



Refreshment training on minor and common surgical problems to animal health professionals in selected districts of Wolaita zone

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Abstract

Surgical training consists of developing cognitive, clinical and technical skills on minor and common surgical procedures in laboratory animals and patients. Current surgical skills training programs are under pressure due to increased service requirements, new and emerging techniques, a greater focus on surgeons' competence, and concerns regarding patient safety. In order to face these challenges and to improve surgical training, Veterinary schools are prepare their training curricula with an increased interest in the use of rapidly developing and emerging training strategies. Surgical simulation offers the opportunity for surgical trainees to practise surgical skills (mental practice and reinforcement) before entering the operating room and allows for detailed feedback (proximal and technical), and objective assessment of performance. To establish whether there is benefit in using simulated environments to teach surgical skills, it must be shown that the skills acquired through simulation-based training can positively transfer to clinical practice.

Keywords: Common Surgery, Minor Surgery, Surgical Training, Wolaita Zone

1. Background and justification

Animal production has been considered as the main component of agricultural development in most parts of sub-Saharan Africa. Like in many developing countries, domestic animals play a crucial role in Ethiopia, they constitute as source for traction power, income, in provision of meat, milk, honey, eggs, cheese, and butter supply provide mainly the needed animal protein that contributes to the improvement of the nutritional status of the peoples (Mekonnen *et al.*, 1989). Ethiopia is known for its high livestock population, being the first in Africa and tenth in the world. The recent livestock population estimate that the country has about 44.3 million cattle, 46.9 million sheep and goats, more than 1.0 million camels,

4.5 millions equine, and 40.0 million chickens (CSA, 2004).

Despite the large number of livestock in Ethiopia the sector is characterized by low productivity and income derived from this sector of agriculture's couldn't impart significant role in the development of the country's economy (Mukasa-Mugerwa, 1998). The low productivity is attributed to the low genetic potential of indigenous cattle, poor nutrition and reproductive performance, inadequate management, high disease incidence and lack of surgical knowledge and skill for diagnosis and treatment of diseased animals. In tropical areas livestock health problems is

high due to environmental factors like high temperature and humidity, topography structure of sloppy area exposed to flood so easy to infect soil born diseases, stress factors and drought are common in these area as a result feed availability is limited, low vegetation coverage and weakness of animal health services (Assegid, 2000).

Animal diseases particularly those caused by surgical problems/diseases are the major constraints to livestock production in the most parts of the country (Palling and Dwinger, 1993; Bennett and Ijpelar, 2005). Veterinary surgery is performed on animals by veterinarians to treat the minor and major surgical diseases. Veterinary surgery is can be classified into three broad categories: orthopedics (bones, joints, muscles), soft tissue surgery (skin, body cavities, cardiovascular system, GI/urogenital/respiratory tracts), and neurosurgery (Tobias and Ayres, 2006). Advanced surgical procedures such as joint replacement (total hip, knee and elbow replacement), fracture repair, stabilization of cranial cruciate ligament deficiency, oncologic (cancer) surgery, herniated disc treatment, complicated gastrointestinal, urogenital procedures, kidney transplant, skin grafts, complicated wound management, minimally invasive procedures (arthroscopy, laparoscopy, thoracoscopy) are performed by Veterinary Surgeons (Ellison, 1998).

1.1. Statements of the Problems

There are numerous influences on productivity and fertility of herds i.e. losses due to mortality and morbidity, loss of weight, slow down growth, poor fertility performance, loss of income, loss animal products and by products and decrease physical power. These problems occurred due to several factors like lack of sufficient veterinary surgeons in the clinics, lack of refresher training for animal health professionals, inadequate surgical instruments in the clinic, lack of knowledge and skill in anesthetic techniques, lack of anesthesia in the clinics, and most of animal health workers are diploma holders. Therefore, refreshment training on minor and common veterinary surgery is important bridge to improve the knowledge and skill gap on animal health sector with reference to certain districts (Bodity, Areka, Sodo and Humbo) of Wolaita zone.

1.2. Rationale

The purpose of this training is to update knowledge and skill of Animal Health professionals, who are currently on duty in and around Wolaita Sodo.

This training is important to reduce death and morbidity of animals. In addition to this, it is the best option to relief the animal from pain.

1.3. Program Objectives

The general objective of this refreshment training program is to deliver quality and recent educational training on different types of veterinary surgery, surgical techniques, anesthetic techniques pre and post operative care to meet the pressing gaps animal health sectors in selected districts of Wolaita Zone.

