April - June 2020

BULLETIN OF THE

PET PRACTITIONERS ASSOCIATION OF MUMBAI.

(For Circulation amongst PPAM Members)

Contents:

Editorial

Veterinary Education System in India Needs a Fundamental Change

We all of us as Veterinarians have gone through a rigid system of Veterinary Education. Our teachers were our mentors and College library, class rooms, hostels, canteens, play grounds and our college teaching hospitals were learning grounds and skill development laboratories. Many of us came with a rural, middle class background with little or no exposure to technology like a phone, typewriter or fluent English language and communication skills. During the stay in college along with veterinary science subjects we learnt many of our skills which later we used it in our future struggle as veterinarians. During the journey after our veterinary education we also realised that we needed to learn more in order to progress and survive. The skills we developed at the beginning of our careers were not enough to allow us to make a living for more than a few years, before they become obsolete. Education was a progressive discovery of our own ignorance and lessons of what we needed more to survive. At present there is a need that we must follow our own pattern of Veterinary education according to Indian needs and environment.

We must produce veterinary doctors and entrepreneurs to be society leaders who are not merely accountable for building successful practices but are equally responsible for bringing in societal changes through various initiatives because in present situation only the versatile will succeed. In a world where a 'Jack of all trades' is considered to be the master of none, 'Our education system will produce veterinary doctors and specialist, but what about socially responsible, culturally inclined veterinarians. An educational system isn't worth a great deal if it teaches young people how to make a living but doesn't teach them how to make a life.

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One of the key learnings has been the need to promote and implement online veterinary education. We have always believed in the power of the internet to take education to help more students learn online. The Web is changing many important functions of modern society—how we transfer money, communicate, purchase products, and more—but has been slow to transform the critical task of educating the next generation especially veterinary education. In future our veterinary students will be competing with the best in the world in almost every field.

The Government of India in school education has introduced operation Digital Board to strengthen the existing digital infrastructure of Indian schools. Diksha, E-Pathshala, NROER (National Repository of Open Educational Resources), Swayam (Study Webs of Active-Learning for Young Aspiring Minds), and other e-platforms are providing high quality and engaging digital resource materials to teachers and students. The Government of India Initiatives like Sparc (Scheme for Promotion of Academic and Research Collaboration) will facilitate academic and research collaborations between the top-100 Indian institutions as per NIRF (National Institute Ranking Framework).

Today students who enter Veterinary College are much more technologically advanced so It's time for Veterinary education to catch up with our technologically enhanced society. Today's students are smarter, hipper, more skeptical, and less likely to believe propaganda than any other generation in history. The way to convince them into loving education is by appealing to the things about which they are passionate. We must stop teaching only the curriculum and start teaching and nuturing the individual who have unique interests and abilities. We need to stop teaching given the assumption that fifty students in a veterinary class room are all the same because that makes education simple for us while excruciatingly boring to the students. We must lay more emphasis on online resources, platforms, bandwidth and availability of technological solutions, rather than physical spaces. Our students already live in a tech-saturated culture, so they will certainly welcome such change. Students deserve a relevant, modern, customized education that helps them acquire 21st century skills. In this new model, educational material like lectures and other video is consumed by a student alone outside of the classroom, while practical learning-oriented exercises are done in college, where students have access to resources and assistance. We must also keep in mind that in the present system there is a huge gap when it comes to meeting the emotional and mental wellness needs of young people entering veterinary college. We need to teach our Veterinary students in the first year itself the purpose of veterinary education in India and its relevance to our society. Education is not always about becoming a big and rich person. It should be about humanism. Students must also be taught in-depth about the morals of life and inculcated with humanistic values. They should be taught that life is much beyond money and success is not measured in money.

Curriculum also needs change. Educational programs are controlled and made by bureaucrats, who have limited knowledge and understanding of the real issues faced by veterinarians in real life. Only real educators must be appointed as specialists and policymakers. This will attract talent and empower the system to face the challenges. Funding of Veterinary institution is an issue we needs to be addressed, as underfunding results in poor infrastructure. We need to create new and innovative systems that help individuals achieve their potential. The traditional role of education in teaching about culture and the transmission of our society's values must be encouraged. We cannot assume that the six hours a day a student spends in veterinary college is sufficient to teach them to appreciate the riches of our society. Veterinary education must compete for students' attention and not for their time. The way to do that is to expose students into field practice regularly. We have to convince students that learning is fun.

