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The Induction Ceremony of the 4th President of the Sri Lanka College of Veterinary Surgeons and Awarding of Fellowships and Memberships

The induction of the 4th President of the College was held on March 27, 2021 at the Auditorium of the Faculty of Veterinary Medicine and Animal Science, University of Peradeniya. This event was held as a hybrid event with the participation of online members and fellows as well. Prof. Upul Dissanayake, the Vice-Chancellor of the University of Peradeniya participated as the Chief Guest of the ceremony.

Dr. D. S. Kodikara inducted Dr. D. D. N. de Silva as the 4th President of the SLCVS. Later, addressing the gathering Dr. D. D. N. de Silva explained the activities she proposed to conduct over the next two years. She stated that she will continue to develop the activities initiated by the previous Councils. Furthermore, she stated that she is planning to pay more attention towards establishing a Chapter in Small Animal Medicine in collaboration with the Faculty of Veterinary Medicine and Animal Science to provide appropriate postgraduate training programmes.

President Dr. D. D. N. de Silva then inducted the new Members and Fellows who had been enrolled since the previous induction ceremony, and the Members who have been promoted as Fellows.

The event was attended by more than 80 participants, including Members, Fellows, and guests.

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Exchange of Garland and Cloak to the 4th President

Addressing the gathering by 3rd and 4th Presidents

The President and Members of the 4th Executive Council of SLCVS.

The Growing Importance of Aquaculture in Sri Lanka and the Role of Veterinarians in Aquatic Animal Health

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The Food and Agriculture Organization (FAO) defines aquaculture as 'the farming of aquatic organisms such as fish, crustaceans, molluscs, and aquatic plants for human use or consumption, in both coastal and inland areas, implying some sort of intervention in the rearing process to enhance production. Global aquaculture production is mainly targeted at producing aquatic animals for human consumption; finfish and crustaceans being the most important and popular groups. Global food fish consumption increased at an average annual rate of 3.15% from 1961 to 2017. This rate is almost twice that of annual world population growth (1.6%) for the same period. In contrast, the consumption of all other animal protein foods (meat, dairy, milk, etc.) increased only at an average annual rate of 2.1% during this period. Commensurate with global demand, aquaculture continued to grow faster than other major food production sectors. During the period 1990–2020, aquaculture production grew with an average growth rate of 6.7% and the world's total aquaculture production reached an all-time high of 122.6 million tonnes (live weight) in 2020. In the future, aquaculture will have an increasingly important role in providing food and nutrition for the world's growing population, as capture fishery resources continue to decline due to overfishing and pollution. The FAO estimates that by 2030, over half of the fish consumed by the world's people will be produced by aquaculture.

Ornamental fish or aquarium fish production is also an important component of aquaculture. Attractive, colourful fish that are kept for aesthetic or ornamental purposes are considered ornamental fish. In recent times, there has been an increase in the numbers of ornamental fish being used as pets (in fish bowls, aquarium tanks and garden ponds), as display animals (in public aquaria and zoos) or as a laboratory animal model for research. To cater to this growing demand, the breeding and rearing of ornamental fish has expanded into a lucrative global business with around 2,000 species traded annually involving over 50 countries.

Sri Lanka is blessed with a tropical climate and natural freshwater and brackish water resources for enhancing aquaculture production. However, Sri Lanka does not have a tradition of aquaculture and there was virtually no aquaculture until the beginning of the 1980s. Marine shrimp aquaculture and ornamental fish culture are the two main aquaculture sectors that have been developed to a commercially significant extent. The shrimp aquaculture industry commenced in the early 1980s in the East coast of Sri Lanka and witnessed a rapid growth by the mid-1990s. The black tiger prawn, *Penaeus monodon* was the main species cultured. In 2000, the country exported 4,855 Mt of shrimp (both farmed and wild-caught) generating an export income of Rs. 5,042 million. However, shrimp farming has never realized its full potential as production has significantly declined due to devastating disease outbreaks and unsustainable practices. In 2018, an exotic shrimp species named white leg shrimp/ Pacific white shrimp (*Litopenaeus vannamei)* has been introduced to Sri Lanka and the commercial production commenced in

2019. *L. vannamei* specific pathogen free (SPF) broodstock was imported from the USA and Thailand, and post larvae produced at private hatcheries from imported SPF broodstock are being distributed among farmers for growing. In the recent past, the transition from *P. monodon* to *L. vannamei* happened faster and by 2021, the production of *L. vannamei* (10,535 Mt) surpassed that of *P. monodon* (3,880 Mt). Once confined to Puttalam district, shrimp farming has now expanded into Batticaloa and Mannar districts as well. Today, Sri Lanka has a limited but stable shrimp production. Farmed shrimp export accounts for approximately 50% of the total export earnings from Sri Lankan fisheries.

