

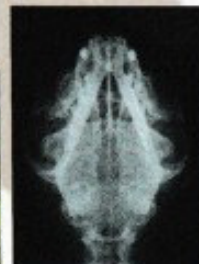
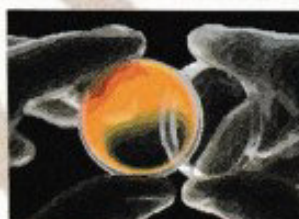
PROCEEDINGS

The First Congress of

SEAVSA

(South East Asia Veterinary School Association)

Animal Health & Production
for Better ASEAN Quality of Life
Challenge of Veterinary Education



IPB International Convention Centre
Bogor, Indonesia July 20 - 22, 2010

Proceedings

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Hosted by Faculty of Veterinary Medicine
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SOUTH EAST ASIA VETERINARY SCHOOL ASSOCIATION (SEAVSA): ROLES AND DIRECTION IN VETERINARY EDUCATION

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*President of South East Asia Veterinary School Association
Dean of Faculty of Veterinary Medicine, University Putra Malaysia*

Introduction

Faculty of Veterinary Medicine (FKH) Universiti Airlangga, Indonesia, Department of Veterinary Service (DVS), Malaysia and Faculty of Veterinary Medicine (FPV), Universiti Putra Malaysia started a joint conference first held in Kuala Lumpur, Malaysia in 2007, Surabaya Indonesia 2008 and Putrajaya, Malaysia in 2009. During the third joint conference in Putrajaya, Malaysia hosted by Faculty of Veterinary Medicine, Universiti Putra Malaysia in 2009 attended by Deans and staff of seven (7) veterinary schools, a joint decision was made to establish a platform towards the formation of a common meeting group, named South East Asia Veterinary School Association (SEAVSA) on 7 December 2009. Faculty of Veterinary Medicine, Universiti Putra Malaysia was given the mandate to lead in the formation of SEAVSA. Faculty of Veterinary Medicine, Universiti Airlangga, Indonesia was to hold the first meeting towards forming the committee. A meeting in Surabaya was held on 16-17 February 2010 at Faculty of Veterinary Medicine, Universiti Airlangga with the formation of the Pro tem Committee of SEAVSA with the following office bearers:

President	:	Associate Professor Dr. Bashir Ahmad Fateh Mohamed Universiti Putra Malaysia, Malaysia
Vice President	:	Professor Dr. Romziah Sidik Airlangga University, Indonesia
Secretary	:	Professor. Dr. Mohd Hair Bejo Universiti Putra Malaysia, Malaysia
Treasurer	:	Associate Professor. Dr. Suneerat Alumlamai Khon Kaen University, Thailand
Members	:	1. Gajah-Mada University, Indonesia 2. Bogor Agricultural University (IPB), Indonesia 3. Udayana University, Indonesia 4. Brawijaya University, Indonesia 5. Syah Kuala University, Indonesia 6. Chiangmai University, Thailand 7. Kasetsart University, Thailand 8. University Veterinary Science, Myanmar 9. Hanoi Agriculture University, Vietnam 10. Universiti Malaysia Kelantan, Malaysia

A decision was also made to hold the 1st SEAVSA Conference in Institut Pertanian Bogor (IPB) hence replacing the joint Universiti Airlangga, DVS and UPM conference.

Roles of SEAVSA

South East Asia Veterinary School Association has an important role to ensure a uniform approach in veterinary education to address the regional needs and requirement. Road map and strategic planning need to be formulated to ensure effective human resource development and training of veterinarian to serve the region with possible contribution to global requirement.

This can be achieved with all veterinary schools in ASEAN under SEAVSA collaborating in activities in academic areas of mutual interest via:

1. Promotion of cooperation of all participating institution through solidarity among academician, professional, administrators and students.
2. Development of academic and human resource.
3. Exchange of academician, researchers, administrative staff and students.
4. Promotion of collaborative research, joint lectures and symposia and any other activity of mutual interest.
5. Promotion and exchange of information and materials towards teaching, research and professional services.
6. Sharing of expertise and facilities.

Current Status of Veterinary Education and Industry – ASEAN

South East Asia is a region comprising of 10 countries with a total population of 580 million which is 8.7% of the world population. With an estimated GDP of USD 1.5 trillion, if ASEAN is a single country, it would be rank as the 9th largest economy of the world.

In veterinary teaching there is only 6 countries with veterinary school namely Philippines, Indonesia, Thailand, Vietnam, Malaysia and Myanmar with an estimated total of 38 veterinary schools. Figure below however, shows the number of veterinary school as listed by the world veterinary association.

