

## Short Communication

# SURGICAL MANAGEMENT OF CYLINDRICAL UMBILICAL HERNIA IN A THREE DAY OLD WEST AFRICAN DWARF KID

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**ABSTRACT:** A three day old West African Dwarf kid was presented at the Large Animal Unit of the University of Ilorin Veterinary Teaching Hospital with complaint of a mass protruding from the lower abdomen. On physical examination, a cylindrical mass of 8.7 cm in length and 2.4 cm in diameter was seen protruding at the umbilicus. The sac was pinkish, thin and warm to touch. The hernia was not reducible when the patient was placed on dorsal recumbency with slight manipulation. Anaesthesia was achieved by ring block and linear infiltration of the fundus with 2% lignocaine, supported by physical restraint. The hernia was successfully reduced and healing was uneventful.

**Key words:** Umbilical hernia, Surgical management, Kid.

Umbilical hernias are secondary to failure of the normal closure of the umbilical ring and resulting in protrusion of abdominal contents into the overlying subcutis (Kahn and Line 2010). This closure should take place a few days after birth (Al-Sobayil and Ahmed 2007). The umbilicus is one of the areas of potential weakness as it interrupts the continuity of the linea alba (Good *et al.* 2011). The aetiology is likely to have a genetic component, however, excess traction on an oversized foetus, cutting the umbilical cord too close to abdominal wall (Kahn and Line 2010) or umbilical infection or abscess (Al-Sobayil and Ahmed 2007) are other possible causes.

Size of the hernia ring varies depending on the extent of the umbilical defect and the amount of abdominal contents contained within it (Kahn and Line 2010). Abdin-Bey and Ramadan (2001) documented umbilical hernia ranging from 5-18cm in diameter, which could be at the centre, cranial, caudal or to one side of the umbilicus. These authors also reported the hernia ring in the range of 2-7 fingers' breadth.

Umbilical hernias may occur in all domestic animals, especially pigs, cattle, horses (Kersjes *et al.* 1985) and are rare in goats (Abdin-Bey and Ramadan 2001, Al-Sobayil and Ahmed 2007).

Umbilical hernia may be reducible or irreducible (Kersjes *et al.* 1985, Kahn and Line 2010). Abdin-Bey

and Ramadan (2001) reported that most umbilical hernias studied were reducible and the sizes were noticed to increase with coughing. The manual reducibility of umbilical hernia makes the diagnosis usually straightforward (Kahn and Line 2010), though may be confusing in some instances based on clinical findings (Abdin-Bey and Ramadan 2001).

If irreducible, the hernia must be differentiated from an umbilical abscess, which is common in large animals (Kahn and Line 2010).

This paper aimed at reporting an unusual form of umbilical hernia and its management to enlighten the large animal surgeons on the possible surgical approach to such cases and modification if need arises.

## Case History

A three day old West African Dwarf kid was presented at the Large Animal Unit of the University of Ilorin Veterinary Teaching Hospital with complaint of a mass protruding from the lower abdomen. The client reported that the protrusion was observed since it was born, that is, two days prior to presentation.

The vital parameters (temperature, pulse rate and respiratory rate) recorded were within their reference ranges. On physical examination, a cylindrical mass of 8.7cm in length and 2.4cm in diameter was seen protruding at the umbilicus (Fig. 1). The sac was pinkish,

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**Fig. 1. The kid with cylindrical herniating mass.**



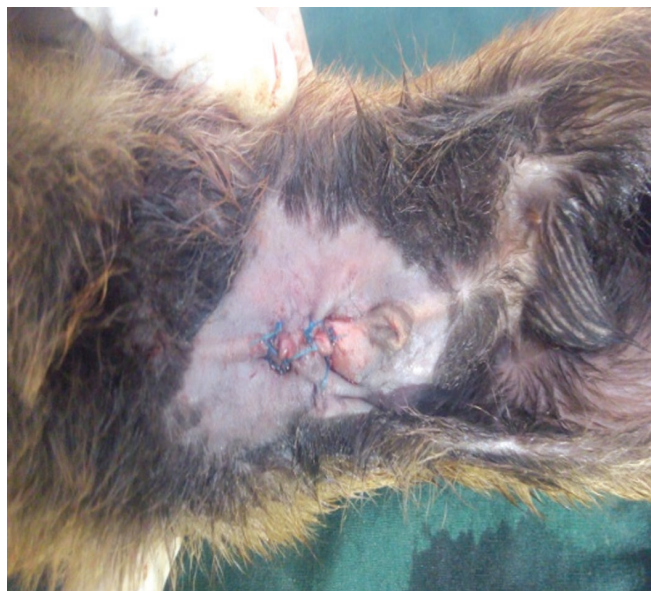
**Fig. 2. Longitudinal incision on the fundus.**

thin and warm to touch. The hernia was not reducible with slight manipulation when the patient was placed on dorsal recumbency.

