Journal of Animal and Veterinary Advances 5 (12): 1172-1174, 2006

Guttural Pouch Diseases in Three Foals

Ghanem M. Al-Ghamdi
Department of Clinical Studies, College of Veterinary Medicine and Animal Resources,
King Faisal University, Al-Ahsa 31982

Abstrat: Diseases of the guttural pouches are less commonly detected in horses, however, they cause significant risk to the health of the horse. Guttural pouch empyema is a disease of any age mostly associated with bacterial infection while guttural pouch tympany is a condition of young foals. The goal of this study is to document the occurrence of guttural pouch disorders among foals admitted to the Veterinary Teaching Hospital at King Faisal University, Al-Ahssa, Saudi Arabia. Three foals were referred between November 2005 and April 2006. The first foal was about 6 months old Arabian colt that had a history of intermittent bilateral nasal discharges. The foal was diagnosed with guttural pouch empyema based on physical and endoscopic examinations and treated with combined procaine penicillin and dehydrostreptomycin sulphate (Pen and Strep, Norbrook, Newry, North Ireland), for two weeks. Recovery was achieved and the foal came to full activity. The second two foals were five months old colt and one month old Arabian filly respectively that were admitted with a history of bilateral swelling at the parotid gland region. They were diagnosed with guttural pouch tympany based on physical and endoscopic examinations and radiographs. The first foal was recommended for surgery however it developed post surgery complications and died a month later. The second was operated and recovered fully after the surgery. These findings suggest that guttural pouch tympany and empyema must be considered in foals with signs of respiratory dysfunctions in this region of Saudi Arabia. Early diagnosis, aggressive and appropriate treatment are rewarding.

Key words: Guttural, diagnosed, endoscopic, aggressive

INTRODUCTION

Guttural pouches diseases are of significant importance to horse practitioners as well as of great health impact on horses. Treatment of these diseases- if detected early- is rewarding[1,2]. Nonetheless, practitioners working at institute with limited facility face great challenge in diagnosis and treatment of these diseases. Empyema and tympany of the guttural pouches are important encountered conditions in horses. Guttural pouch empyema is mostly caused by *Streptococcus* sp that may turn into chronic problem rendering the horse carrier for years[3]. In addition, *Pasteurella* sp, *Mannheimia (Pasteurella) multocida* may cause this disease. Uni- or bilateral mucopurulent nasal discharge is characteristic sign. Packets of yellow or whitish mucus may be produced. The pus may be of variable consistency from fluid to thick. On occasions, chondroids may form[1]. The disease may be treated with antibiotics, drainage and lavage and on occasions tracheotomy may be necessary. Surgical intervention has been recommended utilizing several approaches[4].

Guttural pouches tympany is less commonly described disease that usually develops in foals after birth and to over a year of age[5, 6]. It results in uni- or bilateral excessive accumulation of air within the guttural pouches. The cause is still not fully understood but the most likely etiology is malfunctioning or structurally abnormal pharyngeal orifice acting as a one way valve. This will result in entrapment of air inside the guttural pouch. Affected foals may have a cool, non-painful tympanic swelling of the parotid gland region. Signs of discomfort or fever do not exist. However -in some cases- respiratory noise, dyspnae, dysphagia, milk in the nostrils or aspiration pneumonia may be observed.

The goal of this study is to document the occurrence of guttural pouch empyema and tympany among foals admitted the Veterinary Teaching Hospital at King Faisal University, Al-Ahssa, Saudi Arabia. Clinical aspects, success of treatment and challenges to horse practitioners are discussed.

Coresponding Author: Ghanem M. Al-ghamdi, Department of Clinical Studies, College of Veterinary Medicine and Animal Resources, King Faisal University, Al-Ahsa 31982, Saudi Arabia

MATERIALS AND METHODS

Three foals were admitted to the Veterinary Teaching Hospital, King Faisal University, Al-Ahssa, Saudi Arabia between November 2005 and April 2006. One foal was examined for the possibility of guttural pouch empyema and two for guttural pouch tympany.

RESULTS

Foal 1: The first foal was a 5-6 months Arabian colt that weighed approximately 150 kg. The colt had a history of foul bilateral mucoid nasal discharge for about six weeks. Discharge was more obvious after moderate exercise. Appetite and body condition of the colt were relatively normal. Physical examination showed normal body temperature and normal lung sounds. Endoscopic examination revealed mucoid nasal discharges coming out from both guttural pouches. Bacterial culture failed to grow any *Streptococcus* however Gram positive bacilli were observed. The colt had no chondroids. The foal was treated with procaine penicillin and dehydrostreptomycin sulphate (Pen and Strep, 1 mL 25^{-1} kg, Norbrook, Newry), North Ireland for two weeks. After treatment, the foal recovered completely.

Foal 2: The second foal was 5 months Arabian colt that had a history of respiratory distress for about two months. The foal had a bilateral swelling at the parotid gland region. Physical examination indicated that the swelling is soft and none-painful. Respiratory rate was moderately elevated and the colt had abnormal respiratory noise. Endoscopic examination indicated that the pouches on both sides were affected and the mucosa was hyperemic. X-ray showed air entrapped in the guttural pouches. The colt was sent to surgery and released one day after the operation. Two weeks later the colt was returned as a result of post surgical infection. Unfortunately, the colt died two weeks afterward due to failure to provide appropriate veterinary care.

