

Dept. of Surgery & Theriolog.,
Faculty of Vet. Med., Alexandria University,
Head of Dept. Prof. Dr. M.Y. Abboud.

**SOME CONGENITAL ANOMALIES
IN NEWBORN CALVES**
(With 1 Table & 12 Figs.)

By
A.A. KENAWY and M.M. KASSEM
(Received at 15/9/1992)

بعض التشوهات الخلقية في العجل حديثة الولادة

أحمد قنأوي ، مصطفى قاسم

أجريت هذه الدراسة علي العجل حديثة الولادة والمصابة ببعض التشوهات الخلقية وتم فحص الحالات إكلينيكيًا وعلاج الحالات الممكنة منها وقد وجد أن التشوهات الخلقية الشائعة في العجل في رتقة الشرج ، الفتاق السري في الحويصلة شبيهة الجلد غياب الزيل وزيادة عدد القوائم وتشوهات الرأس وعجل برأسين وعدم إنسداد الجلد بمنطقة السرة وبروز الأمعاء منها .

SUMMARY

The aim of the present study is to detect the congenital abnormalities of newborn calves with reference to possible treatment. The common congenital defects were atresia ani, umbilical hernia, dermoid, polymelia, cleft palate, head deformity, Diprosopus, polydactylism, Polyotia, Noto-melus, and epitheliogenesis imperfecta.

INTRODUCTION

Atresia ani in calves was commonly associated with other congenital defects such as Taillessness (absence of tail) and polymelia (extra limb). Atresia ani was operated successfully under local anaesthesia. (SAHU, 1972; HOSSAIN, SEN and RAHMAN, 1980 and SAMMAD and HOQUE, 1986).

Umbilical hernia is the most common type in cattle. It may be present at birth or develop during the first few weeks of life. The operation is easier in the heifer than in the bull. In the later the preputial orifice is adjacent to the operation, site. In fact, in some of the larger hernias the ring may extend beneath the prepuce (WRIGHT, 1951).

KENAWY & KASSEM

NEUMAN (1984) and WILLOUGBBY (1968) reported that Dermoid cyst occur rarely in newborn calves, and are due to congenital misplacement of skin. Dermoid cyst occur mainly on the lids, conjunctiva and cornea. Superficial keratectomy was performed to remove the cysts.

HOSSAIN, *et al.* (1980) and SAHU (1972) recorded that a newborn calf with supernumerary pendulous leg hanging from the sacral region and atresia ani were presented. The atresia ani was successfully operated, while the extra leg was amputated.

DENNIS (1980) reported that the common congenital defects were agnathia, atresia ani, brachygnathia, cleft plate, conjoined twinning, hernia, hypospadias, entropion and cryptorchidism. Congenital defects are caused by genetic or environmental factors or by either interaction.

Epitheliogenesis imperfecta was an unusual and characterized by complete absence of the skin in the umbilical region. (NIGAM, MISK and RIFAT, 1984).

ABDUL MAJID (1931) described a bull with a teratoma (dermoid process) situated just behind the hump. The attachment of the teratoma at the base is oval in shape having some fatty connective tissues.

MISK and HIFNY (1988), LEIPOLD and DENNIS (1972) and DEORE (1984) found that a deformed monster, calf was born with two heads. Both heads were normally developed, but had grown together. The calf had four eyes, two ears, four nostrils, and four horn stump. Probably because of the excessive weight of the head and the slow growth of the body, the calf was unable to stand on its legs.

Polydactylism is a type of anomaly characterized by an increase in the number of digit. LEIPOLD, DENNIS and HUSTON (1972).

MATERIAL and METHODS

The present work was to find out the congenital abnormalities in newborn calves. The affected calves were presented to the Veterinary Clinic at Edfina Veterinary Faculty and Animal Health Centers at Behira Province.

Surgical procedures were done under strict asepsis and local infiltration anaesthesia nad Rompun at a dose rate of 0.2 mg/kg B.W.

All cases of atresia ani were corrected surgically. A small circular incision made at the normal anatomical site of the anus and the blind end of the rectum was fixed to the surrounding skin by means of interrupted sutures.

Umbilical hernias were repaired by an elliptical incision performed at the skin over the hernia. The peritoneum and the hernial contents were reduced into the

CONGENITAL ANOMALIES IN CALVES

abdominal cavity then the abdominal wound was closed in a usual manner.

In the case of epitheliogenesis, imperfecta enlargement of the opening was essential to reduce the prolapsed intestine.

