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Clinical Management of Jaundice in a Neonatal Calf: A Case Report

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Abstract:

A two weeks old jersey male calf presented with lethargy, anorexia, and yellow discoloration of the sclera and mucous membranes. In clinical examination, blood profile and serum biochemistry confirmed hyperbilirubinemia and liver enzyme elevation. The condition was diagnosed as hepatic-type jaundice secondary to suspected dietary toxin exposure. Therapeutic management included supportive therapy with fluids, liver tonic and antioxidants. The calf showed gradual improvement over one week treatment. This report highlights the diagnostic approach and therapeutic management of jaundice in calves, emphasizing early intervention and dietary assessment in young stock.

Keywords: calf, jaundice, hyperbilirubinemia, hepatic disease, case report.

Introduction:

Jaundice (icterus) is a pathological condition characterized by yellow pigmentation of tissues and body fluids due to the accumulation of bilirubin in blood circulation. In calves, jaundice may result from pre-hepatic causes (hemolysis), hepatic injury (toxic, infectious, congenital), or post-hepatic obstruction of bile flow (Meyer & Harvey, 2004). Reports of jaundice in neonatal calves are relatively scarce, and rapid clinical deterioration may occur if underlying causes are not promptly addressed (Constable et al., 2017).

Case History and Clinical Examination:

A two weeks old jersey male calf from nearby village was presented to the Veterinary Clinical Complex (VCC) of **Sri Ganganagar Veterinary College, Tantia University** with history of anorexia, lethargy, and progressive yellow discoloration of the sclera and yellowish various mucous membrane of body. The calf had been fed colostrum for the first two days followed by milk replacer and a recently introduced commercial calf starter.

On Physical Examination:

- *Temperature:* 103.8 °F
- *Pulse:* 96 beats/min
- *Respiration:* 28 breaths/min
- *Mucous membranes:* icteric
- *Urine:* dark yellow and Feces: soft, yellowish-green

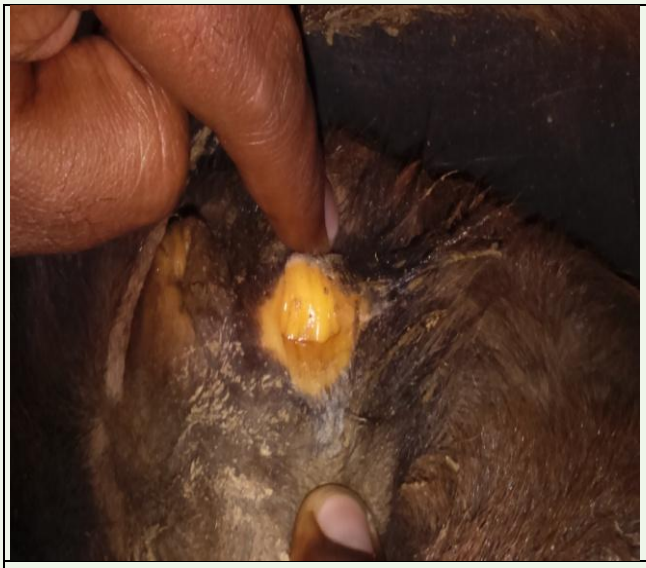

Fig 1-Yellowish Mucous Membrane of anus

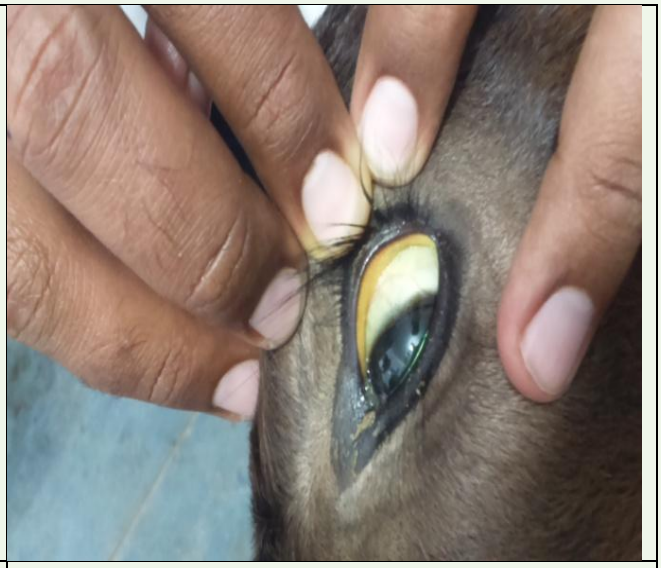

Fig 2- Icteric conjunctival mucous membrane

Materials and Methods:

- **Hematology**: PCV, total erythrocyte count, hemoglobin concentration.
- **Serum biochemistry**: Total bilirubin, liver enzymes (AST, ALT).
- **Urinalysis**: Color, bilirubin, and urobilinogen detection through dipstick test.
- **Feed analysis**: to see possibilities of commercial calf starter evaluated for hepatotoxic plant material or mycotoxin contamination.

S. No.	Parameters	Before treatment	After treatment (after 1 week)
1.	**Hb (g/dl)**	5.8	10.3
2.	**PCV (%)**	24	32
3.	**TEC (x106/cumm)**	4.32	5.40
4.	**Total serum bilirubin (mg/dl)**	4.20	0.74
5.	**SGPT (IU/L)**	59.4	26

Results:

- **Hematology**: Mild normocytic normochromic anemia (Hb 5.8 g/dL).
- **Biochemistry**:
  - Total bilirubin: 4.2 mg/dL (ref: 0.1–0.5 mg/dL)
  - SGPT: 59.4 IU/L (ref: 78–132 IU/L)
- **Urinalysis**: Markedly positive for bilirubin.

Treatment and Management:

- **IV fluids**: Ringer's lactate 2 L/day
- **Hepatoprotectants**: Silymarin 25 mg/kg PO SID × 7 days
- **Antioxidants**: Vitamin E (200 IU IM) and selenium (0.05 mg/kg IM)
- **Withdrawal of contaminated feed** and provision of clean milk

Recovery was observed by 1 week, with normalization of appetite and reduction in scleral icterus.

Discussion:

The elevated direct bilirubin, indicated hepatocellular injury and cholestasis (Kaneko et al., 2008). The absence of hemolytic anemia and the detection of aflatoxin B_1 in feed pointed toward toxin-induced hepatic jaundice. Similar outbreaks have been reported in Germany and Australia (Ganter et al., 2012; Sanyal et al., 2019). Early recognition of jaundice in calves is critical, as bilirubin accumulation is not only a marker of hepatic dysfunction but may also contribute to neurologic complications.

Supportive therapy aimed at promoting hepatocyte regeneration, removing the toxic source, and maintaining hydration proved effective. This case underscores the need for routine feed monitoring in calf-rearing systems.

Conclusion:

Jaundice in neonatal calves warrants prompt diagnostic evaluation to differentiate between hemolytic, hepatic, and obstructive causes. Feed-related hepatic injury should be suspected when multiple calves are affected or when recent dietary changes have occurred. Preventive measures, including feed quality control, can reduce the incidence of such cases.

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