The farming of ornamental fish in Sri Lanka is reported to have commenced around the 1930s. At present, the country has a share of approximately 3-4 % of the global ornamental fish export market. Sri Lanka exports marine, freshwater and brackish water fish species. By volume, freshwater aquarium fish species which are bred in captivity represent about 70% of the total exports. The most commonly traded species include guppies, mollies, platies, swordtails, tetras, barbs, koi carps, goldfish, Danios, Gouramis, Catfish and Cichlids (Angelfish, Oscar, Discus). The country generated an annual revenue of LKR 4193 million (US$ 20.70 million) in 2021 through the export of ornamental fish amidst the negative impacts of COVID-19 pandemic on the industry. The aquarium shops/pet fish stores in Sri Lanka serve the local consumer market and sell both imported and local freshwater ornamental fish species, the latter usually comprising the farm bred fish that are not up to the export quality standards.

Culture-based fisheries (CBF) of finfish species such as tilapia, Indian carps, Chinese carps and common carps in irrigation reservoirs have provided social and economic benefits to rural communities in Sri Lanka for several decades. Freshwater food fish farming (mainly Nile Tilapia) in backyard ponds/abandoned paddy fields has also received much attention among the rural poor as a source of supplementary income. Inland aquaculture fish production in the country has steadily increased during the last two decades (from 31,450 Mt in 1999 to 104,450 Mt in 2021) which could be attributed to proper management of the waterbodies with community participation, stock enhancement in reservoirs, increase of fish seed production and free issue of fingerlings by the National Aquaculture Development Authority of Sri Lanka (NAQDA). To improve CBF with high value species, NAQDA took an initiative to stock post larvae of freshwater prawn (*Macrobrachium rosenbergii*) in reservoirs and ponds. NAQDA has stocked 95 Mn fish fingerlings and 77.6 Mn post larvae of freshwater prawn in 2020. At present, Sri Lanka has a growing aquaculture production of finfish and freshwater prawn.

The potential for aquaculture sector development in Sri Lanka is significant. There is a growing awareness of the value chain and the opportunities it presents and therefore the interest in aquaculture industry is growing. Expansion and diversification of aquaculture would be a workable solution in the fight against poverty and food insecurity in Sri Lanka. If done appropriately, aquaculture can boost economic growth through foreign income generation, increase food safety and generate employment opportunities in coastal and rural areas. Considering the socioeconomic contribution of the aquaculture sector, Sri Lankan government is currently promoting nontraditional aquaculture as well, such as breeding and farming of sea bass, milk fish, mud crabs, sea cucumber and various other aquatic animal species.

In order to achieve the above goals, aquaculture growth must be sustainable. As with any livestock industry, there are a number of risks that can impact the sustainability of aquaculture. These include disease spillovers and transboundary transmission of diseases, overuse of antimicrobials and other chemicals, poor product quality due to residues and contaminants, decreases in water quality, pressure on wild finfish and shellfish stocks and genetic interactions between wild and domesticated stocks due to farmed exotic aquatic animals being escaped into the natural environment. Aquaculture relies largely on the aquatic environment and its growth usually occurs at the expense of the environment. Therefore, aquaculture is likely to cause substantial pollution impact on the environment. These negative impacts weaken the industry's future growth potential.

To face these challenges, the aquaculture sector needs a veterinary workforce prepared to respond to aquatic animal health issues and, public health and aquatic food safety related issues. Like all other animals, aquatic animals also need a specialized veterinary care. The involvement of veterinarians is essential in managing diseases, optimizing feeding, improving health and welfare of farmed aquatic animals, managing food safety risks associated with aquaculture, controlling fish-borne zoonotic diseases and minimizing the environmental impacts thereby ensuring sustainable growth and development of aquaculture.

Improving aquatic animal health, welfare and nutrition

Like other farming systems aquaculture also has its share of disease problems. The emergence and spread of new diseases has been a continuous threat to the aquaculture development and expansion. The major goal of aquaculture is to maximize the profit by growing as many animals as possible in the smallest possible volume of water. Increasing the stocking density will make the culture environment more stressful to the aquatic animals predisposing them to a multitude of diseases (Figure 1). These diseases cause devastating losses to the industry exceeding US$ 6 billion per annum globally. Country-level impacts of an aquatic animal disease can be estimated indirectly through the level of income, production losses, employment, international trade, investments and consumer confidence. Though the scale and cost of aquatic animal loss due to pathogens may be colossal, an overall estimation of losses in Sri Lankan aquaculture due to diseases has not been undertaken and therefore the aquaculture industry is largely unaware of the true economic impact of diseases.

