

## Internal abscesses in cattle and their management under field conditions

S.P. Manjunath<sup>1†</sup> and Y. Chaitra<sup>2</sup>

Department of Animal Husbandry and Veterinary Services (AH&VS), Bengaluru (Karnataka)

<sup>1</sup>Senior Veterinary Officer, Veterinary Hospital, Nonavinakere, Tumkur; <sup>2</sup>Veterinary Officer, Veterinary Dispensary, Dasarigatta, Tumkur.

DOI No.: 10.5958/0973-9726.2025.00038.7

Received: March, 2025

*Internal abscesses in cattle present significant diagnostic and therapeutic challenges, particularly under field conditions. This study describes the diagnosis and management of internal abscesses in six cattle presenting with various clinical ailments. Diagnosis was based on physical examination and exploratory laparotomy. Recurrent bloat was noted in five of the six animals, and all exhibited leukocytosis. Abscesses were identified at multiple abdominal locations. Management strategies were tailored to individual cases: excision of abscess pockets through left flank laparotomy in two cattle; rumenotomy with foreign body removal followed by abscess aspiration in two cases; rumenotomy combined with a ventral abdominal incision for abscess lancing in one case; and lancing of the abscess via left flank laparotomy with placement of a Foley catheter in one animal. Three cattle recovered uneventfully. One case developed a postoperative ventral abdominal wall hernia, and one animal with an abscess between the dorsal abdominal wall and urinary bladder died 15 days post-surgery; necropsy revealed extensive abscessation. One animal was sold by the owner after surgery. Overall, the findings emphasize that successful diagnosis and management of internal abscesses in cattle require thorough physical examination and individualized, case-specific surgical approaches.*

**Keywords:** Bloat, Cattle, Internal abscess, Rumenotomy

**D**iagnosis and management of internal abscesses in cattle are highly challenging, particularly under field conditions. Although radiography (Braun *et al.*, 1993) and ultrasonography (Streeter and Step, 2007) are commonly used diagnostic modalities, many internal abscesses are still identified only during post-mortem examinations (Fubini *et al.*, 1989). In field situations with limited diagnostic resources, identifying internal abscesses becomes even more difficult, as these lesions can occur at various sites within the abdomen and often present with nonspecific clinical signs. Treatment is equally demanding due to the risk of recurrent pus accumulation and the potential for peritonitis. While the diagnosis and management of reticular abscesses are well documented (Athar *et al.*, 2010), published reports on internal abscesses located elsewhere in the abdomen remain scarce. The present study describes an effort to diagnose and manage internal abscesses in cattle under field conditions at the farmers' doorstep.

The present study was conducted in parts of Tumkur and Hassan districts of Karnataka from 2017 to 2024. Cattle presented with clinical signs suggestive of internal abscesses and diagnosed accordingly were included in the study. Six cattle with varying clinical presentations were confirmed to have internal abscesses based on physical examination and exploratory laparotomy. Recurrent bloat was observed in five of the six animals, and all showed leukocytosis. Abscesses were located at different sites within the abdomen. Since each case differed in clinical presentation, abscess location, and pathological characteristics, the diagnostic approach and treatment are described individually below.

In one case with recurrent bloat and anorexia, rumenotomy revealed no foreign bodies in the reticulum. After closure of the rumen, two lemon-shaped abscesses were identified on the outer surface of the abomasum. They were gently brought toward the left flank laparotomy site, confirmed as abscesses by aspiration, and excised completely.

Three cattle with recurrent bloat and complete anorexia were found to have sharp metallic foreign bodies piercing the reticulum during rumenotomy. In two of these animals, an abscess was present on the internal wall of the reticulum and confirmed by aspiration. A sterile syringe with a capped needle was inserted manually through the rumenotomy incision into the reticulum. The cap was removed, the needle advanced into the swelling, and aspiration yielded pus. After confirmation, the abscess was lanced from within the reticulum using a BP blade.

In the third case, a large fluctuating mass was palpated beneath the reticulum but was not attached to it. After rumen closure, attempts to access the abscess through the lateral rumen wall failed due to severe adhesions. The abdomen was closed routinely, and the animal was repositioned in dorsal recumbency. A ventral midline incision extending from the umbilicus was made, allowing manual exploration and localization of the abscess situated between the peritoneum and the ventral abdominal muscle layers. A small incision was made directly over the mass, and

<sup>†</sup>Corresponding author; Email: drmanjvet@gmail.com

all accumulated pus was expressed manually. The abdominal incision was closed routinely, and postoperative management included regular dressing of the external incision using iodine-soaked gauze.

In another animal, a large coconut-sized swelling intermittently appeared and disappeared below the left flank fold (Fig. 1). Aspiration confirmed it as an abscess, and its shifting nature indicated an internal origin. A left flank laparotomy revealed an abscess located between the rumen and the left abdominal wall (Fig. 2). Adhesions were bluntly dissected using fingers, and the entire abscess pocket, weighing 5.84 kg, was excised (Fig. 3). Histopathology revealed hyperplastic fibrocytes consistent with an abscess wall (Fig. 4).



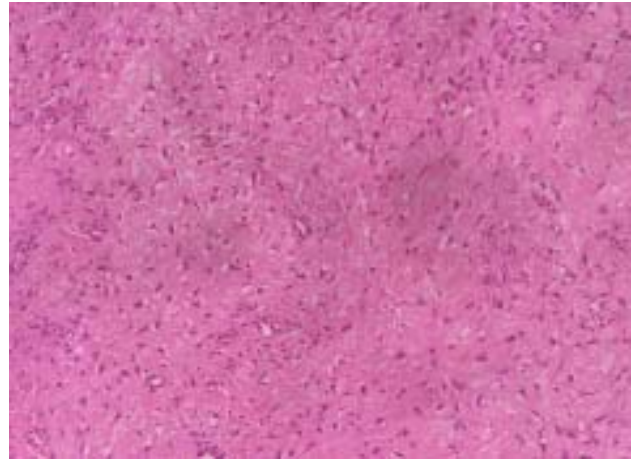
**Fig. 1:** Large multiple abscess just below left flank.