The specific objectives of this refreshment training program are:

- ❖ To improve the knowledge and skill of Animal Health professional on minor and common veterinary surgery.
- ❖ To update Animal Health professionals skills on premedication, anesthesia and anesthetic techniques.
- ❖ To provide refreshment training for Animal Health professionals on suture materials and suture techniques.
- ❖ To highlight Animal Health professionals about the names and functions of common surgical instruments.

2. Work description

2.1. Surgical Personnel

Regardless of the complexity of the procedure, a multidisciplinary approach is most likely to produce the best results. A multidisciplinary approaches surgical qualified personnel was perform the following activities: provide veterinary oversight at the activity site and ensure adequate veterinary care for the animals; prepare the animals and monitors it throughout the surgery and recovery; administering anesthetic agents during the procedure and monitoring the animals to ensure adequate analgesia and physiologic homeostasis and perform the operations. Each components of the team may involve one or more persons. In this program all tasks were perform by one surgeon. However, other co-researchers were assist him.

2.2. Personnel Requiring Training

Trainees are veterinarians who are currently on duty haven't received this types of training and have poor

experience in common surgical procedures, methods of anesthesia, suturing techniques, pre and post operative care of animals. They were received such types of training in experimental surgical techniques or in laboratory animal species. Trainees were arranged in a team approach to share their skills during training. The contributions of team work is important in the diagnoses of surgical diseases, surgical anatomy, anesthetics techniques, surgical procedures, pre and post operative care. A minimum of 12 Animal Health Professionals were participate in the training program. The trains should have diploma and above in animal health with minimum aggregated of 2.00. The trainees were accept to carryout routine tasks associated with proper maintenance and care of the animals during training program and after return to their duty station.

2.3. Training Programs

This refresher training program was involve in common and minor veterinary surgery. It was provide appropriate expertise and support for trainees. The refreshment training program on experimental animals will be comprehensive and include subjective such as humane methods of animals experimentation, interspecies variation in anatomy, anesthesia, suturing technique, surgical procedure, pre and post operative care, aseptic technique, as well as a variety of other subjects that might be appropriate.

2.4. Duration of the program

The training was conducted over a total time period of 8 days. During this period, the trainees were engaged in intense in theoretical and practical training on common veterinary surgical procedures, surgical disease diagnoses, anesthetic techniques, suturing

3.2. General Course Description

techniques, surgical wound and wound managements, pre and post operative care.

2.5. Teaching-learning Methods

The mode of instruction was practical demonstrations, field visits, reports, class activities, team work, individual and group assignment, as well as continuously supervised formal practice on minor and common surgical procedures.

2.6. Evaluation of Surgical Competence

The researchers have responsible to ensure that all personnel was competent to perform surgical procedures on animals. At the end of each topic, the trainees were taken theoretical and practical exams. In addition to this, they were engaged in team work, individual and group assignments.

2.7. Graduation Requirements

A candidate who satisfies the boards of examiners in practical examinations were graduated. Researchers and research coordinator of school of veterinary medicine, Wolaita Sodo University, was awarded the certificate on minor and common veterinary surgery.

3. Methodology

3.1. Course Organization and Management

The researchers were offers an opportunity to animal health professionals to update their knowledge and skill on common and minor veterinary surgery. Considering the fact that surgical problems are the most dominant problems in all veterinary clinics of Sodo Zuria districts.

Table 1: Course description and time allocation

Days	Subtopics	Hours		Total
		Theory	Practical	
Day 1	Common surgical instruments	1	2	8 hrs
	Suturing techniques	2	3	
Day 2	Anesthetics technique	3	5	8 hrs
Day 3	Wound management and postoperative complication	1	3	8 hrs
	Haemorrhages and haemostatics	1	3	
Day 4	Lameness in dairy cow and equines	1	2	8 hrs
	Surgical problems of teat in cow	2	3	
Day 5	Hoof trimming	1	2	8 hrs
	Dehorning in cattle	2	3	
Day 6	Ruminotomy in sheep	3	5	8 hrs
Day 7	Tail amputation in cattle	1	3	8 hrs
	Open castration	1	3	
Day 8	Cesarean section in sheep	2	6	8 hrs
	Grand Total	21	43	

3.3. Practical Course Description

Introduction to common surgical instruments, positioning, operation theatre routines, preparation of surgical patients and sterilization. Familiarization with various suture techniques, anesthetic technique, wound management, haemostatic techniques, laminitis and teat surgery. Demonstration of surgical operation on live animals like ruminotomy, tail amputation in cattle, open castration, hoof trimming and cesarean section in sheep.