Similar to dairy or poultry farmers, finfish and shellfish farmers also need veterinarians to produce disease free, high quality and safe products for the consumers. In aquatic medicine, prevention of health problems before they happen is always the best therapy. Even if diagnosed, treatment windows for aquatic animals are so short, usually a matter of days for fish, and hours for shrimp. Therefore, veterinarians can play a vital role in improving the health status of these farmed aquatic animals using their knowledge in biosecurity, disease prevention and control, and the use and potential adverse effects of pharmaceuticals. Veterinarians can advise and work with farmers and other aquaculture stakeholders to promote health of aquatic animals by strengthening the biosecurity measures, improving the environment, optimizing the diet, developing vaccines, designing better diagnostics to ensure early detection of diseases and reducing the use of antimicrobials. This approach would help the aquaculture industry in Sri Lanka to move away from current reactive disease management approach and to take a more proactive approach in aquatic animal health management.

Involvement of veterinarians is increasingly important in the treatment and prevention of ornamental fish diseases, a service mainly sought after by hobbyists, aquarium owners, fish breeders and exporters. However, many Sri Lankan fish farmers/hobbyists do not usually seek out veterinary advice. Instead, they visit pet fish shops or aquaria to seek advice on a suitable treatment or simply decide a medicine by referring to online hobbyist forums.

Figure 1: Koi carps (*Cyprinus carpio koi*) in cement grow out tanks- stocking at high densities will make the culture environment more stressful to the fish predisposing them to diseases.
Image credit: CAADDR

Prescribing medicines including antimicrobials by lay-people without having even examined the fish will therefore end up administering unnecessary and non-specific drugs, most often one after the other, until the condition improves or the fish dies. This approach further complicates the diagnosis and also leads to toxicities, hypersensitivity and possible carcinogenicity, environmental pollution, disruption of normal flora and facilitates the development of antimicrobial resistance in aquatic bacteria. Performing surgical and cosmetic procedures on fish by lay-people have been reported in many countries including Sri Lanka. It should be stressed that these practices seriously affect the health and welfare of fish, as a successful fish surgery requires not only experience but also a general surgical knowledge and familiarity with fish anatomy and should be performed while the fish is in an adequate plane of anesthesia (Figure 2).

Figure 2: A gold fish (*Carassius auratus*) with a tumor.(Image credit: CAADDR)

It should be noted that the clinical signs shown by fish when they are sick are often nonspecific and therefore the diagnosis should need to be made after careful consideration of the history, water quality, and gross and microscopic findings of the fish patient. For example, if a fish remains at the water surface of the tank or pond, gulping near the air-water interface (a behaviour described as ‘piping’), it indicates an underlying pathology in gills. However, the cause of gill damage may be diverse; either infectious -bacteria such as *Flavobacterium columnare* (Figure 3), parasites such as *Dactyrogylus* spp. (gill flukes), fungi such as *Branchiomyces* spp. or non-infectious - a change in water chemistry such as low dissolved Oxygen or high ammonia. Therefore, a proper diagnosis along with an evaluation of water chemistry should be made before administering medicines. In addition, aquatic animal diseases are often multifactorial making the treatment challenging.

Transboundary diseases are a major threat to both farmed and wild aquatic animals. These diseases are usually transmitted through the movement of live aquatic animals via international trade. White spot syndrome virus (WSSV) emerged in shrimp (*P. monodon*) culture in China in 1992 subsequently spread to Taiwan and Japan and later became panzootic. WSSV caused devastating losses to the Sri Lankan shrimp industry.

Figure 3: Gourami (*Osphronemus goramy*) with Columnaris disease caused by *Flavobacterium columnare* gulping near the air-water interface. Image credit: CAADDR.

Koi sleepy disease (KSD)/ Carp oedema virus (CEV) disease first emerged in Japan and achieved a widespread distribution across the globe within a few years of its emergence, through the international trade of koi carp. This disease has also been reported in Sri Lankan koi carp. The emergence of the Microsporidian parasite *Enterocytozoon hepatopenaei* (EHP) in *L. vannamei* culture in Sri Lanka (Figure 4) is a good example for rapid spread of exotic diseases once they get introduced into intensive aquaculture systems. As such, the involvement of veterinarians is increasingly important to assess the risk of disease emergence and spread through international and local trade.

Monitoring and surveillance of aquatic animal diseases has a great potential to effectively minimize the spread of diseases. It is well recognized that aquatic animal disease surveillance and reporting fall under the responsibility of the veterinary authorities. In Sri Lanka reporting of aquatic animal diseases to the World Organization for Animal Health (founded as OIE) is through the Focal Point for aquatic animal diseases and OIE delegate, the Director General/Department of Animal Production and Health.

