



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Gualtiero Gandini





Clinical cases

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1.



"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

HISTORY



Approximately one month before **fever and anorexia**, spots of gastric mucus (vomit) found in the house

Fever, treated with antibiotics and NSAIDs, **disappeared few days later**

Since then, Briciola is **less active** and, progressively, **becomes more rigid and stumbles and falls down**

Owners report a sort of **«strange» cough**, defined as gurgling
They report also a **change of the voice**

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



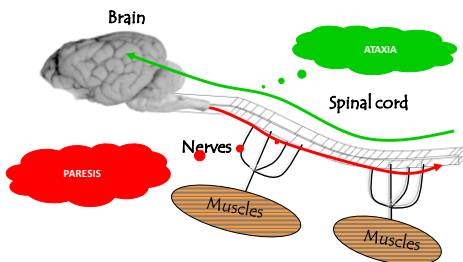
QUESTION 1

Which of the following sentences does more correctly describe Briciola's gait ?

1. Four limbs ataxia
2. Ataxia and tetraparesis
3. Tetraparesis and exercise intolerance
4. Tetraparesis

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The VOLUNTARY MOVEMENT

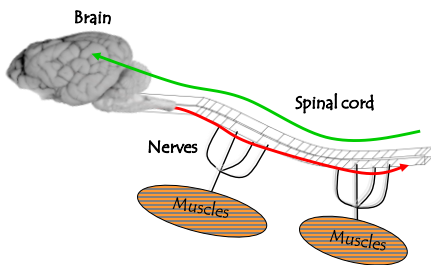


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Postural and proprioceptive reactions



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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 2

Which information do you get from Briciola's postural and proprioceptive reactions?

1. There is a PRIMARY DYSFUNCTION of the proprioceptive system
2. Proprioception is normal

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 3

Why the wheelbarrowing test with the head in neutral position is worst than the wheelbarrowing test with the head in extended position ?



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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 4

Which cranial nerves do show any type of dysfunction?

1. Facial (VII) and Glossopharyngeal (IX) nerves
2. Trigeminal (V) and Facial (VII) nerves
3. Trigeminal (V) and Glossopharyngeal (IX) nerves
4. Cranial nerves are normal

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

QUESTION 5

How do you define Briciola's spinal reflexes?

1. Uniformly decreased
2. Decreased on hind limbs
3. Decreased the flexor reflexes on 4 limbs
4. Normal

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

QUESTION 6

What is your neuroanatomical localization of the lesion?

1. Cervical spinal cord
2. Perypheral Nervous System
3. Multifocal
4. Brain stem

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

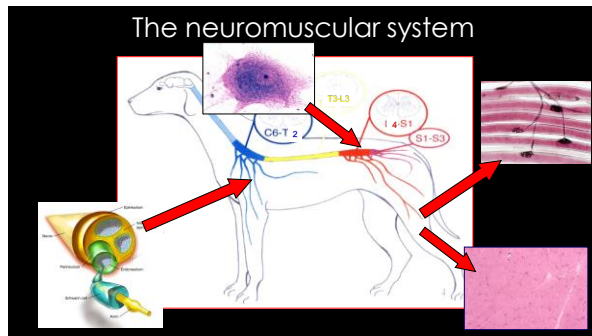


QUESTION 7

Why, according to your answer, Briciola has a multifocal lesion?



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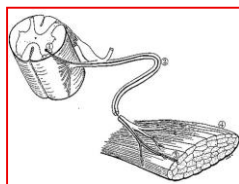


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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



Briciola has a lesion to **the efferent part** of the Peripheral Nervous System
(Neuromuscular System)



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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 8

On the basis of the history and of the results of the neurological examination, which part of the neuromuscular system is most likely affected?

1. Alfa-motor neuron (*i.e. motor neuron disease*)
2. Neuromuscular junction (*i.e. Myasthenia Gravis*)
3. Skeletal muscle (*i.e. polymyositis/polymyopathy*)
4. Nerve root/peripheral nerve (*i.e. poly[radiculo]neuritis*)

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 9

Besides CBC and biochemical profile, which of the following is the best diagnostic work-up to confirm the clinical suspicion of MYASTHENIA GRAVIS?