The teachers who desire to inspire the veterinary students to action must believe that our ideas, our shared knowledge, our skills, our values, and our approach to problems and situation will help them to move forward. The purpose of education is to replace an empty mind with an open mind. Teachers should function as facilitators of student progress instead of instructors. We need to understand that capacity to learn is a gift, the ability to learn is a skill, the willingness to learn is a choice. Shortage of qualified teachers with excellent teaching skill and the entry into institution and retaining them in a teaching institution is a big problem in India. We need better training of educators. Teachers play the most important role in veterinary collages and hence, they should be given the best of class training. After all, they are shaping the future of the veterinary profession and the nation.

The old assumptions that education is about teaching, not learning must change. We must eradicate rote learning and introduce conceptual learning, solving case studies so that veterinary education becomes more interesting and also avoid students to mug up what they are being taught.

If we do not give a serious thought and act to change the veterinary education system in India then it's likely that we would meet our fate as rightly said “The countries who out-educate us today will out-compete us tomorrow”- Barack Obama.

Donation of food to strays by PPAM during Covid-19 lockdown

Sr.No	Organization for which donation was given	Donation
1	Mumbai Animal Association, F-603, Country Park, Datta pada Road, Borivali East, Mumbai, 400066	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 1 bag 3. Meo Sterile pouch 80gms x 48 pouches.
2	IDA, Deonar, Mumbai	1. Apro dog-20kgx 14bags 2. Apro cat 20kg x 2 bag Meo Sterile pouch 80gms x 48 pouches x 2.
3	TSPCA, Thane	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 1 bag Meo Sterile pouch 80gms x 48 pouches.x 1
4	Feline foundation	1. Apro cat 20kg x 3 bag 2. Meo Sterile pouch 80gms x 48 pouches x 3
5	WFA	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 1 bag Meo Sterile pouch 80gms x 48 pouchesx 1
6	AHIMSA, Malad West, Mumbai.	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 1 bag Meo Sterile pouch 80gms x 48 pouches x 1
7	WSD	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 1 bag 3. Meo Sterile pouch 80gms x 48 pouches.
8	BSPCA,S.S.Rao road, Parel, Mumbai 400012	1. Apro dog-20kgx 6 bags 2. Apro cat 20kg x 2 bag Meo Sterile pouch 80gms x 48 pouchesx 2

BSPCA donation, Dr. Anil Datir, Dr. Kamlakar Chaudhari, Dr. Makarand Chavan, Mr. Kadam and Dr. R.V. Gaikwad

Dr. Anil Vade with MAA team

Dr. S. M. Gadge with Ahimsa team Malad during lock down

PPAM donation to WSD

Donations to Chief Ministers Fund and other NGO by PPAM during Covid-19 and Message from Dr. Dhananjay Bapat, President PPAM

Sr. No	PPAM donation	Amount
1.	Chief Ministers Fund	Rs. 51,000/-
2.	In Defence of Animals (IDA)	Rs. 20,000/-

Message from Dr. Dhananjay Bapat, President PPAM:

Thanks to Rossari for availability of very good quality sanitizer for PPAM members at reasonable rate. Sincere efforts of quick supply at doorsteps of PPAM members by Sarvam Distributors are appreciated. Thanks to Castor & Pullox for supply and delivery of pet food donated by PPAM at various NGOs across Mumbai.

Current Concepts in Veterinary Ophthalmology Examination of the eye. PART-1

Dennis Brooks DVM, PhD,
Diplomate, American College of Veterinary Ophthalmologists,
Professor Emeritus, University of Florida

Dennis Brooks DVM

EXAMINATION OF THE EYE

Vision evaluation

The animal should be observed walking into the examination room with the client, or in its own environment. A blind animal may exhibit pricked ears or a tentative gate as he walks into the exam room. He may collide into objects, have a stare-like expression, or reluctant to move in a strange environment. The owner's impression that the animal "sees" well at home must be interpreted cautiously. Animals can "memorize" their own environment and often can adjust very well to the loss of sight. Once the animal is in the exam room, the animal is permitted a few minutes to adjust to the room and observed as the history is obtained.