Figure 4: Size variation in shrimp in the same batch due to Hepatopancreatic Microsporidiosis caused by *Enterocytozoon hepatopenaei* (EHP) in *L. vannamei* in Sri Lanka. Image credit: CAADDR.

Aquatic animals are more efficient in terms of nutrient utilization because less food needs to be consumed per body weight increase relative to terrestrial animals. However, the cost of feed is a constant challenge faced by aquaculture farmers. A sizable amount of feed is wasted away maximizing the costs. Aquatic animals should be offered feed that is sufficient, optimal in nutrient content and administered adjusted to species. Nutritional advice is an important part of aquatic animal medicine. Veterinary intervention is, therefore, useful to implement nutrition plans that will provide greater benefits to aquatic animal health and disease prevention and to formulate environmentally and economically sustainable probiotic and prebiotic feed additives.

Managing Food safety risks associated with aquaculture and controlling Fish-borne zoonotic diseases

As with other food producing species, veterinary involvement is vital to ensure that food products derived from aquatic animals are safe for human consumption and appropriately certified to meet international trade requirements. Biological hazards in aquatic animals for human consumption include bacteria, viruses, and parasites. Bacterial pathogens that occur in food fish and seafood and cause human illness are either environmental or indigenous microflora (*C. botulinum, V. parahaemolyticus, V. cholerae, Aeromonas spp., Listeria spp.*) or non-indigenous microflora introduced via faecal contamination during processing (*Salmonella* spp. and *E. coli*). Besides bacteria, a wide range of fish species harbour parasites among which some are transmitted by the consumption of raw and inadequately cooked fish. Viruses such as norovirus and hepatitis viruses types- A and E have also been associated with disease outbreaks due to shellfish contamination.

The use of antibiotics and other chemicals in aquaculture has also increased exponentially as a result of intensification. When used in food animals, antimicrobials should be under veterinary supervision. Misuse of veterinary medicines can have severe consequences on the quality and safety of fish and shellfish. These include but are not limited to the occurrence of residues and the development of multi drug resistant pathogens. Many countries have imposed strict regulations dictating acceptable residue levels in seafood and therefore the prudent use of antibiotics in aquaculture under veterinary supervision is critical in ensuring the safety of aquaculture products and the sustainability of the trade.

A variety of bacterial, fungal and parasitic zoonotic pathogens have been isolated from a number of aquatic animals including tropical ornamental fish. Veterinarians have to play a crucial role in ensuring public health through diagnosing and reporting zoonotic diseases associated with aquatic animals. These zoonotic pathogens can be transmitted to humans through direct contact with aquatic animals, the water they are kept in, and through the consumption of raw or undercooked fish products. Veterinarians should communicate with clients about the potential risks of zoonotic pathogens of aquatic origin. Common zoonotic bacteria transmitted via aquatic animals include *Aeromonas hydrophilia*, *Mycobacterium marinum*, *Streptococcus iniae*, *Vibrio vulnificus*, and *Photobacterium damselae*. “Fish handler’s disease” or “fish tank granuloma” is an important fish-borne zoonotic bacterial infection. Though not very common in occurrence, this condition has been reported in Sri Lanka in an ornamental fish hobbyist following a cut injury sustained while cleaning a fish tank.

Despite the economic importance of this industry for Sri Lanka and potential opportunities that prevail in the industry for the veterinary profession, aquatic veterinary support for the sector is still in a developing stage. Possible reasons for farmers not seeking veterinary advice include the limited availability of veterinarians willing to offer services for aquatic animals, low perceived value of ornamental fish compared to the cost of consulting a veterinarian and transporting a fish for veterinary consultation and limited knowledge about the availability of veterinary services offering aquatic animal consultation. Due to the limited involvement of veterinarians, there is a high representation of non-veterinarians in the aquatic medicine field. Aquatic-animal health is a specialized field. Therefore, veterinarians require a comprehensive education at the undergraduate level that involves not only the knowledge and experience in distinguishing structural and functional differences between fish and terrestrial animals but also understanding the dynamics of the aquatic environment. Veterinary schools in many countries incorporate aquaculture and aquatic-animal health in the undergraduate curricula but a relatively small number of credit hours (only a few lectures and practicals) in the core curriculum is allocated for these subjects. As such, many veterinarians do not feel well-prepared to handle aquatic animal disease cases. As a result, fish owners may encounter rejection by veterinarians when they seek help. Veterinarians with an interest in aquatic animal health usually do a postgraduate degree in aquatic medicine, or an allied filed, after completing their veterinary degree.