Surgical excision of the dermoid was performed by an ophthalmic scissor, and the bulbar conjunctival wound was sutured with 4/0 catgut by means of simple interrupted suture.

Table 1 lists the various congenital anomalies in calves according to age, sex and number of the recorded cases.

Table (1): Shows the recorded congenital anomalies in calves according to age, sex and number of cases.

Type of affection	Age	Sex		No. of cases
		male	female	
Atresia ani	2 days	1	1	2
Atresia ani with taillessness	4 days	-	2	2
Umbilical hernia	1-4 weeks	6	4	10
Umbilical hernia with Epitheliogenesis imperfecta	1 week	1	1	2
Dermoid	2 month	-	2	2
Monkey faced calf	1 week	-	1	1
Diprosopus (double-faced monster)	1 day	1	-	1
Polyotia (extra ear)	1 month	-	1	1
Notomelus	3 month	1	-	1
Cleft palate	2 days	1	-	1
Polymelia (extra leg)	4 weeks	-	1	1
Polydactylism (extra digit)	6 weeks	-	1	1
Total		11	14	25

RESULTS

In cases of atresia ani the symptoms observed were absence of the anal opening, tenesmus, bulging of the anal region and symptoms of abdominal discomfort and distention (Fig. 1).

In cases of atresia ani with Taillessness close examination revealed complete absence of coccygeal vertebrae and small tuft of hair present at the normal site of tail in the sacral region (Fig. 2). Surgical creation of an anal opening was found adequate in cases of atresia ani.

In cases of umbilical hernia the affected calves were presented during the first weeks of life. The hernial swelling was spherical in shape and its size ranged from orange size to coconut size. The hernial ring was oval in outline and measured from 1 to 3 fingers in diameter. In the present study the operation was easier in female

KENAWY & KASSEM

calf than in male, because the hernial ring in male may extend inside the prepuce (Fig. 3).

Umbilical hernia with Epitheliogenesis imperfecta was an unusual one and characterized by complete absence of the skin and abnormal widening of the umbilical opening resulting of eventration of the abdominal contents outside the abdomen. Enlargement of the hernial ring was essential to reduce the prolapsed intestine (Fig. 4).

In case of dermoid, a pendulous congenital swelling was found growing from the conjunctiva of the upper eyelid and third eyelid of right eye. The lower boundary of the dermoid encroached over the cornea resulting in a localized corneal opacity (Fig. 5).

Monkey-faced calf showed bilateral absence of the globe (anophthalmia) and hydrocephalus. The upper jaw and nasal septum were deviated downward forming flattening and deformity of the face. The nostrils were small in size, pointed with two constricted orifices and the skin of the muzzle was highly pigmented. There was excessive formation and protrusion of the tongue (macroglossia), and the lower jaw was slightly longer than the upper jaw (prognathism) (Fig. 6).

In case of double Headed monster calf (Diprosopus), the two heads were fully developed and found to be symmetrical. The monster had two necks fused at the level of thoracic inlet, it had a pair of fore limbs, a pair of hind limbs, single trunk and a tail, all being apparently normal. Because of the excessive weight of the heads and the slow growth of the body the calf was unable to stand on its legs (Fig. 7).

In case of polyotia (accessory ear) there was a long, narrow ear like skin flap with rounded edges. The flap arise from the occipital region at the midline between the two normal ears. The accessory ear was covered with body hair and it was narrow, 3 cm. wide, tapering and 15 cm. long. (Fig. 8).

Notomelus situated just behind the hump of a calf was presented. The attachment of the notomelus at the base was oval in shape having some fatty connective tissues. There was a fully developed two metacarpal bones with which were joined four perfect digits and claws. (Fig. 9).

On examination the mouth of an affected calf, revealed the presence of a cleft palate. The hard palate showed complete agenesis leading to a free communication of the buccal cavity with the nasopharyngeal passage. No treatment was performed and the calf was slaughtered after two weeks. (Fig. 10).

In case of polymelia (extra leg) in calf, the extra leg attached with the normal left hind limb. On examination, there was only one femur and the extra leg began from the distal end of the femur. (Fig. 11).

CONGENITAL ANOMALIES IN CALVES

Polydactylism is a type of congenital anomaly characterized by an increase in the normal number of the digits. In the present study a supernumerary digit was located at the medial aspect of the main digit of the left hind limb of a two months old female calf. The extra digit was small in size and had a symmetrical position. (Fig. 12).