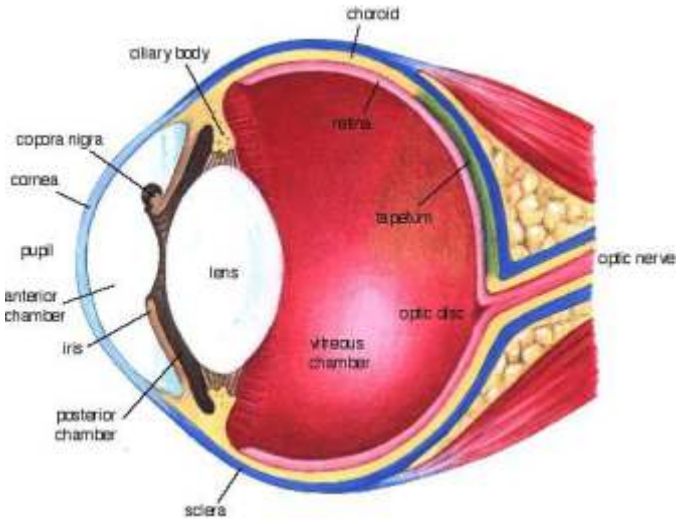
The patient's vision can be further evaluated by noting the response to hand movements or cotton balls tossed into the visual field (MENACE RESPONSE), or squinting in response to stimulation of the eye with bright lights (DAZZLE REFLEX). The menace response and the visual placement reaction can also be performed to evaluate the vision. In certain circumstances, each eye should be evaluated separately by covering one eye with your hand.

Examination for evaluation of vision should be performed in normal light and then in dim light. If you can see the cotton balls or the obstacles of the maze test, the dog or the cat should be able to see them better than you since their night vision is more developed than ours. Cats generally do not menace well, but respond well to bright light stimulation (such a laser pointer) and cotton ball testing.

Ocular examination

The ophthalmic examination is conducted in a quiet, slightly darkened room. The patient is placed on the examination table and restrained by the owner or an assistant. Minimal but firm restraint under most circumstances is sufficient to permit a thorough ocular examination. Tranquilization and rarely general anesthesia may be necessary for certain diagnostic procedures. Also, these drugs may produce artifacts such as the lowering of intraocular pressure which may lead to erroneous conclusions.

Following an evaluation of vision the need for special diagnostic tests is determined. An orderly sequence of diagnostic tests must be followed based on the special requirements of each test. Evaluation of the tear film (Schirmer tear test) must be done before the eye is manipulated or any drugs are instilled. Cultures of the external ocular structures must be done before extensive cleaning is done and before drugs are instilled. The use of mydriatics is necessary for examination of the lens and posterior segment, but should not be given prior to measuring the intraocular pressure (IOP). The intraocular pressure evaluation requires topical anesthetic and must be recorded before excessive manipulation or before the patient becomes restless and excited.



Periocular Exam: Orbit and Adnexa

Examination of anatomic structures should begin with the orbit and other periocular tissues.

1. Orbit: Evaluated for symmetry, eye-orbit relationship, deformities or enlargements. Because of marked variations in eye position of different breeds, one should be acquainted with the various breed characteristics.

2. Globe Position: The presence or absence of strabismus and nystagmus is noted. Esotropia (crossed-eyes) is inherited in Siamese cats but in dogs may represent severe intraocular or neurological disease. Nystagmus occurs frequently in Siamese, apparently not always associated with clinically detectable vision defects, but in dogs may result from congenital intraocular diseases, or acquired vestibular or cerebellar diseases.

3. Eyelid Position: may be helpful in determining relative globe size. Looking from over the top of the animal's head helps to estimate globe position. Additional evaluation of the orbit consists of

examination of the mouth (floor of the orbit), palpation of orbital rim, retropulsion of the globe, and evaluation of nasal patency, if necessary.