Considering the importance of producing veterinarians with aquatic animal health expertise, the Faculty of Veterinary Medicine and Animal Science of the University of Peradeniya, in its new curriculum implemented in 2020, has incorporated a three credit compulsory course on 'Aquaculture and Aquatic Animal Health'. Having a detailed subject of its own will provide more learning opportunities for the veterinary students to be competent and well-versed in a wide variety of conditions and diseases affecting aquatic animals and their corresponding medications and treatments. More training opportunities and continuous professional development opportunities should be made available for interested field veterinarians to build up on-the-job experience in the diagnosis and treatment of aquatic animal diseases. The Center for Aquatic Animal Disease Diagnosis and Research (CAADDR) attached to the Department of Veterinary Pathobiology of the Faculty of Veterinary Medicine and Animal Science, University of Peradeniya offers training programmes on aquatic animal health management to veterinarians on request catering to the training needs of the sector.

With their knowledge in terrestrial animal health, veterinarians are well-placed to play a leading role in aquatic animal health management. As the local and global interest in aquaculture continues to grow, the collective action of veterinarians, other aquatic animal professionals and technical experts in the field will be imperative to address health and environmental issues in aquaculture in order to ensure the productivity and sustainability of the industry.

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Minimally Invasive Surgical Procedures

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Minimally invasive surgery has become increasingly popular in the veterinary field during past years. These surgical techniques are getting trendier among veterinarians and pet owners with its nature of minimal intrusiveness, while still maintaining medical precision, effectiveness, and efficiency. It can be used as diagnostic and therapeutic approaches, allowing veterinarians to make a diagnosis and carry out surgical procedures at the same time. In this article, two surgical approaches are being highlighted to share the experience and the limitations of the application.

1. Minimal Invasive Laparoscopic-guided Tubectomy in Toque Macaque

Laparoscopic surgery or `keyhole surgery` has benefited from many technical advances over recent years, achieving better results while reducing several surgical complications in human as well as in animal. The wide range of equipment and instruments available allow for the performance of surgical procedures without the large incisions that characterise conventional surgery (Chapron *et al.*, 2002; Tapia Araya *et al.*, 2015). Laparoscopic surgery constitutes a growing area of expertise in clinical practice in both human and animal. The most common procedures such as organ biopsy or ovariectomy, and other more complex surgeries such as adrenalectomy and pericardiectomy are described in previous studies (Tapia-Araya *et al.*, 2015).

In the last few years, the use of laparoscopy in veterinary medicine has expanded (Shariati *et al.*, 2014). Distinct advantages of laparoscopy guided surgery over a traditional "open" approach have been reported in the veterinary literature with a reduction in pain (Devitt *et al.*, 2005), a more rapid return to function (Culp *et al.*, 2009), lower surgical site infection rate (Mayhew *et al.*, 2012) and reduced hospitalization time (Mayhew *et al.*, 2014).

Because of the various advantages of laparoscopic procedure, it has become an alternative to traditional midline ovariohysterectomy (Chapron *et al.*, 2022; Collins, 2008). Laparoscopic surgery provides a wide field of its extensive application with minimal invasive alternative approach to conventional surgery in veterinary medicine. Laparoscopic tubectomies were carried out in Sri Lanka Macaques through a three-port approach (Fig 1). This surgery can be completed within 10 to 15 minutes through 3 mm entry points. The main objective of this report is to describe a modern technique for approaching and employing laparoscopic surgery in primates. All the animals recovered uneventfully and were returned to the wild within 5 hours post-surgery. Laparoscopic-guided tubectomy allows faster recovery and fewer complications and it can be expanded to benefit not only monkeys but other large species as well with an understanding of subtle anatomical differences (Fig 2) among species must be recognized in order to be carried out safely. Availability of resources is the limiting factor to initiating and carrying out such procedures in Sri Lankan context.

Figure 1: Shows laparoscopy techniques. **(A)** The animal was placed in Trendelenburg`s position (the patient is supine on the table with its head declined below the feet at an angle of roughly 16°) by placing a rolled towel to allow the bowel to move cranially in the abdomen. **(B)** An incision of 5 mm was made on periumbilical area and the Veress needle was inserted through this incision with care. Then the saline filled syringe was fixed to test the proper insertion of the Veress needle into the abdomen. **(C)** After confirmation of proper insertion of the needle, it was connected to CO_2 gas and insufflation of abdominal cavity was done with the rate of 1 L/min at the pressure gradient of 10 mmHg.