DISCUSSION

Atresia ani was the most common anomaly in calves. Symptoms observed in cases of atresia ani, included, absence of anal opening, tenesmus, and bulging of anal area. Surgical creation of an anal opening was found adequate in cases of atresia ani (SAHU, 1972; HOSSAIN, et al. 1980 and SAMMAD, et al. 1986).

In the present results, the operation for umbilical hernia was easier in female than in male. In the later the preputial orifice was near the operation site, and the hernial ring sometimes extend inside the prepuce, a result which agreed with that mentioned by (WRIGHT, 1951).

Dermoid occur mainly on the lids, conjunctiva and cornea. Superficial keratectomy was performed to remove the growth. These results were stated by (NEUMAN, 1984 and WILLOUGBBY, 1968).

In the present study polymelia (extra leg) was recorded in a newborn calf. The extra leg attached with the left hind limb. There was only one femur and the extra leg parasitic from the distal end of the femur.

Polydactylism is a type of congenital anomaly characterized by an increase in the normal number of the digits (LEIPOLD, et al. 1972).

Epitheliogenesis imperfecta is an unusual case characterized by complete absence of the skin in the umbilical region, enlargement of the opening was essential to reduce the prolapsed abdominal contents. These results are in agreement with the result obtained by (NIGAM, et al. 1984).

Notomelus is a congenital anomaly resulted from some irregularity in intra-uterine growth. There was a fully developed two metacarpal bones with which were joined four perfect digits and claws. (ABDUL MAJID, 1931).

In the present work congenital head deformity in calves was collected. Monkey faced calf with anophthalmia, prognathism, macroglossia, and deviation of the nasal septum was recorded. Double headed monster calf (*Diprosopus*) was recorded. The monster calf had two necks fused at the level of thoracic inlet.

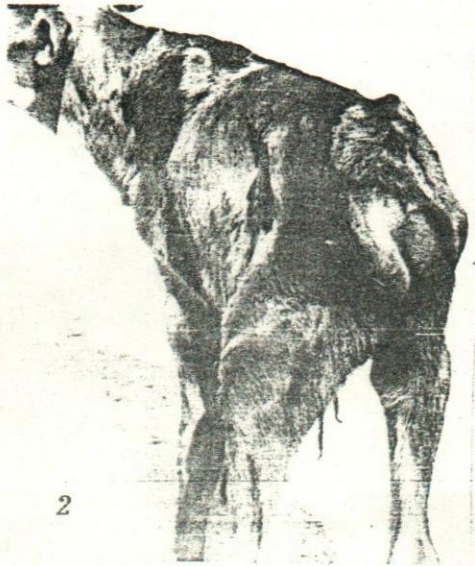
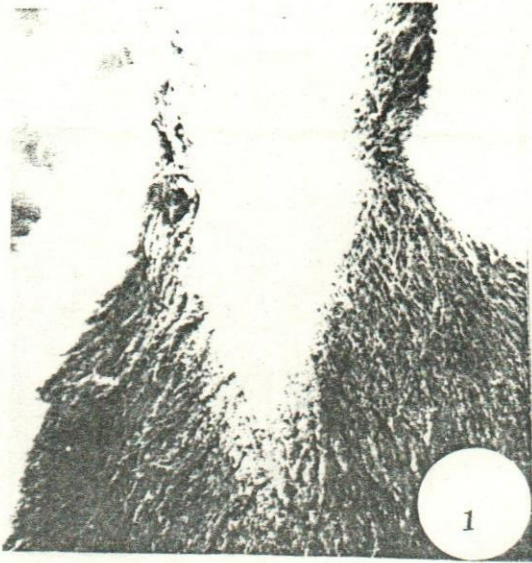
REFERENCES

