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Case Report

A case of arthrogryposis in a buffalo calf causing dystocia

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ABSTRACT

In the present case, dystocia due to foetal Arthrogryposis and its malposture was relieved by foetotomy.

Key words: Buffalo, fetus, arthrogryposis

Foetal anomalies and monstrosities of various kinds, though with less frequency. have been recorded in cattle (Arthur *et al.*, 1989. Roberts. 1971) and buffaloes (Kumaresan *et al.* 2003).

A three year old Murrah buffalo heifer at her full term was presented to the PAU Veterinary Clinics, Ludhiana with the history of dystocia. Water bags had ruptured one day before the case was presented and buffalo was straining since then. Local veterinarian had unsuccessfully manipulated the case.

Clinical examination revealed that the buffalo was alert and was straining. The pelvic ligaments were relaxed and there was complete letdown of milk. Vulva was slightly edematous. Per-vaginal examination revealed that although the cervix was undergoing secondary constriction, yet it was sufficiently dilated. The birth canal was dry due to lack of fluids. The fetus was in posterior longitudinal presentation, left lumbo-ilial position with bilateral hip flexion. The fetus appeared apparently normal as far as it was palpable. Since sufficient working space was available in the birth canal, foetotomy was performed under epidural anaesthesia (5ml, 2% Lignocaine hydrochloride) and thorough lubrication of the genital passage with carboxy methyl cellulose sodium (2%, S.D. Fine Chemicals Ltd., Mumbai). Left hind limb was amputated first followed by a cut at the lumbar region, which facilitated removal of right hind limb and hip. Evisceration was done at this stage. Third cut at chest helped in removal of the rib cage. The fetus was then rotated and the forelimbs extended into the passage with head still not palpable. The left forelimb was amputated and the head secured. Moderate traction on the limb and the lower jaw enabled delivery of the head and the right forelimb.

Per-vaginal examination after delivery of the fetus revealed no injury to the genital tract. The dam was administered with antibiotics, antihistaminics, uterine ecbolics and intravenous fluid for four days. The buffalo recovered uneventfully and was discharged. Careful examination of the fetus (Fig. 1) revealed joint contractures and ankylosis of all the joints with variable degree of flexion and extension, thus termed as arthrogryposis.

Congenital abnormalities causing obstetrical

Fig1. Arthrogryposis fetus delivered through fetotomy

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problems have been well-documented in cattle (Sloss and Dufty, 1980). Arthrogryposis, one of the musculo-skeletal deformities frequently encountered as a congenital disease (Leipold *et al.*, 1996), is frequently encountered in man, farm animals and pets. In this condition there are permanent joint contractures. Its associated effects include palatoschiasis and kyphoscoliosis (Morrow. 1986). However, in the present case no such additional defects were encountered. Several forms of arthrogryposis have been reported to have a genetic origin in man. In Brown Swiss and Holstein Friesien cattle congenital contractures have been reported and classified as spinal Muscular Atrophy (SMA) due to survival motor neuron (SMN) gene (Logeri *et al.*, 2003). Non-hereditary causes of muscular contractures have also been reported (Roberts, 1971). The fixation of the joints may be due to lack of extensibility of the muscles, ligaments or atrophy resulting from neuropathy (Tyagi and Singh, 1996).

In the present case of arthrogryposis, flexion of joints resulted in bilateral hip flexion causing dystocia. Forced extraction is seldom indicated in such cases, which can result into uterine or vaginal tears. Fetotomy is considered to be a better option with a high success rate in dystocia due to monsters (Sharma *et al.*, 1992). The fetotomy procedure is less stressful than the caesarean operation (Prabhakar *et al.*, 2002). The postoperative convalescence following fetotomy is quick and the future fertility is not affected, which is always questionable following caesarean operation (Sharma *et al.*, 1992). The fetotomy, however, needs critical evaluation before examination of the genital passage to avoid injuries and lacerations to the passage. In the present case, delivery of the calf with arthrogryposis through fetotomy was achieved successfully without any post-operative complications.

REFERENCES

Arthur,G.H., Noakes, D.E. and Pearson, H. (1989). Veterinary Reproduction and Obstetrics. 6th Edn. Bailliere Tindall. London pp 120.

Kumaresan, A., Garg, A., Mahapara, Shankar, U. and Agarwal, S.K. (2003). Dystocia due to hydrocephalus calf in a buffalo cow. Indian J. Anim. Reprod., **24:** 82.

Leipold, H.W., Saperstein, G. and Huston, K. (1996). In: Large Animal Internal Medicine, 2nd Edn. St. Louis. Mosby pp 1719-1722.

Longeri, M., Perrone, T., Bongioni, G., Bona, M., Zanotil, M. and Galli, A. (2003). Survival Motor Neuron (SMN) polymorphism in relation to congenital arthrogryposis in two Piedmont calves (Piemontese). Genet. Sel. Eval., **35**: 167-175.

Morrow, D.A. (1986). Current Therapy in Theriogenology. W. B. Saunders Company, Philadelphia pp 178.

Prabhakar, S., Nanda, A.S. and Ghuman, S.P.S. (2002). Changes in plasma cortisol concentration as an index of stress due to dystocia and obstetrical manoeuvres. Indian J. Anim. Sci., **72**: 309-311.

Roberts, S.J. (1971). Veterinary Obstetrics and Genital Diseases. 2nd Edn. C.B.S. Publishers. New Delhi pp 277-278.

Sharma, R.D., Dhaliwal, G.S., Prabhakar, S. and Nanda, A.S. (1992). Percutaneous fetotomy in management of dystocia in bovines. Indian Vet. J., **69**: 443-445.

Sloss, V. and Dufty, J.H. (1980). Handbook of Bovine Obstetrics. Williams and Wilkins. Baltimore pp 121.

Tyagi, R.P.S. and Singh, J. (1996). Ruminant Surgery. C.B.S. Publishers. New Delhi pp 200.