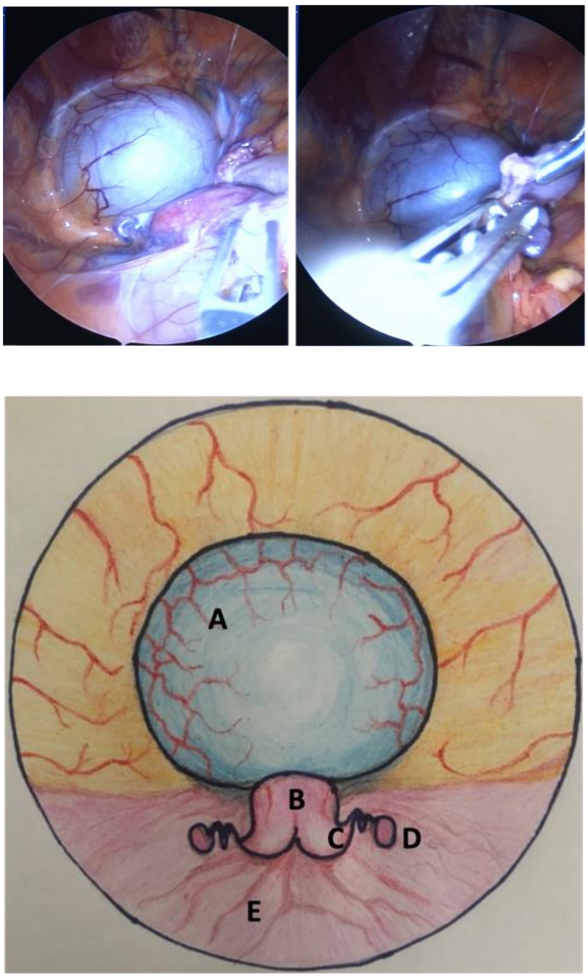

Figure 2: Intra-abdominal view of the pelvis. With the clear visualization, both of the fallopian tubes were identified and traced to their termination at the fimbriae. The isthmus of the tube was elevated with a grasping forceps, and a bipolar vessel sealing device was used to seal the tube. Bipolar vessel sealing device was removed through the trocar point with direct visualization. Scissor devise was inserted through the same port and the cauterized segment of tube was incised. The pedicles were inspected to ensure hemostasis. The procedure was then repeated on the contralateral fallopian tube without complications. (A: bladder, B: uterine body, C: fallopian tube, D: ovary, E: colon).

2. Minimally Invasive Plate Osteosynthesis (MIPO)

Reduction and fixation of a fracture with a bone plate without direct surgical exposure of the fracture site

Bone plating has been used as a method of fracture repair and management since a few decades ago. The principles for fracture management emphasized a rapid return to pain-free function following fracture repair in both human and animal.

Through the continuous research in musculoskeletal system, it was identified and led to several changes of old fashion thinking of philosophy and goals of fracture osteosynthesis moving into minimal invasive fracture healing. All the basic principles of biological osteosynthesis such as minimal iatrogenic soft tissue disruption, indirect fracture reduction, appropriate stable fixation, and early return to function of the limb are based on preserving blood supply by minimising exposure and disruption of the fracture site.

However, minimally invasive osteosynthesis is not a new concept in orthopaedic surgery and that was introduced with the external fixator by the French surgeon, Albin Lambotte, at the beginning of the 20th century. Further development of minimal invasive osteosynthesis happened gradually with different advancements. The main concept of the minimally invasive plate osteosynthesis (MIPO) is minimal access to the fracture site through small skin incisions to do indirect reduction which did not involve direct manipulation of the fracture that eventually facilitate enhancing the healing capacity (Fig 3). Main biological advantages of MIPO are minimal issue compromises and enabled undisturbed fracture healing. Further, fewer infection-related complications are another benefit of MIPO compared to open reduction and internal fixation using cerclage wires and plates. Most importantly, proper case selection is a key step to the success of MIPO (Fig 4). As with any technique, not all fractures are amenable to percutaneous plate stabilization. MIPO is most applicable to comminuted diaphyseal or metaphyseal fractures and simple transverse fractures. According to the previous attempt in veterinary practices, it is well noted that femoral and humeral fractures are typically more challenging to reduce using indirect techniques.

There are some limitations associated with MIPO such as being technically challenging to learn and MIPO may not be suitable for simple fractures and articular fractures which require precise anatomic reduction and compression. MIPO does not allow direct visualization of the fracture site, therefore, access to intra-operative fluoroscopy or radiography greatly facilitates the surgical procedure. Operative time is reduced compared to anatomic reconstruction once familiarity with the procedure is developed. Minimally invasive procedures carry less of a risk of bacterial infection in comparison to open reconstruction procedures due to shorter duration of surgery, less soft tissue trauma, and decreased potential for intra-operative contamination of the fracture site. The fracture hematoma is not removed at surgery and may contribute to increased rate of callus formation. Fractures stabilized with MIPO should heal in a similar manner to fractures stabilized with external skeletal fixation applied in a closed fashion but would require less patient and fixator care in the post-operative convalescence period.