4. Extraocular Muscles: the function of the extraocular muscles is tested by the "tonic eye reflexes." As the head is moved right and left, up and down, an optokinetic nystagmus occurs. The animal's ability to follow a moving object (light, hand, etc.) without moving the head can also help in evaluating the function of the extraocular muscles. The integrity of the 3rd, 4th and 6th cranial nerves and their respective muscles is determined through this technique.

Adnexa: Eyelids

The eyelids are examined for abnormalities of position, function and structure such as lagophthalmos, ptosis, trichiasis, ectropion, entropion, blepharitis, lid neoplasms, etc. The lids are evaluated without topical or general anesthesia, sedatives and tranquilizers. How the head is restrained may also alter your evaluation of eyelid position and function. Adequate illumination and some magnification may be necessary. The otoscope with speculum removed, penlight and various hand held or head mounted magnifiers, and including the slit lamp biomicroscopy may be used.

The blink reflex should be evaluated. The efferent limb of this reflex requires the integrity of the facial nerve (CN VII) and the orbicularis oculi muscle. The afferent limb may be a menace (CN II), corneal sensation (CN V) or touch sensation to the periorbital skin (CN V). Rapidity and completeness of the blink should be evaluated.

The lower and upper eyelids should touch the globe. Lower lid-globe contact is important to prevent accumulation of tears and debris. The lower "lacrimal lake" may be grossly distorted by anesthetics and tranquilizers. Cilia or eyelashes occur mainly on the dog's upper lid in three irregular rows. The lower eyelids of dogs and both eyelids of cats are usually void of cilia. The eyelid contours are regular and gently curved, partially exposing the openings of the tarsal or Meibomian glands (gray line). The duct orifices are frequently raised and nonpigmented. Aberrant cilia (distichia) may emerge from the spaces among the Meibomian gland ducts, or the actual duct orifices. Ectopic cilia emerge from the within the palpebral conjunctiva and are frequently the same color as the dog's hair coat. They can escape detection without careful examination.

Veterinary Council of India Election

Our Candidates. Dr. Anil Mangaldas Vade and Dr. Amar Deep Singh

Vision Statement of our candidates for VCI election.

Veterinary Council of India Election. Date of poll (online voting), 20.08.2020 (Thursday) to 22.08.2020 (Saturday) (7.00 AM to 6.00 PM each day)

FSAPAI and PPAM Candidates.

Name - Dr. Anil Mangaldas Vade

Email- dranilvade@gmail.com ,Contact- 9820016420

Dr. Anil Mangaldas Vade

Completed bachelor of veterinary Science and animal husbandry (B.V.Sc &A.H) in year 1998.

Completed master's degree Gynaecology & obstetric including Andrology & A.I in year 2000.

Started own private dispensary in December 2000 by name of " Vedant pet

Dispensary " in Borivali (w), Mumbai. Large animal and small animal practitioner from last 20 years running well equipped Dispensary.

1. Proprietor of Vedant pet Dispensary.
2. Life member of PPAM.
3. Presently Honorary Treasurer to PPAM.
4. Elected member to FSAPAI.
5. Member of FASAVA.
6. Member of WASAVA.

Dr. Amar Deep Singh

Mobile- 9759245885
balisvet@hotmail.com

BVSc&AH – joined in1986 batch GB Pant University Pant Nagar Nainital

MVSc Surgery – joined-1992 batch GB Pant University Pant Nagar Nainital

A second-generation veterinarian Started own private clinic in 1994 by name Bali's Pets Hospital in Dehradun as first established private practitioner, leaving the charm of Commission in RVC.

Founder member of FSAPAI

life member of SACA CHANDIGARH

Life member of SAVA DELHI

Life member of SAVA GOA

Annual member of PPAM

A small animal practitioner for last 26 years, running a well-equipped small animal hospital in Dehradun.