Table 1: Statistic of veterinary school as listed by World Veterinary Association

Country	Number of Veterinary school WVA (other source)
Philippine	22 (22)
Thailand	6 (6)
Indonesia	4 (5)
Malaysia	1 (2)
Vietnam	0 (2)
Myanmar	1 (1)
Total : 6	34 (38)

The absence of veterinary school in 4 other member country, Singapore, Brunei, Cambodia and Laos do not reflect the absence of requirement or industry as veterinarian are employed from regional or international graduate.

Majority of ASEAN Veterinary schools offered veterinary curriculum mainly based on the British or the American system of education with a balance of medicine and production. Veterinary curriculum were mostly based on the socio economic status of the country mainly agriculture and agro base industry. However, the number of graduate may not reflect the countries human resource planning and requirement. Formal academic networking in South East Asia is only through ASEAN University Network (AUN) which is a consortium of South East Asian University. Such collaboration does not exist within faculties of South East Asian University. Collaboration between ASEAN veterinary school are mainly based on MoU, MoA, joint conferences, regional meeting, international meeting and government linkages. However, with the close regional association and governmental administration and trade, there is a need to have a stronger ties and cooperation between ASEAN veterinary schools towards training of veterinarian for regional requirement. The proposed formation of SEAVSA is towards such cooperation.

Changing Scenario and Future Direction

One of the most critical issues currently facing veterinary medical education is how to improve to meet regional and global requirement or standard. Any improvement in the area of veterinary education towards country, regional and global requirement must address the following:

1. Food, pet, recreation, wildlife and exotic animal medicine unique to the country, region and global;
2. Welfare of animal species;
3. Ecosystem, global impact, global warming and environment;
4. Zoonosis unique to country, region and global;
5. Disease transmission within the country, region or global;
6. Handling of emergency and outbreak.

The existing normal teaching approach adopted by faculties is to meet the current needs of the industry. However, the involvement of the industry is expected to change in the near future with accommodation of the following:

1. Day one competency.
2. Modern and large scale production with minimum pollution and impact on environment.
3. Aquaculture with consideration of production, disease, treatment and control.
4. Animal behavior, welfare, ethics and public education.
5. Soft skills and communication with clients.
6. Economics and entrepreneurship.
7. Wild life and exotic animal medicine.
8. Global medicine – one world, one medicine, one health, disease cross spatial and border and global issue.
9. Laws and religion of country.
10. Food safety – total control and assurance of food production from farm to table safety.
11. The use of modern and up-to-date laboratory diagnosis.
12. Accreditation and regional or global recognition

The teaching of veterinary medicine must address day one competency but differentiation need to be made with specialization and expertise. Day one competency may be aided with streaming to develop and strengthen competency in species or discipline oriented teaching. However, specialization should be addressed at the post graduate level such as internship and residency programme. Such specialization may be species specific such as ruminant medicine, equine medicine, laboratory animal medicine or discipline base such as internal medicine, ophthalmology, neurology and dermatology.

In anticipation of expansion of livestock, pet animal, recreation and wild life and other veterinary and production related discipline, allied veterinary scientists may be anticipated. New programme may be introduced such as animal production, veterinary nursing, veterinary laboratory technician, wild life management and conservation.

Veterinarians are also required to keep abreast with current and modern veterinary medicine. Hence, continuing education is important towards improving competency of veterinarian.

Conclusion

ASEAN veterinary school through a common platform of SEAVSA must be able to address the need for veterinary education and curriculum as fit to the region. Issues of political, social, economic, environment and religion of the region have to be included. The veterinary education In ASEAN must be oriented towards emphasis on animal health and production of the region. However, issue on accreditation and recognition is vital towards regional and global employment.

TESTICULAR BIOPSY GUN NEEDLE AS AN ALTERNATIVE BIOPSY METHOD FOR THE ASSESSMENT OF SPERMATOGENESIS IN THE KIJANG MUNTJAK (*Muntiacus muntjak muntjak*)

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Introduction

Kijang muntjak (*Muntiacus muntjak muntjak*) belongs to the family Cervidae. They are distributed in Java and South Sumatera and are protected by Indonesian Government. Reproductive biology of male kijang muntjak and its relation to antler growth has not been reported yet. Generally, there are three stages of antler growth in the male Cervids, hard antler, casting and velvet antler. In most of male cervids, the growing antler period has close relation with reproductive activity such those reported in Rusa Timor (*Cervus timorensis*). In rusa Timor stags, spermatogenesis is occurred only during the hard antler period (Handarini *et al.*, 2004). On the contrary, male Formosan muntjak, spermatogenesis is still active although in velvet antler period. (Pei *et al.*, 2009). Therefore, it is important to determine the reproductive activity in male kijang muntjak in Indonesia. Spermatogenesis can reflect the reproductive activity and can be investigated histologically in the testicular tissue obtained at each of the antler stage. Biopsy procedures have been performed in the Eld's deer stags (*Cervus eldi thamin*) (Monfort *et al.*, 1993), and Rusa Timor stags (*Cervus timorensis*) (Handarini *et al.*, 2004) using open biopsy method with testicular surgery which resulted in a longer recovery time of testis. In this present study, we carried out testicular biopsy using a gun needle, a simple method without testicular surgery. The objective of this work was to determine the effectiveness and advantages of gun needle method for the assessment of spermatogenesis in the kijang muntjak.