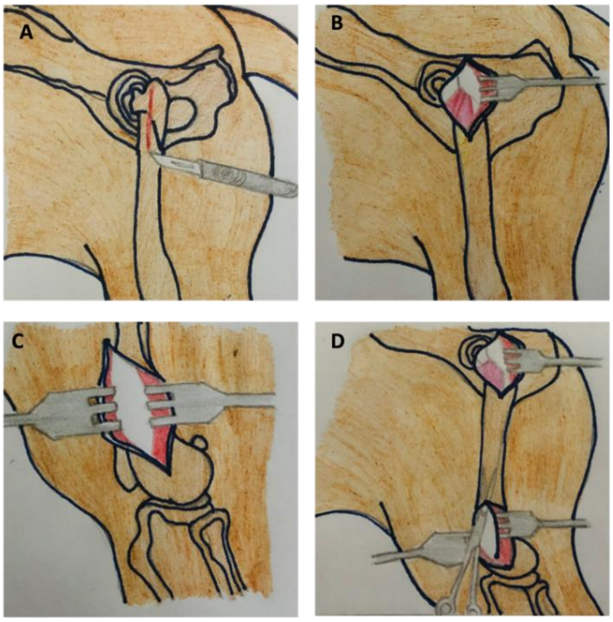

Figure 3: Approaches for minimally invasive osteosynthesis (MIO) to the dog femoral shaft (AO Vet). (**A & B**) A 3 to 5 cm long incision is made distal to the greater trochanter of the femur. Incision is made through the superficial and deep leafs of the fascia lata along the cranial border of the biceps femoris muscle. (**C**) After palpation of the patella and the lateral trochlear ridge, a 2 to 4 cm longitudinal skin incision is made, beginning at the level of the patella and extending proximally. Retraction of the vastus lateralis muscle cranially and the biceps femoris muscle caudally exposes the distal femoral metaphysis. (**D**) An epiperiosteal tunnel is created from distal to proximal by carefully inserting long soft tissue elevator or long, straight Metzembaum scissors under the biceps femoris and vastus lateralis muscles until the tip of the instrument is seen through the proximal incision.

Minimal invasive surgical techniques are successfully applied to veterinary surgeries.

The approach to laparoscopy and minimally invaded plate osteosynthesis described here can be adopted to a wider range of surgical procedures. This will allow for more species to be able to benefit from the advantages of minimal invasive surgical procedures.

Figure 4: Minimally invasive plate osteosynthesis in a radial fracture of a dog, done at VTH. **(A)** Intraoperative photograph showing the proximal skin incision used for open reduction and fixation of the simple metaphyseal fracture and for the percutaneous insertion of the plates. **(B)** Post-operative radiographs of the left radius and ulnar of a 4-year-old, male castrated, cross-bred dog with a closed, complete, distal-diaphyseal fracture and simple oblique fracture. The dog returned to full function 8 weeks after the surgery.

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New Dean of the Faculty of Veterinary Medicine and Animal Science

Prof. Anil Pushpakumara was appointed as the Dean of the Faculty of Veterinary Medicine and Animal Science on1st November 2021 for a period of three years. Prior to this appointment he served as the Head of Department of Farm Animal Production and Health. Prof. Pushpakumara graduated from FVMAS in 1991 and obtained his PhD from Royal Veterinary College, London, UK in 2001 under the Commonwealth Scholarship Plan. He was promoted to the Post of Professor on merit in 2016. He was also the recipient of a Commonwealth Fellowship in 2012 and an international visiting fellowship from University Massey, New Zealand in 2016. He served as the President of the Veterinary Council of Sri Lanka over two years and is a Founder Fellow of the Sri Lanka College of Veterinary Surgeons. At present he serves as an Adjunct Senior Lecturer in Animal Production and Health, School of Veterinary Science, Massey University, New Zealand.

BVSc 2020 Curriculum, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya

The Faculty of Veterinary Medicine and Animal Science has done a comprehensive revision of the BVSc degree program and commenced implementing a new curriculum from the year 2020, referred to as the "2020 Curriculum". It was based on extensive consultations with stakeholders at all levels and a 'gap analysis', conducted under a Twinning Project of the World Organization for Animal Health (WOAH, previously OIE), with assistance from the Massey University, New Zealand. The new curriculum adopts a course unit system, is outcome-based and extends over a five-year period (10 semesters), with integration of many related subjects, exposure to clinical work from the early stages, and a lecture-free final year dedicated to clinical training and an externship programme. Students will be evaluated based on the Grade Point Average (GPA) assessment system. Further information is available at: https://vet.pdn.ac.lk/five-year-curriculum.php

Recipient of the Charles River Prize 2022

Professor Mangala Gunatilake of the Department of Physiology, Faculty of Medicine, University of Colombo is the recipient of the prestigious Charles River Prize 2022. This was awarded to her by the American Association for Laboratory Animal Science (AALAS) at its 73rd National Meeting held from 23rd to 27th October 2022 in the International Convention Centre, Louisville, Kentucky, US. Professor Gunatilake was selected for this award based on her contributions to establishing and developing laboratory animal science discipline in the country. She is the first recipient in South Asia and the second in the Asian region to receive this prestigious award which was sponsored by Charles River Laboratories. She was nominated for this award by Emeritus Professor Vera Baumans, a specialist in laboratory animal science from the Utrecht University of Netherlands.

