TRACHEOSTOMY AS AN ADJUNCT TO THE MANAGEMENT OF HAEMORRHAGIC SEPTICAEMIA IN BOVINES

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ABSTRACT

Attempts were made to save acute cases of haemorrhagic septicaemia (HS) in buffaloes and cattle by surgical treatment. Outbreaks of HS were seen during three different years in neighboring villages. A total of 62 animals were attended. The incidence was higher in buffaloes than cattle. Incidence was higher in young animals than adults. The clinical signs were mainly respiratory distress, oedema, fever and sudden death. In this group, either ampicillin – cloxacillin or sulphadimidine were administered. In second group, surgical treatment was employed in addition to antimicrobial therapy for severely gasping animals. In this group, tracheostomy was performed in 15 animals under local analgesia and daily cleaning of trachea was undertaken. This established patency of airways and provided time for antimicrobial action and resulted in higher survival rate than antimicrobial treatment alone. Tracheostomy is a simple surgery that can be recommended routinely to save the animals from respiratory obstruction in oedomatous types of HS. Medical treatment alone was found successful in the animals where the swelling was moderate and respiratory distress was less.

INTRODUCTION

Haemorrhagic septicaemia (HS) is one of the most important diseases of bovines in South Asian and Middle Eastern countries. Epidemiological studies over a period of thirteen years (1974-1986) in India indicated that mortality – wise, H.S. was placed first and morbidity – wise, second as compared to four other epizootic diseases namely, foot and mouth disease, rinderpest, anthrax and black quarter (Dutta et al., 1990). Many states in India were marked as high risk zones. About 26 outbreaks have been recorded in Punjab State from 1989 to 1990 (Saini et al., 1991). Outbreaks have been recorded in Srilanka (De Alwis and Vipulasiri, 1980), Zimbabwe (Lane et al., 1992), South Asia, The Middle East and Africa (FAO, 1989). The morbidity rate reported was 6.40 and the mortality rate was 6.28 per lakh of bovine population (Dutta et al., 1990), Mortality rates range has a widely from 5 to 90% in India, Nepal and the Philippines in different outbreaks and seasons (FAO, 1991). Most of the outbreaks have been managed by medical treatment alone and resulted in poor survival rate. Persual of literature showed that few attempts have been made to save acute cases of oedomatous types of HS by surgical treatment. No follow up of success of surgery have been recorded. The present study reports outbreaks of HS during three different years and its management by combined medical and surgical treatment.

MATERIALS AND METHODS

The cattle and buffaloes suffering from haemorrhagic septicaemia in outbreaks constituted the subjects of the study. Outbreaks occurred in different villages during three different years. The number of cases attended at farmers’ door-steps as emergencies during 1994, 1997 and 2001 were 25, 20 and 17, respectively. The average duration of outbreak was 6 days, and outbreaks occurred during the months of June and July. Among the 62 animals attended, 56 were buffaloes and 6 were cows. Majority of the cases were young buffalo calves and a few were pregnant buffaloes.

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The cases were diagnosed based on history, clinical signs, postmortem examination and identification of organisms from oedematous fluid or autopsy materials in few cases. The outbreaks were attributed to Pasteurella multocida organisms. Fourteen animals were reported dead before reaching the outbreak area or just before treatment. Among the remaining 48 animals, 33 animals received medical treatment and 15 animals were managed by combined surgical and medical treatment. The surgical treatment were given to the animals whose survival chances appeared less due to open mouth breathing, recumbency and large oedema on neck region. Medical treatment consisted of administration of either intravenous sulphadimidine or ampicillin – cloxacillin. The surgical treatment consisted of establishment of airway patency by tracheostomy operation.

The surgery was performed on emergency basis and on an average 3 to 4 animals were operated at a time during the outbreak. Very little time was wasted in preparation of the surgical site and anaesthetic procedures. The animals were operated in recumbent position. Local analgesia was achieved using 2% lignocaine hydrochloride. Incision was given between the upper an middle third of the neck. Trachea was exposed and a small elliptical piece of cartilage was removed. A sterilized rubber tube was introduced into the trachea and anchored to the external wound. Postoperatively, regular cleaning of the tube was carried out until the fever and respiratory distress were controlled. The tube was subsequently removed and the tracheostomy wound was allowed to heal by granulation.

**RESULTS AND DISCUSSION**

Most of the cases of HS in the outbreak showed characteristic clinical signs such as oedema of the neck and submandibular region. In few cases, oedema extended up to the brisket region. Other signs were anorexia, fever, salivation, recumbency and open-mouth breathing. Sudden death was commonly observed during the outbreak and two cases died during preparation of the surgical site itself, showing the necessity of immediate establishment of airway. Out of 33 animals which received medical treatment, 25 survived. These cases had less severe respiratory distress than the animals treated by surgical method. Out of 15 animals in which tracheostomy and medical treatment was given, 12 animals survived. Though these animals had severe respiratory distress most of them recovered due to immediate establishment of patency of airway and providing a chance for subsequent antimicrobial action.

