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## A case report on aspiration pneumonia in a cow

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**Abstract**

A crossbred cow was presented with history of inappetence, nasal discharge, salivation, coughing, pyrexia and reduced milk yield following drenching of liquid medication (liver tonic). Clinical examination revealed high body temperature of 105°F, purulent nasal discharge, coughing, dyspnea, congested mucous membrane and had putrid breath. Thoracic auscultation revealed crackling lung sounds in antero-ventral part of the both lungs. Haematology showed neutrophilic leukocytosis. The animal was recovered well, after treatment with ceftiofur sodium, marbofloxacin, tolfenamic acid, chlorpheniramine maleate, vitamin B-complex and isoflupredone.

**Keywords:** Cow, aspiration pneumonia, treatment, ceftiofur, tolfenamic acid

**1. Introduction**

Pneumonia is inflammation of the pulmonary parenchyma usually accompanied by involvement of bronchioles (Broncho-pneumonia) and often pleurisy (Pleuro-pneumonia). Clinically, it is manifested by an increase in the respiratory rate, changes in the depth and character of respirations, coughing, abnormal breath sounds in auscultation. Based up on the etiology, pneumonia may be of various types viz. bacterial, viral, mycoplasmas, parasitic, aspiration, allergic, hypo plastic etc. Among all other diseases, pneumonia causes high mortality in animals <sup>[1]</sup>.

Many farmers use a large variety of liquid supplements or medication drenches for the prevention or cure of diseases. Inappropriate administration or improper drenching technique of medication for other illness by inexperienced persons is the most common cause of aspiratory pneumonia <sup>[1]</sup>. Liquids administered by drench or dose syringe must not be given faster than the swallowing capacity of animals, and drenching is particularly dangerous when the animal's tongue is drawn out, when the head is held high, and when the animal is coughing or bellowing <sup>[2]</sup>. Inappropriate administration leads to passage of liquid into lungs and liquid penetrates to the depth of alveoli and run freely into the dependent portions and aspiratory pneumonia often results <sup>[1]</sup>. Even when care is taken these procedures are not without risk. The prognosis is guarded to poor in all cases of aspiration pneumonia; it depends upon the severity of the pneumonia, volume and nature of aspirated material. If large quantities of fluid is aspirated, death may be almost instantaneous, but few animals can be treated successfully <sup>[3]</sup>. The present case represents the aspiration pneumonia due to forceful administration of digestive stimulant (liver tonic) which is common practice among rural people of Punjab due to their ignorance.

**2. History and Diagnosis**

A crossbred cow of 6 years age was presented to Teaching Veterinary Clinical Complex, Khalsa College of Veterinary and Animal Sciences (KCVAS), Amritsar with history of inappetence, nasal discharge, salivation, coughing, fever and reduced milk yield. The farmer concerned was questioned further and it transpired that one day before he had drenched the cow forcibly against animal desire with commercially available liver tonic about 200 ml, according to advice of a Quack Veterinary Practitioner. The liver tonic (Brotone) of each 10 ml consisted of Fresh Liver extract 1.25g with Vitamin B<sub>12</sub> equivalent to 7.5 mcg, Cyanocobalamine, Yeast extract 0.4g, Thiamine 2.5 mg, Nicotinic acid 24 mg, Alcohol 1ml <sup>[4]</sup>. He recalled that during drenching the cow had jumped and then started coughing. Clinical examination revealed changes in vital parameters (rectal temperature: 105°F, respiratory rate: 52/minute, heart rate: 92/minute) with congested mucous membrane and halitosis. Animal showed painful expression with open mouth breathing (Fig. 1) and bilateral mucoid/purulent nasal discharge (Fig.2).

The cow stands with roached (markedly arched) back with neck extended and head lowered (Fig.3). Thoracic auscultations revealed crackling sounds in antero-ventral part of the both lungs. Blood examination showed neutropilic leukocytosis (Hb- 9.0 g/dl, TLC- 22,640/ $\mu$ l, N- 82/ $\mu$ l, L-8/ $\mu$ l, E- 10/ $\mu$ l and PLT- 322  $\times$ 10<sup>3</sup>/ $\mu$ l).

### 3. Treatment and Discussion

Based on the history, clinical examinations and haematological findings, the case was diagnosed as aspiration pneumonia and treated accordingly. The treatment was initiated with Ceftiofur sodium @2mg/kg IM BID  $\times$ 5 days, Marbofloxacin (Single shot) @8mg/kg IM repeated after 48 hours, Tolfenamic acid (Single shot) @2mg/kg IM repeated after 48 hours, Chlorpheniramine maleate @10ml IM OD  $\times$ 5 days and B-complex @10ml IM OD  $\times$ 5 days. Isoflupredone @10ml IM was administered for first two days only. The body temperature reached to normal (102°F) on 3<sup>rd</sup> day evening and respiratory distress started to resolve slowly. Others parameters such as dyspnea and nasal discharge were corrected to its normal level very much on 4<sup>th</sup> day after treatment. After five days of treatment cow showed good appetite and respiration become almost normal but slight coughing was observed. Haematological findings showed decreased in TLC levels (13,010/ $\mu$ l). The farmer was advised to continue antibiotic and anti-histamine treatment for next three days and follow up thereafter five days. After a week, farmer informed that the cow has completely recovered.

To the authors' knowledge, there are few available reports on the studies of aspiration pneumonia in cow. The clinical symptoms exhibited by the animal in the present study correlated the findings of Smith *et al.* [5], Chakrabarti 2006 [6], Scott [7] and The Merck Veterinary Manual [2] in the patients suffered with aspiration pneumonia. Similarly, neutropilic-leukocytosis observed in the present case was reported by Constable *et al.* [1]. Thoracic auscultations revealed crackling sounds over the lower half area of the both lungs, which was also recorded by Scott [7] and Wilkins *et al.* [3]. Improvement was seen in animal's respiration, after steroidal therapy, which was also observed by Singh and Manoj [8]. Since, the animal was suffering with acute illness and the clinico-haematological parameters were suggestive of severe infection, the line of treatment was restricted to the use of broad-spectrum antibiotics, NSAIDs along with steroidal therapy, which responded uneventfully. Similar type of effective treatment was reported by Blowey and Weaver 2003 [9], Patil *et al.* [10], Singh and Manoj [8], Smith [11], and in contrast with the findings of Scott [5].

As the prognosis is guarded to poor in all cases of aspiration pneumonia, but in this case, the animal was in acute/early stage of infection, also, the volume of aspirated material was not sufficient to cause death, hence responded to treatment positively. So, aspiration pneumonia is a serious condition yet treatable.



**Fig 1:** Open mouth breathing



**Fig 2:** Bilateral mucoid/purulent nasal discharge



**Fig 3:** Cow stands with a roached back (thoracic pain), neck extended and head held lowered

### 4. Conclusion

Broad-spectrum antibiotics (Ceftiofur sodium and Marbofloxacin), NSAIDs (Tolfenamic acid) and steroid (Isoflupredone) can be used successfully in therapeutic management of cow with aspiration/drenching pneumonia. For prevention of aspiration pneumonia careful administration of medication should be considered.

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