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Ultrasonography: A promising imaging modality in veterinary research and clinical practice

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Ultrasonography has added a new horizon in veterinary research and clinical practice. A lot of advancements like Duplex and Color Doppler ultrasound, multihertz high-resolution transducer, 3-Dimensional ultrasound, sonoendoscopic probes, and ultrasound guided biopsy options have made the examination more versatile. Contrast sonography with micro bubble agent and Tissue Harmonic Imaging (THI) are found very efficacious to study organ functioning and hemodynamic parameters. Abdominal scanning includes detection of foreign body, obstruction, mucosal pattern, peristalsis, gastric and intestinal emptying time, hepatic size, abscess, cyst, tumour, cirrhosis, calculi, obstruction, infection of gall bladder and bile duct and porto-systemic shunts. Renal hemodynamics, renal and urinary bladder volume and urine formation can be measured with morphometric parameters. Calculi in kidney and urinary bladder, hydronephrosis, bladder tumour are well detected by sonography. Splenic size, abscess, tumour, infarction and pancreatic infection and tumour are amenable to sonographic detection. Ultrasonography has been used to study ovarian follicular dynamics, pregnancy detection, fetal well being and for fetal sexing, ovum pick-up (OPU) and in the diagnosis of reproductive diseases. Hemodynamic parameters, cardiac volume/output, morphometric measurements of different chambers of heart and blood vessels can easily be measured with echocardiography. Stress echocardiography is gaining ground as an evaluating tool for performance in racing horses. Evaluation of tendons and ligaments of limbs is extensively used in racehorses to certify their fitness. It has been proved to be a superior imaging modality to detect adhesions, tearing and inflammation of these structures. It can also be used for safe and precise collection of biopsies and retrieval of fluid from internal organs. Besides, ultrasonography is being used for evaluation of endocrine glands, salivary glands, eyes, tissue healing, teat and udder and carcass quality.

Biography

Mozammel Hoque obtained his BVSc & AH degree from Kolkata in 1983 with Vice Chancellor's Gold Medal for securing 1st position. He did MVSc and PhD in Surgery from IVRI, Izatnagar in 1987 and 1996 respectively. He joined ARS in 1989 and presently working as Principal Scientist in Surgery Division, IVRI, Izatnagar. He obtained FAO Fellowship and worked as Visiting Faculty at Colorado State University, USA during 1998. He has written 3 books, 15 book chapters and published more than 160 research papers in national and international journals.

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