Agenda point :-

1. Implementation of Indian veterinary council Act 1984.
2. Strengthening state veterinary council.
3. Raising the standard of veterinary education and Ensuring training for updating of knowledge and skills to all the veterinary professionals.
7. Consulting vet to NGO name MAA (Mumbai Animal Association).

Achievement: -

1. Award of Bombay Gowrakshak Mandali, scholarship 1998.
2. From 2004 to 2006 regularly and voluntary visiting" Sanjay Gandhi National Park" Borivali for extending veterinary services for the treatment of wild animals.
3. " Gurudev Rabindranath Tagore samman" 2011, New Delhi.

Dr. Amar Deep Singh

4. Introduction of new medicines and vaccines with supply and quality to field veterinarian/ practitioners from all India.
5. Will work hard to filling up all existing vacancies in all Vet Universities and Animal husbandry Departments of respective state Governments.
6. Encouraging scientific research and development for better disease diagnosis and treatment in veterinary field with professional ethics and values.
7. Framing regulations on Animal products, feed formulation, veterinary medicine/pet shops, medicine formulations, Vaccines supply, farm management, Dog Breeders, Dog food companies/ importers and will updates as per IVC Act 1984.
8. Will ensure that all unwanted quacks (unprofessional) and illegal (not- registered with any state veterinary council) people who practice illegally will be punished under IVC Act 1984.
9. Ensuring better organisational structure and institutional facilities for teaching research and extension in all the veterinary college/university/ Research centres/Training institutions/Animal husbandry Departments in all states in India.

M–mode Echocardiographic Left Atrial Function Assessment

Dr. R. D. Velhankar, Retired Professor, Department of Veterinary Clinical Medicine, Ethics & Jurisprudence, Mumbai Veterinary College, Parel, Mumbai - 400 012.

Dr. R. D. Velhankar

According Hoit (2014), main role of the left atrium is to modulate left ventricular (LV) filling and cardiovascular performance by functioning as a conduit or reservoir of pulmonary venous return during early ventricular diastole and as a booster pump that augments ventricular filling during late ventricular diastole. Left atrium (LA) is not merely a simple passive transport chamber but highly dynamic and responds to stretch and therefore its enlargement has been shown to be a reliable predictor of adverse cardiac outcome (Blume *et al*. , 2011).

Diastolic function of the heart is a complex sequence of numerous interrelated events and in order to understand role of left atrium, it is necessary to understand how ventricular filling is accomplished. Garcia and Parras (2007), proposed that during ventricular relaxation, its apex behaves like potent suction force during early diastole contributing to the process of active filling of blood in the left ventricle (LV). Authors further added that ventricular relaxation is an active mechanism with energy consumption and during its normal relaxation ventricle generate a negative pressure (vacuum) that is responsible for suction mechanism. The contracted ventricles during systole acquire potential energy like a tightly coiled spring and during diastole, this stored potential energy is converted to kinetic energy and diastole results. Whereas according to Kibar *et al*. (2013), with systolic contraction, there is long-axis shortening of the LV manifest by mitral annular descent toward a relatively fixed apex.

Diastolic function of the heart is a complex sequence of numerous interrelated events and it is divided into 4 distinct phases viz.

1) isovolumic relaxation period / time (IVRT) (from aortic valve closure to mitral valve opening)
2. Rapid filling phase (early diastole)
3. The slow filling phase (diastasis) and
4. atrial contraction / atrial systole (Poi and Hutchison, 2000).

At the end of ventricular systole, the intra-ventricular pressure is maximum. With ventricular apex recoiling back, apical movement create a negative pressure/ suction in the ventricles and pressure in the intra-ventricular cavities starts dropping. A point is reached at which the pressure within the ventricular cavities drops below than that in atrium resulting in opening of mitral valves and the blood rushes into ventricles accomplishing early diastolic filling. After this initial burst, blood continues to trickle into ventricles and this phase of ventricular filling called as diastasis (passive ventricular filling). Both these phases of diastolic filling (early and passive) bring about 60 to 80% filling of ventricles and residual ventricular filling is accomplished by atrial kick or atrial systole. Factors like diastolic suction force, passive filling from left atrium to left ventricle, the effect of pericardial restraint, the interaction between right and left ventricles, viscoelastic properties of LV and the LA , pulmonary veins and mitral valves influence complete ventricular filling . (Poi and Hutchison, 2000).