**Fig. 2:** Left flank laparotomy incision for excision of a large abscess.



**Fig. 3:** Excised abscess weighing 5.84 kg



**Fig. 4:** Histopathology of the abscess wall showing hyperplastic fibrocytes.

In one cattle with colic and recurrent bloat, left flank laparotomy revealed no foreign bodies in the rumen or reticulum. Examination of the abdominal cavity identified a soft fluctuating mass on the dorsal abdominal wall caudal to the left flank. Due to extensive adhesions, the borders of the abscess could not be clearly delineated. A small incision was made to drain the abscess, and a Foley catheter was placed for postoperative flushing.

All animals received intramuscular streptopenicillin twice daily for 12 days, and meloxicam at 0.5 mg/kg IM for 5 days. Skin sutures were removed after 12 days. Of the six cattle, three recovered uneventfully, with one-year follow-up confirming no recurrence. One animal with a ventral abdominal abscess developed a postoperative incisional hernia. One animal with an abscess between the dorsal abdominal wall and urinary bladder died 15 days after surgery; necropsy revealed extensive abscess pockets involving the left kidney and urethra. One animal with two abomasal abscesses was sold by the owner after surgery.

Cattle with reticular abscesses commonly exhibited recurrent tympany, likely due to impaired eructation leading to secondary ruminal contractions and increased motility (Blood *et al.*, 1989; Kumar, 2006). Animals with reticular abscesses showed good recovery following lancing and drainage, consistent with findings of Saini *et al.* (2005), Athar *et al.* (2010), and Hussain *et al.* (2024).

Under field conditions, basic diagnostic tools such as palpation, ballottement, and aspiration play a crucial role in identifying internal abscesses. Exploratory laparotomy confirms their presence, and aspiration definitively establishes the diagnosis (Braun *et al.*, 1998). During exploratory surgery, careful inspection of the abdominal structures before rumenotomy is essential, as demonstrated in the present study, where an abscess was detected on the dorsal abdominal wall despite no foreign bodies in the forestomach. Thorough examination of the

reticulum is also important, as only the penetrating tip of a foreign body may be palpable. Palpation and ballottement from within the reticulum can help identify abscesses located beneath it, as seen in the ventral abdominal abscess identified in this study.

Superficial abscesses are typically managed by maturation, lancing, drainage, and postoperative dressing with iodine-soaked gauze. However, such approaches are not feasible for internal abscesses. Therefore, complete excision of the abscess capsule is recommended whenever possible. In this study, two cattle underwent successful excision of internal abdominal abscesses. Although excision is well documented for superficial abscesses in buffaloes (Saharan *et al.*, 2020), reports on excision of internal abscesses remain scarce.

The present study highlights that accurate diagnosis and effective management of internal abscesses in cattle under field conditions require judicious use of available diagnostic techniques. A case-based approach, combined with the selection of appropriate diagnostic and surgical interventions tailored to each situation, can significantly improve clinical outcomes.

## References

- Athar, H., Mohindroo, J., Kumar, A., Singh, K. and Sangwan, V. 2010. Diagnosis and surgical management of reticular abscess in bovines. *Indian J. Vet. Surg.* **31**: 33-36.
- Blood, D.C., Radostitis, D.M., Arundel, J.H. and Gay, G.C. 1989. Diseases of the alimentary tract. Special examination. *In: Veterinary Medicine*, 7th edn. Bailliere and Tindal, London. pp 160-167.
- Braun, U., Fluckiger, M. and Nageri, F. 1993. Radiography as an aid in the diagnosis of traumatic reticuloperitonitis in cattle. *Vet. Rec.* **132**: 103-109.
- Braun, U., Iselin, U., Lischer, C. and Fluri, E. 1998. Ultrasonographic findings in five cows before and after treatment of reticular abscess. *Vet. Rec.* **142**: 184-189.
- Fubini, S.L., Ducharme, N.G., Erb, N.H., Smith, D.F., Rehbum, W.C. 1989. Failure of omasal transport attributable to perireticular abscess formation in cattle, 29 cases (1980-1986). *J. Am. Vet. Med. Assoc.* **194**: 811-814.
- Hussain, S.A., Uppal, S.K., Mahajan, S.K., Sood, N.K., Randhawa, C.S. and Athar, H. 2024. Reticular abscess in buffaloes and cattle: clinical-biochemical, diagnostic imaging findings, treatment and long term follow up. *Comp. Clin. Path.* **33**: 1-12.
- Kumar, M. 2006. Studies on the diagnosis of reticular disorders in bovines. MVSc Thesis submitted to Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana (Punjab), India.
- Saharan, S., Mathew, R.V., Tiwari, D.K. and Jain, V.K. 2020. Surgical management of large chronic integumentary abscesses in five Murrah buffaloes. *Haryana Vet.* **59**(SI), 115-116.
- Saini, N.S., Kumar, A., Mohindroo, J., Singh, S.S., Anand, A., Mahajan, S.K., Raghunath, M., Chaudhary, M., Singh, N. and Toor, A.S. 2005. Clinical features and survival in reticular abscessation in buffaloes. *Buffalo J.* **21**: 167-173.
- Streeter, R.N. and Step, D.L. 2007. Diagnostic ultrasonography in ruminants. *Vet. Clin. North Am. Food Anim. Pract.* **23**: 541-574.