1. Tensilon/neostigmine test
2. Thorax X-ray, Tensilon test and Ab anti-Ach receptors Test
3. Thorax X-ray and Electrodiagnostic tests (*EMG e Nerve Conduction Velocity*)
4. Thorax X-ray, Electrodiagnostic tests and Neuromuscular biopsy

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

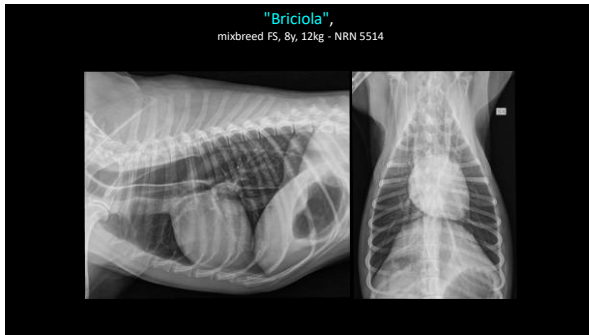


QUESTION 10

Why would you like to have a Thorax X-ray for Briciola?



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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514



QUESTION 11

Which treatment would you administer to Briciola?

1. Prednisolon (immunosuppressive dosage)
2. Prednisolon (antiinflammatory dosage)
3. Bethanecol
4. Pyridostigmine Bromide (*Mestinon*®)

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"Briciola",
mixbreed FS, 8y, 12kg - NRN 5514

Codice cliente: UNIBZ	Proprietario: T	Codice laboratorio: UNIBZ13
Spett.le	Paziente: Briciola	Numero codice a barre: 74509045
Università di Bologna	Specie: Cani	Data registrazione: 08.04.2017
Via Tolosa di Torga, 52	Sex: F	Materiale: Bani
40124 (Cesena dell'Emilia (BO))	Eta: 02 J	

REFERTO:  Briciola

ESAME	RISULTATO	INTERVALLO DI RIFERIMENTO
Acustico Ric: Ai	0.30	< 0.8 secuti  (1,2)

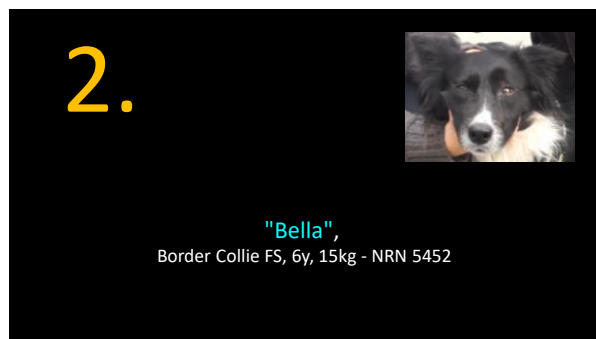
Annotazioni:

- 1) Campione inviato ad un laboratorio esterno.
- 2) Questo esame è stato eseguito dall'Università di San Diego, California.

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



HISTORY

Since four days, **progressively worsening**, Bella shows **reluctance to walk**, yelping during movement and **inappetence**

The referring vet found **fever** and cervical pain and administered amoxicillin/clavulanic acid and tramadol, **without improvement**

In the last two days, Bella's general condition **worsened**. She tends to stay in **lateral recumbency** all the time

The dog lives in a rural environment, is regularly vaccinated and is under prophylaxis for CPF. bella eats mixed food.

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



QUESTION 1

Which of the following postural abnormalities did you observe on Bella?

1. Head tilt
2. Kyphosis
3. Emprostotonus
4. Posture is normal

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



QUESTION 2

What are the two main reasons for Emprosthotonus?



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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



QUESTION 3

Which of the following sentences describes more correctly
Bella's gait ?

1. Four limbs ataxia
2. Ataxia and tetraparesis
3. Tetraparesis
4. Hind limbs ataxia

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452

**QUESTION 4**

Which of the following abnormalities did you observe on the (incomplete) cranial nerves examination?

1. Bilateral abnormal palpebral reflex
2. Bilateral abnormal menace response
3. Bilateral abnormal palpebral reflex and mild left positional strabismus
4. Bilateral abnormal menace response and mild left positional strabismus

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"Bella"

Border Collie FS, 6y, 15kg - NRN 5452

**QUESTION 5****How do you define Bella's spinal reflexes?**

1. Uniformly decreased
2. Decreased on hind limbs
3. Decreased the flexor reflexes on 4 limbs
4. Normal

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"Bella"

Border Collie FS, 6y, 15kg - NRN 5452

**NEUROLOGICAL EXAMINATION – problem list:**

1. mild obtundation
2. emprostothonus
3. 4 limbs proprioceptive atax
4. mild postural and proprioceptive deficits on 4 limbs
5. Abnormal menace response and mild left positional strabismus

