

MEDICAL MANAGEMENT OF GUTTURAL POUCH TYMPANY IN AN ARABIAN FOAL - A CASE REPORT

Mir Aamir Ali* and A.R. Shaikh

Barzan Veterinary Hospital, Barzan Stud, Amiri Guard, Doha, Qatar

*Corresponding author: alivetbtc@gmail.com

Received: 13-04-2018 Accepted: 25-04-2018

ABSTRACT

Successful Medical management of guttural pouch tympany in one-month Arabian foal with endoscopically guided placement of foley catheters is discussed.

Keywords: Guttural pouch tympany, Arabian foal, foley catheter

INTRODUCTION

Guttural pouches of the horse are bilateral, air-filled, outpouchings of the eustachian tubes with capacity of 300 to 500 ml (Budras *et al.*, 2009) lined with a ciliated pseudostratified columnar epithelium containing goblet cells (Rush and Mair, 2004). These are located in the parotid region, extending from the base of the skull and the atlas bone to the nasopharynx (Lepage *et al.*, 2004). Guttural pouch tympany is a congenital abnormality affecting the Arabian foals mostly fillies than colts within one year of age causing abnormal inflation of pouches (Metzger *et al.*, 2012; Reed *et al.*, 2018). This is characterized by a non-painful distension of one or both guttural pouches (Blazyczek *et al.*, 2004). Severe distension can cause dyspnea, dysphagia, inhalation pneumonia and secondary empyema that makes it a life threatening disease. The etiology of tympany is unknown, but it may be due to the presence either of

abnormally large mucosal folds (plica salpingopharyngea) or to a redundancy of the plica salpingopharyngea at the pharyngeal orifice or malfunction of the pharyngeal musculature. Mucosal flap acts as a one-way valve, allowing air to enter but not to exit. Inflammation from an upper airway infection, persistent coughing and muscle dysfunction have been proposed as alternative causes. In majority of the cases no anatomic abnormality at the guttural pouch opening or adjacent structures could be detected (Rush and Mair, 2004; Krebs and Schmotzer, 2007; Sellon and Long, 2014).

CASE HISTORY AND OBSERVATION

A 10-day-old Arabian filly weighing 40 kg was presented at Barzan Veterinary Clinic, Amiri guard, Qatar with a complaint of gradual onset of distention at the parotid region, leading to bilateral swelling in the parotid region causing abnormal sound and respiratory distress (Fig. 1). The swelling could be palpated externally and Endoscopy revealed distended pouches causing compression of the larynx, pharynx and collapse of the dorsal pharyngeal wall. Further lateral radiographs of neck revealed distention of pouches beyond second cervical vertebra and displaced proximal trachea suggestive of guttural pouch tympany (Fig. 2).



Fig. 1. Distended pouches in parotid region



Fig. 2. Lateral radiograph showing distended pouches with air interface

TREATMENT AND DISCUSSIONS

The Foal was sedated with xylazine 0.3mg/kg intravenously, hair around the muzzle were clipped and external nares were cleaned. Foley catheters 24fr were placed into each guttural pouch using endoscopic guidance via the nasal passage (Fig. 3) leading to immediate releasing of air from the pouches and causing deflation of the parotid region (Fig. 4) which was evident radiographically (Fig. 5). The balloon of catheters were inflated and retained in the pouches. The catheter was sutured externally, bandaged and ceftiofur at 4mg/kg intramuscularly was administered for one week. The guttural pouches were lavaged on every alternate day with warm ringers lactate mixed with amikacin 5 ml (250 mg/ml) until one week and once in three days until three weeks and catheter removed after four weeks. The foal made an uneventful recovery after one month of treatment.



Fig. 3. Placement of foley catheters



Fig. 4. Deflated parotid region



Fig. 5. Reduction in pouch dimensions evident

Diverse procedures are been used for alleviation of tympany, such as fenestration of the median septum, removal of the obstructing membrane or creation of salpingopharyngeal fistulas. The median septum between the pouches can be fenestrated through transendoscopic laser surgery with high-powered diode or a

neodymium:yttrium-aluminum-garnet (Nd:YAG) laser or trans endoscopic electro surgery or Viborg's triangle approach or through a modified Whitehouse approach (Schambourg *et al.*, 2006; Ohnesorge and Rotting, 2012; Freeman, 2015). A More conservative treatment by inserting an indwelling foley catheters into the affected guttural pouch to deform the plica salpingopharyngea is another option to treat horses for guttural pouch tympany and in current case, this was employed with a successful outcome (Caston *et al.*, 2015; Greet, 2015).

SUMMARY

Foals can be treated successfully with placement of foley catheters into the guttural pouches over a four to six week period with minor to no complications. This treatment is a simple, low-cost viable method to achieve permanent resolution of guttural pouch tympany in foals because surgical treatment is technically challenging and requires special skills and equipment.

REFERENCES

- Blazyczek, I., Hamann, H., Ohnesorge, B., Deegen, E. and Distl, O. 2004. Inheritance of guttural pouch tympany in the Arabian horse. *J. Hered.* **95**(3): 195-199.
- Budras, K., Sack, W.O. and Rock, S. 2009. Guttural Pouch In: *Anatomy of the Horse*, 5th ed. Schlutersche Verlagsgesellschaft mbH & Co. KG, 46-73: 160-161.
- Caston, S.S., Kersh, K.D., Reinertson, E.L. and Cammack, S. 2015. Treatment of guttural pouch tympany in foals with transnasal Foley catheter placement. *Equine Vet. Educ.* **27**: 28-30.
- Freeman, D.E. 2015. Veterinary Clinics of North America: Equine Practice. In: Sarah, M., Reuss, A. and Chesen, B. (Eds.), *Respiratory medicine and surgery*. **31**(1): 63-68.
- Greet, T. 2015. Managing foals with guttural pouch tympany. *Equine Vet. Educ.* **27**: 31-33.
- Krebs, W. and Schmotzer W.B. 2007. Laser fenestrated salpingopharyngeal fistulas for treatment of bilateral guttural pouch tympany in a foal. *Equine Vet. Educ.* **19** (8):419-423.
- Lepage, O.M., Ferron M.F. and Cadoré, J.L. 2004. The mystery of fungal infection in the guttural pouches. *Vet. J.* **168**: 60-64.
- Metzger, J., Ohnesorge, B. and Distl, O. 2012. Genome - wide linkage and association analysis identifies major gene loci for guttural pouch tympany in Arabian and German warmblood horses. *PLoS One.* **7**(7): e41640.
- Ohnesorge, B. and Rotting, A. 2012. Laser surgical treatment options for diseases of the upper respiratory tract in horses – An overview. *Photonics Lasers Med.* **1**: 89-94.
- Reed, S., Bayly, W. and Sellon, D. 2018. *Equine Internal Medicine*. 4th ed. Saunders, Missouri. pp. 325.
- Rush, B. and Mair, T. 2004. *Equine Respiratory Diseases*. Blackwell Science Ltd. pp. 66-67.
- Schambourg, M.A., Marcoux, M. and Céleste, C. 2006. Salpingoscopy for treatment of recurrent guttural pouch tympany in a filly. *Equine Vet. Educ.* **18**(5): 231-234.
- Sellon, D. and Long, M. 2014. *Equine Infectious Diseases* 2nd ed. Saunders Missouri. pp. 15-16.