Considering the complex vital role of atria in accomplishing ventricular filling and likely hood of its being getting affected in cardiovascular diseases, its structural and functional assessment is necessary as a part of cardiac examination. 2D echocardiographic study gives a fair idea regarding size, shape and real time movement of atria while M –Mode exam yields Left atrium to aortic diameter at level of aortic bulb (LA / Ao D ratio) – wherein LA / AoD ratio > 1.5 is suggestive of left atrial enlargement. However, this ratio is unable to predict or comment on actual left atrial functional status particularly from prognostic or diagnostic aspect.

Materials and Methods :

A standard right plane short axis view at the aortic valve level was obtained in dogs by M-Mode echocardiography technique – as described by Mattoon and Nyland (2002) and as per method described by Prastaro et al. (2011) following three measurements (Plate I) are recorded:

1) LA Maximum (LA Max) cm
2) LA Average (LA a) cm
3) LA Minimum (LAMin)

LA maximum refers to the widest Left Atrial internal diameter measured (left atrium totally distended with blood) . LA average (LAa) refers to the Left Atrial pre-contraction diameter (post early diastolic passive ventricular filling + diastasis) and LA minimum (LAMin) refers to the minimum Left Atrial internal diameter after left atrial contraction (late diastolic ventricular filling due to atrial systole) .

LA M-Mode Total Emptying Fraction (LA FTE M-Mode, %) provides a sum of the active and passive components of LA function and is calculated using the following formula: {(LAMax – LAMin) / LAMax} x 100 = %.

LA M-Mode Active Emptying Fraction (LA FAE M-Mode %) describes the active component of Left Atrial function, which is obtained using the formula {(LA a – LA min) / LA a} x100= %.

Discussion :

Left atrium (LA) is far from being a simple passive transport chamber. It is highly dynamic and responds to stretch and therefore enlargement of left atrium has been shown to be a reliable predictor of adverse cardiac outcome (Blume et al. 2011). Therefore, combined evaluation of left atrial size and left atrial function is necessary to augment prognostication and implications of such assessment for prediction and diseases prevention.

While studying total and effective ejection fractions of left atrium in healthy Doberman pinscher breed, Ubale (2015) reported mean±SE values of LA max, LA a and LA min in males as 1.56 ±0.02 cm, 1.15 ± 0.04 cm and 0.82 ±0.03 cm respectively while in females these values were 1.51 ±0.09 cm, 1.12 ± 0.09 and 1.66±0.15 cm respectively. The mean±SE values for LA M - mode total emptying fraction (Total LA EF)% and LA M - mode active emptying fraction (LA active EF%)% in the male and female Dobermans measured 45.50 ±3.93 % , 28.78 ±2.49 % and 49.71±1.81 % , 30.45 ±1.19 % respectively (Table 1). There was no significant difference in these parameters between males and females ($p \geq 0.05$).

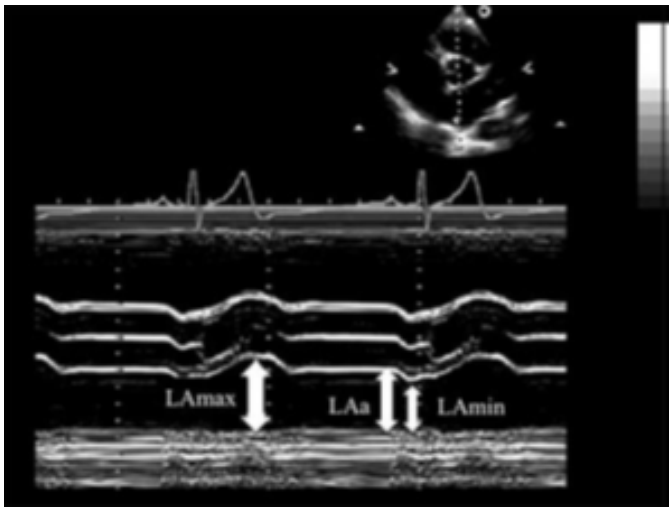


Plate I (Prastaro *et al.* , 2013)