*On cervical palpation, mild/moderate pain
fasciculations of the neck muscles
Bella has 39.5°C*

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"Bella"

Border Collie FS, 6y, 15kg - NRN 5452

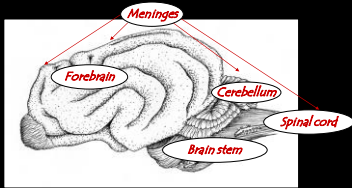
**QUESTION 6****What is your neuroanatomical localization of the lesion?**

1. Cervical spinal cord
2. Perypheral vestibular system
3. Multifocal
4. Brain stem

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Neuroanatomic Localization of the Lesion: Multifocal

TYPICAL OF INFLAMMATORY/INFECTIOUS DISEASES
 Progressive signs affecting more than one region →
 ± contemporary presence of signs affecting:



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"Bella"

Border Collie FS, 6y, 15kg - NRN 5452

QUESTION 7



What is your most likely clinical differential diagnosis ?

1. Neosporosis
2. Meningoencephalomyelitis of unknown etiology (MUE)
3. Diffuse metastases of extraneural brain neoplasia
4. Bacterial Meningoencephalomyelitis

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"Bella"

Border Collie FS, 6y, 15kg - NRN 5452

QUESTION 8



Which of the following diagnostic tools is LESS USEFUL for Bella's diagnosis?

1. Pre and post prandial bile acids
2. Magnetic Resonance Imaging (MRI)
3. PCR for infectious diseases (from CSF)
4. Cerebrospinal fluid (CSF) examination

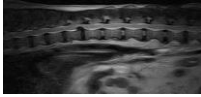
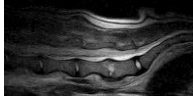
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"Bella"
Border Collie F5, 6y, 15kg - NRN 5452



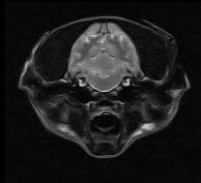
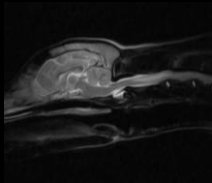
QUESTION 9

Which one of the following MRI images does belong to Bella?



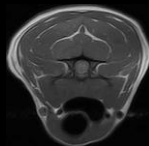
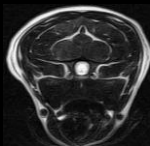
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"Bella"
Border Collie F5, 6y, 15kg - NRN 5452



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"Bella"
Border Collie F5, 6y, 15kg - NRN 5452



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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



QUESTION 10

And now, what would you like to do?



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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



CEREBROSPINAL FLUID EXAMINATION (tap from cisterna magna)

ALBUMIN:
500 mg/dl; Pandy test: ++



CELL COUNT:
1205 cells/ μ l;
(64% small mononuclear; 24% mononuclear; 12% neutrophils)

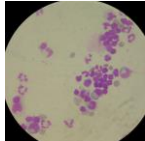
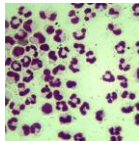
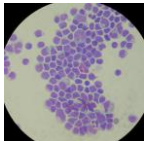


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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452

QUESTION 11

Which one of the following CSF images does belong to Bella?



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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



PCR profile (substrate CSF)

Proprietario: 7	Il suo numero: 99825841				
Animale: Cane Vallisella	cod. laboratorio: VM40499/11.02.2017				
Materiale: Liquido cefalorachidiano					
Esame	Risultato	Valutaz.	Intervallo di riferimento	Unità	Annot.
Profilo neurologico Cane					
Bartonella spp. - DNA (real-time PCR)	negativo				
Borrelia burgdorferi sensu lato (DNA) PCR	negativo				1)
Virus del cimurro RNA (real-time PCR)	negativo				
Cryptococcus neoformans / C. gatti (DNA) (real-time PCR)	negativo				
Neospora spp. (DNA) (real-time PCR)	negativo				
Toxoplasma gondii (DNA) (real-time PCR)	negativo				

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452



QUESTION 12

Which therapeutic plan would you recommend for Bella?

1. Prednisolon (immunosuppressive dosage) and antibiotics
2. Prednisolon (antiinflammatory dosage) and antibiotics
3. Prednisolon (antiinflammatory dosage) and gabapentin
4. Prednisolon (immunosuppressive dosage) and cytarabin

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"Bella"
Border Collie FS, 6y, 15kg - NRN 5452

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