Although the precise etiology of displaced abomasum (DA) is unknown, the combination of abomasal atony with dilatation with excessive accumulation of abomasal gas is considered to be a prerequisite for DA occurrence. However, few reports have been published to date on the process of abomasal gas accumulation. To clarify the mechanism of excessive abomasal gas accumulation in cattle with DA, we temporarily corrected DA by rolling and used fluoroscopic imagery to observe the process of DA recurrence.

The rolling procedure was performed on 21 Holstein cattle with DA. After rolling, 1.2L of barium sulfate was injected into the abomasum and 300g of radio-opaque marker was administered orally. The fluoroscopic images of the stomachs were then observed at intervals of 1 to 3 hours.

Just after rolling, the position of the stomachs was found to have almost returned to normal in all cattle. Recurrence of DA was observed in 12 cattle, all of which exhibited increased gas in the abomasal body together with reticular contractions before displacement. The greater curvature of the abomasum was displaced dorsally in 7 cattle and anteriorly in 5 cattle. As the gas increased in the abomasal body, it moved toward the displaced greater curvature of the abomasum causing the abomasum to float up on either the left (left displaced abomasum; LDA) or the right side of the rumen (right displaced abomasum; RDA) in 7 and 5 cattle, respectively. This upward displacement occurred through a gap that formed in the reticulum and the atrium of the rumen. Three of the 5 RDA cattle subsequently changed to LDA.

Based on these observations, increased gas in the abomasal body observed in conjunction with reticular contractions can be considered a prodrome of DA in cattle. This observation suggests that abomasal gas accumulation occurred due to gas inflow from the rumen. Reticular contractions appeared to be an essential component of this gas movement. In addition, three different types of DA recurrence were observed in this study (LDA, RDA, RDA→LDA). Clinical cases of DA are considered to arise by similar processes.

**Keywords:** Cattle, displaced abomasum, recurrence, gas accumulation, fluoroscopic findings