

EPIDURAL ANAESTHESIA WITH TRADITIONAL TECHNIQUE VERSUS EPIDURAL CATHETERIZATION TECHNIQUE IN BUFFALOES

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ABSTRACT

Epidural anaesthesia in buffaloes is done at sacro coccygeal or at first inter-coccygeal space. A new technique of injecting epidural anaesthesia was compared with traditional technique at first inter coccygeal space. Two group were done with Group 1 consisting of 10 cases and Group 2 with 6 cases were with affections of Tail gangrene, prolapse of vagina, caesarean section, vaginal tear and tail wound studied at Department of Veterinary Surgery and Radiology, College of Veterinary and Animal Sciences, Udgir. Group 1 was anesthetized by traditional method by inserting needle at 45 degree angle at first inter coccygeal space. Group 2 was anaesthetized by catheterization where in first as traditional technique 16 G spinal needle passed into epidural space then catheter was inserted and directed inside 1 to 1.5 inch inside and placed by confirming site. Study showed catheterization useful when incremental dose is necessary. It required care and experience to maintain catheter in position. Injury or trauma was minimum compared to traditional technique.

Keywords: *Bubalus bubalis*, buffaloes, epidural anaesthesia, catheterization, new technique of

epidural, first inter coccygeal spac

INTRODUCTION

Buffaloes play important role in agriculture economy of India. India has 58% of world's buffalo population. epidural anaesthesia is helpful for management of moderate to severe pain in major surgical procedures such as Cystorrhexis, dystocia, utero-vaginal prolapse, intussception, volvulus, fracture fixation and rumen impaction (Moulvi *et al.*, 2011b). Epidural analgesia is preferred over general anaesthesia as it useful in geriatric animals with high surgical risk and because of lack of advanced equipment under field (Hall and Clarke, 1983).

Epidural anaesthesia most commonly used in bovines however it has the traditional technique involves placement of spinal needle in close approximation of the sensitive spinal cord, correct placement of needle and deposition of anesthetic agent exactly in epidural space. This remains a challenge to even students, veterinary scholars and practitioners. Complications are found many times subsequent to the anaesthesia episodes, from minor as limp tail, meningitis, swelling, painful

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inflammation of rump region, neuritis of nerve supplying the hind quarter leading to dysfunction of perineum and hind limb musculature. These are mainly of traumatic origin retrospectively, occurred while performing the technique / procedure of epidural anesthesia. Hence to avoid this an sophisticated attempt was made like in human being to modifying the technique of epidural anaesthesia in buffaloes in present study.

Epidural anaesthesia is easier to administer and cheaper when compared to intravenous administration of anesthetics (Michael and Cousins, 2009). Almost all the various local anesthetic methods available to anaesthetize various regions of the body locally in buffaloes, majority of surgical procedure can be performed using epidural anaesthesia pertaining with tail, perineum region, rectum, vaginal and vulva, udder and scrotum (Tyagi and Singh, 1996).

MATERIALS AND METHODS

The post graduate research project was based on female adult buffaloes suffering from varying surgical disorders requesting epidural anaesthesia to examine and surgically treat disorders. They were prepared were divided into two groups to study two different techniques.

Group 01/ Technique A: Ten cases (Traditional technique)

The standard procedure of performing epidural anaesthesia was followed as per (Hall and Clarke, 1983).

Group 02/ Technique B: Six cases (Injecting epidural anaesthesia using catheter).

Traditional technique A was modified to make it suitable to inject local anaesthesia in epidural space. Animals were prepared aseptically

following standard methods. The procedure followed in technique A is followed to reach the needle tip in epidural space, till no resistance was found. Analgesic agent of 0.5 to 1 ml was administered to prevent pain / jerk. A catheter of 0.08 mm was introduced through the preplaced spinal needle (18 G, 6 inch long). A slight pain or jerk stimulation was shown by animal in response to touch of catheter tip to meninges of cauda equina.

Further catheter was passed in epidural space for 1 to 1.5 inch. No resistance of catheter to the operator, CSF flow outside catheter in retrograde manner and air was administered pushing CSF back into epidural space for about 2 to 3 ml. The anesthetic was administered once catheter is confirmed to be in epidural space. The spinal needle and catheter were retained in place using adhesive tape until complete procedure of medico surgical treatment.

All the buffaloes was sufficiently examined clinically and by taking history to ascertain the surgical affection. Further they were prepared for anesthesia and surgery and examined per rectally, per vaginally and physically under the epidural anaesthesia to asses extent / severity of affection straining and pain was abolished with muscle relaxation to facilitate the examination and surgical treatment.

RESULT AND DISCUSSION

Technique B was found easy to the access of epidural space. Little experience and skill minimized the risk and difficulties of epidural anaesthesia. Catheterization of epidural space helped for easy repeat inoculation / administration of injection without difficulties or much efforts

Table 1. Details of female Buffaloes, affection and technique used.

Group	No.	Age (years)	Weight (kg)	Nature of Surgical Condition	Type of surgical treatment	Observation on induction and recovery
Group 1: Technique A (Traditional Method)	1	3	326	Tail Gangrene	Amputation of tail was done	Smooth
	2	5	370	Traumatic infected wound	Tail amputation was done.	Smooth
	4	3.54	286	Utero-vaginal prolapse	Rope truss method of repositioning of uterus and vagina	Slightly uneven
	6	2.5	290	Caesarean section	Caesarean operation was done	Struggling
	8	3.6	360	Vaginal Tear	Suturing and repositioning	Violent
	9	4	370	Tail Gangrene	Amputation of tail was done	Smooth
	10	4.7	356	Fractured tail tip	Tail amputation was done.	Smooth
	11	2	290	Prolapse of Uterus	Repositioning of prolapsed mass and fixing with rope truss	Smooth
	12	3.2	276	Utero-vaginal prolapse	Rope truss method of repositioning of uterus and vagina.	Smooth
	16	5.5	313	Vaginal Tear	Suturing and repositioning	Smooth
Group 2: Technique B (Epidural Catheterization Technique)	3	8	276	Utero-vaginal prolapse	Rope truss method of repositioning of uterus and vagina.	Slightly uneven
	5	3.2	380	Caesarean section	Caesarean operation was done	Slightly uneven
	7	3.6	246	Vaginal tear	suturing and repositioning	Struggling
	13	3	350	Caesarean section	Caesarean operation was done	Slightly uneven
	14	2.5	292	Caesarean section	Caesarean operation was done	Slightly uneven
15	6	340	Vaginal Tear	suturing and repositioning	Violent	



A.



B.

Figure 1. A: Epidural catheterization.

B: Fixing of catheter for epidural anesthesia.

(Technique B).

Injury or trauma directly to spinal structures and indirectly to hind quarters and region was minimized by using technique B. In this study no such complications were noticed. Cerebrospinal fluid collection, specimens, and observation for further research were convenient.

Brook (1935) reported tail paralysis as a complication using Technique A. Lumb and Jones (1984) hind limb incoordination, paresis was noted in epidural anaesthesia. Wright and Arthur (1983) radial paralysis, severe tympani, hypovolemic, peripheral or visceral shock were reported as a complication in their study.

In technique A, limited depth of analgesia, more drug quantity and more dose requirement was observed, wherein, technique B was found effective because no such needs were found as drugs could be precisely administered in epidural space.

The technique B method for epidural anaesthesia was found very effective than technique A. The repeated administration of incremental dose to prolong the duration and extend the area of analgesia was achieved technique B. It provided better control over the procedure than traditional technique A (Table 1).

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