

EQUINE SOFT TISSUE CASE**Page 1 (3 minutes)**

A 3-year-old flat-racing Thoroughbred gelding is presented for evaluation of abnormal upper respiratory tract noise at exercise and exercise intolerance. There are no other presenting complaints.

What physical examination steps are particularly important in this patient? Be specific.

*Palpate muscular process/larynx
Check jugular veins for patency/swelling/groove etc.
Confirm bilaterally symmetrical airflow
Check for surgical scars
Facial symmetry (also accept any signs of Horners)*

List the 2 additional diagnostic tests that are most indicated at this stage?

*Resting endoscopy
Laryngeal ultrasound*

Page 2 (5 minutes)

You perform upper airway endoscopic examination at rest and laryngeal ultrasound. The endoscopic findings are shown in the video.

What is the diagnosis? Be specific.

*Left sided
Recurrent Laryngeal Neuropathy
Grade 3*

What further diagnostic information do you require to define a treatment plan for this horse?

*Whether the arytenoid and vocal cord collapse during high-speed exercise
Are there any other concurrent causes of dynamic collapse*

What specific diagnostic test would deliver this information?

Overground or treadmill endoscopy

Page 3 (5 minutes)

You elect to perform upper respiratory tract endoscopy during high-speed, peak exercise on a treadmill.

How do you determine when peak exercise has been achieved?

*Measure heart rate
210-230 bpm*

The upper airway endoscopic examination of the horse exercising on the treadmill is shown in the video.

What is your final diagnosis? Be specific.

*Recurrent Laryngeal Neuropathy
Grade 3
Grade C*

List 3 options for surgical treatment in order of preference that would give the best chance for return to racing in this case.

*Laryngoplasty (or LP + ventriculocordectomy)
Partial arytenoidectomy
Neuromuscular pedicle graft
Laryngoplasty as first preference*

Page 4 (4 minutes)

You elect to perform a laryngoplasty. The horse is positioned in right lateral recumbency as shown in the Image. Identify the structures labelled A, B and C.

- A *ramus of mandible*
- B *linguofacial vein*
- C *sternomandibularis or sternocephalicus muscle*

Describe the landmarks for the skin incision for the laryngoplasty.

Dorsoventral position (ventral to LG vein), Appropriate length, Craniocaudal position

Page 5 (3 minutes)

The incision has been made. Identify structures B and D.

- B *Linguofacial vein*
D *Omohyoideus muscle*

Why are these structures important landmarks during laryngoplasty?

*Should be separated from each other
To access lateral aspect of larynx
They should be re-apposed to each other and form a layer in the closure*

Page 6 (5 minutes)

Name structures labelled E, F and G

- E *Thyropharyngeus m.*
F *Cricopharyngeus m.*
G *Carotid artery*

Using the landmarks given, characterise the two approaches to the muscular process of the arytenoid cartilage?

*Lateral approach
Between E and F
Caudal approach
Behind F*

What structures should be avoided during placement of the implant at its caudal extent?

*Carotid artery
Laryngeal mucosa
Oesophagus*

Page 7 (2 minutes)

What complications directly related to the surgical procedure can occur in the first week post-operatively?

Coughing
Aspiration
Loss of arytenoid abduction/implant failure
Seroma
Infection

Page 8 (3 minutes)

You perform endoscopy at rest 1 week after surgery was performed correctly and the findings are shown on the image.

What is your observation?

Loss of abduction

List five possible reasons for this finding. Be specific.

Suture pull-through
Suture breakage
Muscular process avulsion
Knot failure
Other cause of suture loosening, e.g. atrophy of underlying muscles