Posters on AALAS award winners were displayed at the conference venue

Professor Mangala Gunatilake receives the Charles River Prize 2022 plaque from the President of AALAS at the inauguration ceremony of 73rd National Meeting

National Apex Award for Lifetime Achievement

Dr. Keerthi Gunasekara, former President of the Sri Lanka Veterinary Association (SLVA), was awarded the National Apex Award for invaluable service rendered to agriculture and veterinary science for the last three decades in Sri Lanka.

President Ranil Wickramasinghe presenting the National APEX award to Dr. Keerthi Gunasekara.

CPD Programmes and Webinars Conducted During 2020 – 2022

Hybrid CPD Course on Veterinary Haematology

The VCSL organised a Hybrid CPD course on Veterinary Haematology, a practice-oriented one, targeting mainly the Companion animal practitioners in Sri Lanka. In this respect, the Veterinary Pathology Specialists of Sri Lankan origin residing in Australia namely, Dr. Neil Horadagoda BVSc., MVSc., PhD, MANZCVS (Pathology) Dr. Dilini Thilakarathne BVSC., MVetSc., DACVP and Dr. Iresha Wickramasinghe BVSc., MSc., PhD., MANZCVS (Pathology) and our local counterparts, Professor Anuruddhika Dissanayake BVSc., PhD and Dr. Harsha Ariyaratne BVSc., MS., PhD, both from the Department of Veterinary Clinical Sciences, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya got together and designed and conducted a Veterinary Haematology course for companion animal practitioners. Later on, Dr. Bhagya Don BVSc., MANZCVS, the founder of Avenue Animal Clinic Melbourne was also invited to address the treatment and management aspects of health issues related to haematological disorders.

The course was conducted from 12th October to 23rd November 2022 with an evaluation of the knowledge gained by the participants. There were six modules in the course and the 3rd module was a practical session conducted onsite at the Faculty of Veterinary Medicine and Animal Science. The participants had a limited number of online lectures, morning and afternoon on Wednesdays and they were provided with course notes, guidebooks/manuals, useful links, e-books, etc. The course was interactive, in which the participants were encouraged to ask questions and discuss the cases that they encountered and presented to them by the resource persons.

Editor and Publication Committee:

- Prof. R. M. C. Deshapriya (Chairperson)
- Dr. B. M. A. O. Perera (Editor)
- Dr. Suranji Wijekoon
- Dr. Samanthika Jagoda
- Dr. N. K. Jayasekera
- Dr. R.A.C. Rabel
- Dr. M. Pagthinathan
- Dr. Mayuri Thammitiyagoda

NOTICE

The time has come to renew your SLCVS Membership or Fellowship If you are below 60 years of age!

It is a requirement for members and fellows to renew their membership or fellowship every 3 years as per the By-Laws of the SLCVS until they reach 60 years of age. It was decided to implement this clause of the By-Laws commencing from 2023.

Please visit the SLCVS website for the application and details.

Hurry Up! Don't delay your renewal.

Information for new applicants and the Application Form can be downloaded from the College website: www.slvetcollege.org

SLCVS

SRI LANKA COLLEGE OF VETERINARY SURGEONS

Admissions to the College and Promotions to Fellowships

2018 – 2021

Promotions to Fellowships

- Prof. M. D. M. L. D. K. Yatawara
- Prof. C. D. Gamage
- Dr. A. W. Kalupahana
- Prof. D. R. A. Dissanayake
- Dr. P. E. Gunawardena
- Dr. M. D. N. Jayaweera

Fellowships

1. Dr. P. Mylvaganam
2. Dr. T. Chenthuran

Memberships

- Dr. K. M. H. Jinarathna
- Dr. H. S. U. Wijerthne
- Dr. S. R. D. Fernandopulle
- Dr. W. A. S. M. Premarathne
- Dr. K. G. J. S. Disnaka
- Dr. K. Nizanantha

2021-2023

Promotions to Fellowships

- Dr. R. R. M. K. K. Wijesundera
- Dr. R. A. C. Rabel
- Dr. H. M. S. Wijekoon
- Dr. S. S. S. de S. Jagoda
- Dr. K. S. A. Kottawatte
- Dr. H. M. T. K. Karunaratne
- Dr. W.A.S.M. Premaratne

Membership

- Dr. Sathya Nadeeshani