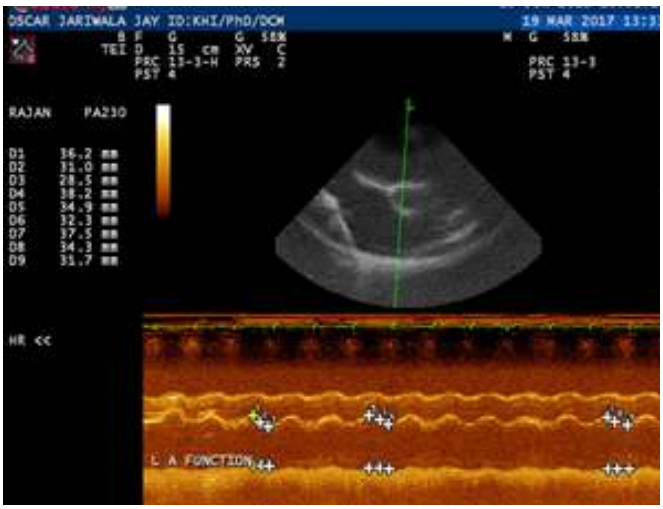


Plate II (Ingole, K.H., 2019)
(Where D1, D4, D7- LA max,;
D2, D5,D8- LAa and D3, D6, D9- LA min)

Table 1

Research Worker	Breed Sex (n)	LA max(cm) mean±SE (Range)	LA a (cm) mean±SE (Range)	LAmin(cm) mean±SE (Range)	LAE FT % mean±SE (Range)	LA FAE % mean±SE (Range)
Ubale (2015)	Doberman Male (10)	1.56 ±0.02 (1.03-2.58)	1.15 ± 0.04 (0.78-2.08)	0.82 ±0.03 (0.49-1.40)	45.50 ±3.93 (28.45- 59.50)	28.78 ±2.49 (17.00-40.59)
	Doberman Female(10)	1.51 ±0.09 (1.12-2.09)	1.12 ± 0.09 (0.84-1.68)	0.77 ±0.06 (0.63-1.18)	49.71±1.81 (42.25-54.23)	30.45 ±1.19 (25.00-38.46)
Ingole (2019)	Labrador (6) (3M / 3F)	2.39±0.20 (1.87-2.99)	2.10±0.16 (1.70-2.63)	1.66±0.15 (1.24-2.15)	32.98±1.58 (25.67- 36.00)	23.24±2.32 (16.00-27.00)

Analogous data in the same breed was not available in the literature referred.

Ingole (2019) reported mean±SE values of LA max, LA a and LA min in a group of healthy Labrador dogs as 2.39±0.20 cm, 2.10±0.16 cm and 1.66±0.15 cm respectively while mean±SE values for LA M - mode total emptying fraction (Total LA EF)% and LA M - mode active emptying fraction (LA active EF%)% measured 32.98±1.58 % and 23.24±2.32 % respectively (Table 1). Identical data on the subject in the same breed was not traceable in the referred literatre.

The observations reported by Ingole (2019) are lower as compared to those recorded by Ubale (2015). The probable reasons for variation in observations between these two studies could be due to difference in breed and sample size. In order to eliminate intra-observer or inter-observer errors – that is likely to occur as per Mattoon and Nyland (2002)- due care was taken in both the studies to record three simultaneous observation and its mean recorded.

Conlusions :

Left atrial function assessment is necessary as it plays a key role in ventricular diastolic filling. Any derangement in its function would adversely affect the hemodynaemics of the body. No much relevant data about these parameters in Veterinary field was available for comparison. Different breeds of dogs have lot of variation in respect of their body weight and body size and body surface area. Hence there is a need of generation of breed specific values or data in respect of these parameters for the ready reference of field veterinarians and research workers to facilitate prognostication and implications of such assessment for prediction and initiating suitable therapeutic plan..

