nervous system, Chapter 7, page 433, Summers BA, Cummings JF & de Lahunta A

(5) Electrophysiology
A 16-month-old male neutered Bengal cat is presented with rapidly progressive loss of motor function, beginning in the pelvic limbs and progressing to involve all limbs and rendering the cat non-ambulatory. The neurological examination revealed flaccid tetraparesis with decreased spinal reflexes but preserved conscious proprioception and skin sensation.
Electrophysiological tests were conducted a week after the initial signs. At that time, marked generalised muscle atrophy was present.
a)
Fig 1
i) Describe the recording in Fig.1, which was obtained after inserting a needle in the left

tibial cranial muscle of the cat, under general anesthesia (2 marks)
Abnormal spontaneous electrical activity (1), consisting primarily of positive sharp waves (1)(arrowheads).
ii) The same abnormalities were detected in most of the appendicular and paravertebral muscles. What is the clinical significance of this result? (2 marks)
Clinical significance: represent either a myopathic process or a denervated muscle.
iii) What needle is needed to conduct this test? (2 marks)
Concentric needle
b)
Fig.2
Fig.2 shows the motor nerve conduction study of the left peroneal nerve of the cat. The lower trace (A) shows the recording of potentials obtained after the proximal stimulation of the peroneal nerve and the upper trace (B) shows the recording after the distal stimulation of the peroneal nerve.
What does the first initial peak represent that appears on the left of the traces? (1 mark)
Stimulation artefacts
What does the second peak represent? Describe any abnormalities (1 mark)
Compound muscle action potentials (CMAP) (or M Wave) of the peroneal nerve (0.5). Temporal dispersion of the CMAP is found and the CMAP is polyphasic (0.5).
What do the last peaks represent (arrowheads)? (1 mark)
The last potentials are the late potential or F-wave (arrowheads).
Briefly describe the placement of the needles for such a study (4 marks)
Anatomical landmarks: distal peroneal stimulation: lateral aspect of the stifle; proximal peroneal stimulation: trochanteric fossa (sciatic); recording electrodes: Interosseous space. One positive and one negative monopolar needle are needed for the stimulation, the negative needle being placed close to the stimulated nerve.