Foal 3: The third foal was a one month old Arabian filly. The filly developed bilateral swelling at the parotid gland region shortly after parturition. On presentation, the filly was moderately bright and responsive. Physical examination revealed soft cool nonpainful swelling at the parotid gland area. The temperature and appetite were within the normal limits. Endoscpic examination indicated that the pharyngeal orifices on both sides were enlarged and mucous membranes were thickened. The swelling pdisappeared during the endoscpic examination however it returned shortly after. The foal was recommended for operation. Follow up call with the owner indicated that the filly recovered fully afterward.

DISCUSSION

Reports of the guttural pouch disorders in horses in Saudi Arabia are fairly scanty. The current study describes two conditions that involved three Arabian foals. The first foal had guttural pouch empyema that was confirmed with endoscopic examination. Two other foals had guttural pouch tympany. These findings were confirmed with X-ray and endoscopic examination. These foals were admitted within about six months period. Such number of cases raises significant concern to equine practitioners.

The first foal with empyema failed to grow *S. equi,* the most common pathogen of horses associated with guttural pouch empyema[3]. Horses with *S. equi* may develop long-term assymptomatic carriers up to three years however the case of this foal did not support the assumption of *S. equi* being responsible for the condition[7]. But the use of other approaches to detect *S. equi* such as PCR might be required since it provides better advantage over bacterial culture[8]. Having said that the importance of considering strangles in the differential diagnosis of cases with guttural pouch empyema to prevent consequences associated with health and financial complications as a result of strangles can not be overstressed. In this case the results of bacterial culture supported history findings that strangles has never been reported in this farm. To our knowledge strangles has not been confirmed in horses in this region at least over the past three years.

The use of lavage has been recommended for treatment of guttural pouch empyema[1]. Unfortunately this procedure was not available at the moment. Therefore the systemic antibiotic was the treatment of choice. Clearly the aggressive use of the antibiotic for adequate time period cleared the infection.

The other two foals were confirmed with guttural pouch tympany. It has been suggested the role of genetic element in the development of this condition[9]. Nonetheless genetic relationship between these foals was not clearly established. However, the owners were advised not to use the same sire and dam for further breeding. These foals were the first report of this condition in Saudi Arabia. But, it is not unlikely that the condition has been more prevalent among foals however appropriate diagnosis and reporting of the condition has not been made. The prevalence of this condition related to the total number of foals admitted to the hospital over

a year of time is relatively high reports of guttural pouch tympany among foals indicated similar figures[2].

The first foal with guttural pouch tympany that was operated but it had complications and died later. This was partially due to the difficulty in maintaining adequate post surgery care. Therefore, when the second foal had been operated, adequate after surgery care that was provided improved the prognosis. This stresses the importance of increasing the awareness of veterinarians at such facilities with the required treatment of these cases. This awareness increasesthe success rates of treatments.

Detection of three foals with guttural pouch diseases raises the concern to horse practitioners. These conditions should be considered in the differential diagnosis of foals with upper respiratory disorders. In the meantime improvement of veterinary care provided to these foals is rewarding.

REFERENCES

1. Judy, C.E., M.K. Chaffin and N.D. Cohen, 1999. Empyema of the guttural pouch (auditory tube diverticulum) in horses: 91 cases (1977-1997). J. Am. Vet. Med. Assoc., 215: 1666-70.
2. Blazyczek, I., H. Hamann, E. Deegen O. Distl and B. Ohnesorge, 2004. Retrospective analysis of 50 cases of guttural pouch tympany in foals. Vet. Rec., 154: 261-4.
3. Sweeney, C.R., R.H. Whitlock , D.A. Meirs and S.C. Whitehead, S.O. Barningham, 1987. Complications associated with *Streptococcus equi* infection on a horse farm. J. Am. Vet. Med. Assoc., 191: 1446-8.
4. Hawkins, J.F., N. Frank, J.E. Sojka and M. Levy, 2001. Fistulation of the auditory tube diverticulum (guttural pouch) with a neodymium:yttrium-aluminum-garnet laser for treatment of chronic empyema in two horses.J. Am. Vet. Med. Assoc., 218: 405-7.
5. McCue, P.M., D.E. Freeman and W.J. Donawick, 1989. Guttural pouch tympany: 15 cases (1977-1986). J. Am. Vet. Med. Assoc., 194: 1761-3.
6. Fintl, C., P.M. Dixon, T.J. Brazil, R.S. Pirie and B.C. McGorum, 2000. Endoscopic and bacteriological findings in a chronic outbreak of strangles. Vet. Rec., 147: 480-4.
7. Newton, J.R., J.L. Wood, K.A. Dunn, M.N. DeBrauwere and N. Chanter, 1997. Naturally occurring persistent and asymptomatic infection of the guttural pouches of horses with *Streptococcus equi*. Vet. Rec., 140: 84-90.
8. Newton, J.R., K. Verheyen, N.C. Talbot, J.F. Timoney, J.L. Wood, K.H. Lakhani and N. Chanter, 2000. Control of strangles outbreaks by isolation of guttural pouch carriers identified using PCR and culture of *Streptococcus equi*. Equine Vet. J., 32: 515-26.
9. Blazyczek, I., H. Hamann, B. Ohnesorge, E. Deegen and O. Distl , 2004. Inheritance of guttural pouch tympany in the arabian horse. J. Hered., 95: 195.