Many antimicrobials have been reported effective for HS. Sulphadimidine, 33.3% is a commonly employed drug to treat the cases of HS (De Alwis, 1992). Long-acting benzathin chlortetracycline was found effective in large number of cattle, pigs and sheep against Pasteurella multocida infection (Trishkina and Parfenov, 1987). Hyper immune serum has been tried but is of little practical value (Keng and Phay, 1963).

Tracheostomy is not commonly performed in clinical conditions of large animals, though there are many indications of this operation. Tracheostomy was found beneficial in extending the life of a cow suffering from ethmoid carcinoma (Ramachandraiah et al., 1995). Reports describing tracheostomy for haemorrhagic septicaemia and subsequent follow ups are scanty. In the present study, tracheostomy helped in quick relief of respiratory distress and can be recommended routinely in outbreaks.

The occurrence of the disease was higher in buffaloes when compared to cattle in the present study. Similarly it was higher in young buffalo calves. Most countries record higher mortality in buffaloes and in younger animals (De Alwis and Vipulasiri, 1980). Hence a supportive treatment such as tracheostomy may prove beneficial in oedematous types of HS. Treacheostomy is an easy surgical procedure, especially in young buffalo calves and can be routinely employed in outbreaks. Once the initial danger of respiratory obstruction is removed, sufficient time will be available for antimicrobial action of the medicines.
REFERENCES


Most patients with a tracheostomy tube will have healthcare needs that cover several healthcare disciplines and while there is evidence to suggest non-Ears Nose Throat (ENT) patients have enhanced outcomes where a specific tracheostomy team is available, the guideline does not mandate such a team be created. Â· Refers to the medical team responsible for management of a patient’s primary condition. In ICU this would be the intensive care team. RN Registered nurse. Haemorrhagic septicaemia (HS) is an acute and fatal disease of cattle and buffaloes caused by Pasteurella multocida serotype B:2. The present study was undertaken to detect the antibodies to P. multocida by indirect haemagglutination assay (IHA) and indirect enzyme-linked immunosorbent assay (I-ELISA) and their results were compared. Â· Sex and age wise, there were no significant differences in seroprevalence rates between male and female and different age groups by both tests. Source-wise, the I-ELISA detected the maximum seroprevalence (74.60%) in Cattle Breeding Farm, Hosur, Tamil Nadu while the IHA detected 21.62% in Sona Farm, Udham Singh Nagar, Uttarakhand. The I-ELISA had a relative sensitivity and specificity of 94.83 and 86.03%, respectively in comparison to IHA. Â· Haemorrhagic septicaemia (HS) is a major disease of cattle and buffaloes characterised by an acute, highly fatal septicaemia with high morbidity and mortality. Â· In many Asian countries HS disease outbreaks mostly occur during the climatic conditions typical of monsoon (high humidity and high temperatures). Hosts. Â· Cattle and water buffaloes (Bubalus bubalis) are the principal hosts of hemorrhagic septicaemia, and it is widely considered that buffaloes are the more susceptible. Â· Although outbreaks of hemorrhagic septicaemia have been reported in sheep, goats and swine, it is not a frequent... Â· the pharyngeal region; these swellings spread to the ventral cervical region and brisket. The efficacy of tracheostomy teams and tracheostomy hospital services with standardized protocols for tracheostomy insertion and care has been associated with improved outcomes. Finally, the UK National Tracheostomy Safety Project developed standardized resources for education of both health care providers and patients, including emergency algorithms for tracheostomy incidents, and serves as an excellent educational resource in this important area. Key words: tracheostomy; timing; percutaneous dilatational; open; outcomes; complications. Â· A tracheostoma is a permanent opening into the trachea through the neck; it also refers to the opening after permanent laryngectomy. History of Tracheostomy. Hemorrhagic septicemia is an important disease of cattle and buffaloes in Asia, particularly the South and Southeast Asia. Since outbreaks lead to numerous deaths and severe economic loss, control by vaccination is extremely important. However, the current use of broth vaccine for quick coverage in outbreak area followed by the oil adjuvant vaccine in the surrounding areas has failed to control the disease. Â· However, buffaloes are found to be more susceptible to the infection than cattle. Upon infection, the pathogen rapidly spread from the respiratory tract to the blood circulation within 16-72 h, causing septicaemia. So far, limited study has been conducted to evaluate the response of endothelial cells of buffalo towards P. multocida B:2 and its lipopolysaccharide (LPS).