References :

1) Blume GG, CJ Mcleod , ME Barnes , JB Seward , PA Pellikka , PM Bastiansen, TS Tsang (2011) Left atrial function: physiology, assessment, and clinical implications. Eur J chocardiogr. 2011 Jun;12(6):421-30

2) Garcia, E. and J. Parras (2007) Echocardiography in Heart Failure Fedracion. Argentina de Cardiologia, 5th International Congress on cardiology on internet, 5th Virtual Congress on Cardiolgy – QVCC.

3) Hoit Brian (2014) Left Atrial Size and Function, Journal of the American College of Cardiology Vol. 63, No. 6.

4) Ingole, K.H. (2019) "M-Mode and Tissue Doppler Studies On Left Ventricular Systolic and Diastolic Functions In Dogs With Dilated Cardiomyopathy" Ph.D. Thesis Submitted to Maharashtra Animal and Fishery Sciences University, Nagpur.

5) Kibar M. M. Mato, K. Ursula, J. Thalhammer (2009) Determination of Diastolic Dysfunction By Conventional And Doppler Tissue Echocardiography In Dogs, Turk. J. Vet. Anim. Sci. 33(6): 501-507

6) Mattoon T.G. and J. S. Nyland, (2002, copy right 2015) Small Animal Diagnostic Ultrasound, 3rd Edition, Saunders, Philadelphia, Chapter -8 pp 217-331. www.elsevier.com/permissions.

7) Poi Howad Leong and Hutchison (2000) Diastolic dysfunction, Cardiology rounds, Volume V, Issue I.

8) Prastaro M., S. Paolillo, G. Savarese, S. Dellegrottaglie, O.Scala, D. Ruggiero, P. Garguilo, C. Marciano, A. Parente, M. Cecere, F. Musella, D. Chianese, F. Scopacasa and P. Perrone-Filardi (2011) N-terminal pro-b-r-type netriuretic peptide and left atrial function in patients with CHF and Severely reduced Ejection Fraction. Euro. J. of Echocardiography, 12: 506-51

9) Ubale A. S. (2015) Studies On M-Mode Echocardiographic Parameters In Healthy Doberman Pinschers. M.V.Sc. Thesis submitted to the Maharashtra Animal and Fishery Sciences University, Nagpur.

Webinars and Public Education by PPAM Members and Message from Dr. Sunita Patel, Head, Technical Committee PPAM

Messages from Dr Sunita Patel, Head Technical Committee, PPAM.

I would sincerely like to thank Dr. Jamshed and the entire Captain Zac team for their unconditional support and sincere help for the successful PPAM webinars. The trials that were held with their support made the events successful- Dr Sunita Patel, Head Technical Committee, PPAM.

Webinars conducted by PPAM members:

PPAM members if you have missed the above webinars, they are still available for viewing on following links.

Sr.Number	Name of the Webinar	Link available
1.	Common Eye problem of the Dog and Cat- You see what you know. Dennis Brooks DVM, PhD, Diplomate, American College of Veterinary Ophthalmologists, Professor Emeritus, University of Florida.(Captain Zack and PPAM event)	On the Captain Zack Facebook page in the videos section
2.	Two heads are better than One. Dr. Sangeeta Vengsarkar Shah (Cardiologist and Dr.S.V.Vishwasrao(Surgeon) brainstorm over some common clinical conditions in Pets.(Captain Zack and PPAM event)	On the Captain Zack Facebook page in the videos section
3.	Current Scenario and Overcoming the challenges in Small Animal Practices. Dr.S.V.Vishwasrao	https://youtu.be/2zNaEHsTzn4

PTO...

Appeal to PPAM Members to Renew Membership

1.	Renewal of Annual Membership	Rs. 1500.00 + GST (Rs. 270.00) = Total Rs. 1770.00
2.	New Membership	Rs. 1750.00 + GST (Rs. 315.00) = Rs. 2065.00
3.	Life Membership	Rs. 17500.00 (No GST)

Bank Details :

Indian Bank; A/c name - Pet practioners association

Branch- Santacruz (w)

A/c no. 744946564

IFSC: IDIB000S010

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