Materials and methods

Animals

Three adult and apparently healthy males kijang muntjak (2-4 years of age; 17-19 kg body weight) were individually housed in animal house measuring 2x1 m², which has a connection to the outdoor enclosure. All of animals were maintained within visual and olfactory proximity to the female kijang muntjak.

Testicular biopsy procedure

Prior the biopsy, each animal was immobilized using a combination of xylazine HCl and ketamin. The surface of scrotal skin was antisepticised using ethanol 70% and iodine. Biopsy method was performed as described previously by Tuuri *et al.* (1998). Biopsy was taken in dorsal area of right or left testis. A 14 gauge needle (Fine core 'Toray' 14 G, Japan) was inserted through scrotal skin to the testicular tissues (Fig. 1). Once needle was inserted into the testis, a strong negative pressure of biopsy gun was exerted to cut and obtained testicular tissue. After tissues aspiration, the needle was withdrawn slowly. The area of injection in the scrotal skin was treated by antibiotic ointment topically and the animal was given a long acting antibiotic.

Histological preparation

Fragments of biopsy were immediately fixed in Bouin's fixative for 24 h and transferred to ethanol 70%. The biopsy samples were processed by a routine histological procedure. Paraffin sections stained with haematoxylin and eosin (HE) and periodic acid Schiff (PAS).

Results

Recovery of testis

The recovery of injury caused by biopsy was 7-10 days. No inflammation sign neither haematomas appeared in scrotal skin.

Histological evaluation

Histological evaluations showed 5-8 seminiferous tubules with different stages of the spermatogenesis in each of paraffin section (1a). Spermatogonia, spermatocytes and spermatids were distributed in adluminal of tubules, and also the Sertoli cells and perimyoid cells. In the interstitial area,

the Leydig cells could be observed (Fig. 1b). Spermiogenesis steps were clearly marked by the presence of PAS positive reaction in the acrosomes of round and elongated spermatids and spermatozoa (Fig. 1c).

Discussion

Testicular biopsy using open biopsy procedure has been conducted in several species such as Eld's deer for the assessment of spermatogenesis in certain period of reproductive activity (Monfort *et al.*, 1993). In present study, the application of gun needle method was done on the testis of kijang muntjak in hard antler period. The tissues showed intact seminiferous tubules with different stages of spermatogenesis, and various cells within and inter tubules (Fig. 1a, 1b). In sections stained with PAS, the spermiogenesis steps of spermatogenesis were clearly seen by the intense reaction of PAS in the acrosomes of round and elongated spermatids. Acrosomes are the important sites of carbohydrates that play a role in the development and function of spermatozoa. Based on these results, we concluded that the biopsy by gun needle can be a potential method in the histological determination of reproductive status.

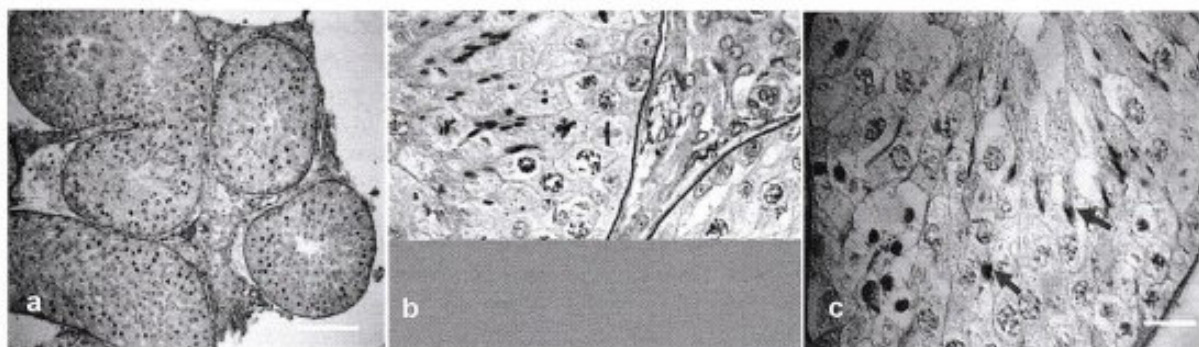


Fig. 1. Microphotographs of testis obtained by biopsy of gun needle method. The section showing several seminiferous tubules (a) and detail of seminiferous tubules with germinal cells, spermatids, Sertoli and Leydig cells (b) (H&E staining); Signs of spermiogenesis steps were observed by the presence of intense reaction of PAS in the acrosomes (arrows) (c) (PAS staining); scale bar for a: 20 μ m, b and c: 30 μ m.

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