4. Major Achievements of the Project

Surgical training is a combination of requisite knowledge, technical skills, cognitive skills, decision-making ability, communication skills, leadership skills, and professional ethics. Simulated training allows trainees to practise the cognitive and technical skills of a procedure under various surgical conditions without the pressures of the operating room, and allows for the teaching of rare or unusual cases. The training program should include a component of routine refresher training to keep Animal Health Professionals current on updated their knowledge, practices, procedures, and, most importantly, safety-related topics.

In the present training, the trainees were updated their knowledge, technical skills on minor and common surgical procedures. The trainees were familiarized with various common and specific surgical instruments, preparation of operation theatre routines, preparation of surgical patients and sterilization techniques of surgical instrument. They were updated their knowledge and skills on absorbable, non-absorbable, monofilament and multifilament suture material, types of suture techniques in different species of animals, types of local, general and inhalation anaesthesia and anesthetic technique in different species of animals, types of wound and wound management, haemorrhage and haemostatic techniques, laminitis and teat surgery. The trainees were demonstrated and recognized the common surgical operations and their surgical procedures on live animals species like ruminotomy, tail amputation, open castration, hoof trimming and cesarean section.

In this training, the refreshment training was planned and scheduled regularly with timely and relevant topics which are likely to change frequently. The trainees, Animal Health Professionals, were educated about the law of surgical consensus, regulations, and guidelines that govern animal medical records and

related documentation. They were trained to implement the corresponding institutional policies and procedures. Examples of procedures to be documented are physical examinations, vaccinations, diagnostic tests, anesthesia, surgeries, and necropsies.

The trainees were receive training on recognizing pain and distress appropriate to their level of interaction with the animals pre and post operatively. The recognition of pain and distress in animals is an overarching necessity during the conduct of any task such as observing or feeding animals, administering treatments, transporting animals around the facility, pre and post operatively. Staff should receive training on the normal appearance and behaviors of the species of animals under their care with a special focus on the abnormalities that occur most commonly. They were updated their knowledge and skill to recognize an abnormal appearance and/or behavior based on normal animals of the same species, strain, research group, and age. They were updated their knowledge and skills on post operative complications and their management; recognizing and addressing animal emergencies (e.g., poor vital signs, injury, escape). Additionally, trainees were informed about specific exemptions to humane endpoints approved on protocol for particular animals. A linchpin in addressing a situation involving humane endpoints is the rapid communication between the animal care technician, veterinary staff, and researchers to resolve the situation in a timely manner.

5. References

- Allen, D. A., Smeak, D. D. and Schertel, E. R(1992): Prevalence of small intestinal dehiscence and associated clinical factors: a retrospective study of 121 dogs. *J. Am. Anim. Hosp. Assoc.*, **28**:70- 76.
- Assegid, W. (2000): Constraints to livestock and its products in Ethiopia: policy implication, DVM thesis, Faculty of Veterinary Medicine, Addis Ababa University, Debre Zeit, Ethiopia.
- Bennett, R. and Ljpelar, J. (2005): "Updated Estimate of the cost Associated with thirty four Endemic Livestock Diseases in Great Britain: A note". *J. Agricu. Econom.*, **56**: 135-144.
- Central statistics authority (CSA) (2004): Agricultural sample survey report on livestock, Poultry and beehives populations. CSA, Addis Ababa, Ethiopia.
- Ellison, G. (1998): Techniques in small animal surgery. Current techniques 4th ed. Baltimore, M. D: Williams and Wilkins, Pp. 245-248.

- Mekonnen, T. (2000): An epidemiological study on ovine pasteurellosis in Arsi, South East Ethiopia, DVM Thesis, Faculty of Veterinary Medicine, Addis Ababa University Debre Zeit, Ethiopia.
- Mokasa–Mugeraw, E. (1989): Review of Retrospective performance of female *Bos indicus* (Zebu) Cattle. ILCA monograph ILCA, Addisu Ababa, Ethiopia.
- Palling, R. and Dwinger, R. H. (1993): Potential use of tolerant breeds as a contribution to sustainable livestock production in disease endemic areas of Africa. *Vet. Quart.*, **15**: 2.
- Radostitis, O. M., Blood, D. C. and Gay, C. C. (1994): Veterinary Medicine: a test book of the diseases of cattle, sheep, pigs, goats and horses, 8th ed. Bailliaaere Tindall, London. Pp. 652-656.
- Slatter, D. H. (2003): Textbook of small animal surgery. 3rd ed. Philadelphia, Pa: Elsevier, pp. 644-664.
- Thrusfield, M. (2005): The control and eradication of diseases. In: Veterinary Epidemiology.3rd ed. Black well science LTD. Oxford. UK. Pp 384-402.
- Tobias, K. M. and Ayres, R. (2006): Intestinal anastomosis. *Vet. Med.*, **101**(4): 226-229.

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