### **Management**

The herniating mass was wrapped with gauze soaked in normal saline to prevent further dessication and contamination. The hair around the umbilicus was clipped and prepared aseptically for umbilical herniorrhaphy.

Local anaesthesia was achieved by ring block using 2% lignocaine (Swiss Parenterals PVT. Ltd., India) as reported earlier by Al-Sobayil and Ahmed (2007). This was potentiated by linear infiltration of 2% lignocaine on the proposed incision site on the cylindrical herniating



**Fig. 3. Closure of the hernia ring.**

mass.

The patient was physically restrained on dorsal recumbency and was held throughout the period of surgical intervention. The surgical site was finally scrubbed with methylated spirit.

The fundus was held upward using Allis tissue forceps by the assistant surgeon to avoid incising the herniated content. Longitudinal incision was made on the fundus carefully at the site of local infiltration of lignocaine to expose the hernia content which was intestinal segments (Fig. 2). The adhesion at the ring was detached and the content was reduced through the umbilical orifice in to the abdominal cavity.

The fundus was carefully excised at the level of umbilicus and the hernia ring was scarified to facilitate healing. The herniorrhaphy was achieved by two layer suturing, the ring was sutured using chromic catgut size 2-0 (Shenzen Runch Industrial Corp., China) while the skin was sutured with nylon size 2-0 (Shenzen Runch Industrial Corp., China) both with horizontal mattress (Fig. 3).

The surgical site was dressed and oxytetracycline spray was applied. Diclofenac (Yanzhou Xier Kangtai Pharmaceutical Co., Ltd., China) and Penstrept® (Penicillin-Streptomycin) were administered at 3 mg/kg and 8 mg/kg: 10 mg/kg intramuscularly after surgery and two days post-surgery.

The dressing was continued for seven days, the healing was uneventful and the skin sutures were removed thirteenth day post-surgery.

Hernias may be congenital or acquired and they may occur as isolated defects or may be associated with defects of other parts of the body (Al-Sobayil and Ahmed 2007).

Many small umbilical hernias may appear to resolve spontaneously, but large or strangulated umbilical hernias require surgical intervention (Henderickson 2013).

Various methods have been described for treatment of umbilical hernias, which include counter irritation, clamping, transfixation sutures, safety pins and commercially available rubber bands (Al-Sobayil and Ahmed 2007). All these could not be used in the case at hand because of the involvement of intestinal segment and its irreducibility, this justified the surgical intervention.

Generally, a fusiform or elliptical skin incision, pointed at both ends is made around the hernia sac avoiding the subcutaneous veins from either side or incision is made on the fundus (Abdin-Bey and Ramadan 2001, Henderickson 2013, Al-Sobayil and Ahmed 2007), while freeing the adhesions at the ring (Al-Sobayil and Ahmed 2007). This approach was not suitable for the management of this patient due to the fact that the shape of the fundus was not the usual circular but cylindrical. Also, an elliptical incision in this patient could not have guaranteed safety of the viscera making the prognosis poor.

Use of horizontal mattress and three layers suturing were reported by Abdin-Bey and Ramadan (2001) and Al-Sobayil and Ahmed (2007), but due to the thinness of abdominal wall of a goat as documented by Al-Sobayil and Ahmed (2007), and coupled with the fact that the patient was a kid, two layer suturing was adopted.

The surgical intervention of herniorrhaphy has high success rate (Abdin-Bey and Ramadan 2001, Al-Sobayil and Ahmed 2007), and this case handled was not an exception.

## CONCLUSION

It is worth noting that the umbilical hernia could be presented in another form different from the previously observed and documented ones. The approach used in this management has proven effective and could be adopted in any umbilical hernia presented in the same manner.

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