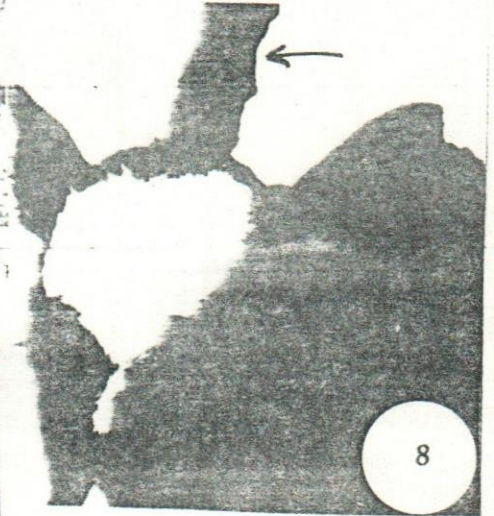
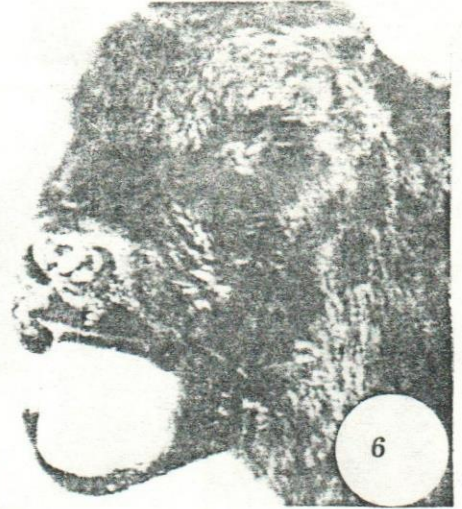
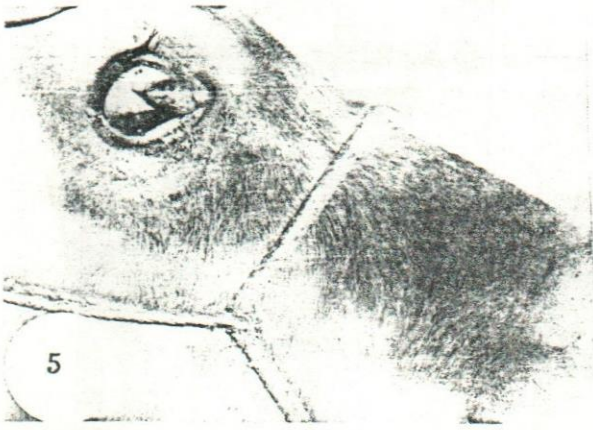
- Abdul Majid (1931): Teratomā (Dermoid process). *Indian Vet. J.*, 7: 368.
- Dennis, S.M. (1980): Congenital and inherited defects in sheep. Current therapy in Theriogenology (Cited by D.A. Marrow). Philadelphia, U.S.A. W.B. Saunder Co., 924: 927.
- Deore, P.A. (1984): Deformed calf with two heads. *Vet. Med. Rev.*, 1/84, 95-96.
- Hossain, M.D.A.; Sen, M.M. and Rahman, M.S.A. (1980): A newborn calf with a supernumerary limb and atresia ani. *Vet. Med. Rev.*, 21/80, 178: 179.
- Leipold, H.W.; Dennis, S.M. and Huston, K. (1972): Polydactyly in cattle. *Cornell Vet. J.*, 62: 337-342.
- Misk, N.A. and Hifny, A. (1988): Diprosopus in a buffalo-calf. *VMR* (1), 59: 92-95.
- Neuman, S.M. (1984): Corneal dermoid in beef calf. *Mod. Vet. Pract.*, 65: 553-554.
- Nigam, J.M.; Misk, N.A. and Rifat, J.F. (1984): Surgical management of congenital anomalies of ruminants. *Agri-practice*, 5 (7) 38: 47.
- Sahu, S. (1972): Lapro-perineotomy in a pleuromelaphorns triscelus monster calf. *Indian Vet. J.*, 49, 534: 533.
- Sammad, M.A. and Hoque, M.E. (1986): Teratology: congenital hydrocephalus, taillessness and atresia ani in calves. *Vet. Med. Rev.*, 1/86, 109: 111.
- Willoughby, R.A. (1968): Congenital eye defects in cattle. *Mod. Vet. Practice*, 49, 36: 38.
- Wright, J.G. (1951): Observation on the incidence of and surgical treatment of umbilical hernia in the bovine. *Vet. Rec.*, 63 (1), 4: 40.

LEGENDS

- Fig. (1): Atresia ani in calf.
- Fig. (2): Atresia ani with Taillessness.
- Fig. (3): Congenital umbilical hernia.
- Fig. (4): Epitheliogenesis imperfecta in calf.
- Fig. (5): Dermoid cyst in calf.
- Fig. (6): Monkey faced calf.
- Fig. (7): Diprosopus (double head calf).
- Fig. (8): Polyotia (extra ear).
- Fig. (9): Teratoma (Dermoid process).
- Fig. (10): Cleft palate in calf.
- Fig. (11): Polymelia (extra leg).
- Fig. (12): Polydactylism (extra digit).

CONGENITAL ANOMALIES IN CALVES





CONGENITAL ANOMALIES IN CALVES

