بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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Ocular Ultrasonography in Normal and Diseased Donkeys

Thesis Presented by

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(BVSc, Cairo University, 2016)

For the Degree of Master's in Veterinary Sciences
(Surgery, Anesthesiology and Radiology)

Under supervision of

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APPROVAL SHEET

This is to approve that the dissertation presented By **Mona Nabil Wafy** to Cairo University entitled **"Ocular ultrasonography in normal and diseased donkeys "** for Master's Degree in Veterinary Medical Sciences (MVSc.) **(Surgery, Anesthesiology and Radiology)** has been approved on 29/6/2021 by the examining committee.

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M.V.Sc Thesis

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ABSTRACT

Despite the extensive research on ocular ultrasonography, there is paucity of information regarding ocular biometry and color Doppler imaging of the donkey's eye. In this study there were two groups of donkeys. The first group (40 animals) was used to establish B-scan ocular biometry and color Doppler ultrasonographic reference values in normal donkeys and to describe effect of laterality, maturity and gender on ocular biometry and vasculature. The second group of donkeys with ocular diseases (45 animals) was used for observing ocular changes by using ultrasonography, detecting changes in blood flow indices in different diseases, and verifying the result by histopathology. Forty (80 eyes) clinically normal immature and mature donkeys of both sexes were included. Transpalpebral ocular ultrasonography was made using a 12-MHz linear transducer. Biometric ocular measurements for the first group were made including the anterior chamber depth, central lens thickness, vitreous chamber depth, axial globe length, longitudinal globe length, lens pole diameter and posterior wall thickness. Color Doppler velocimetric measurements including peak systolic velocity and end-diastolic velocity were made. Blood flow indices represented by resistive and pulsatility indices were calculated. Ultrasonographic pictures for animals with ocular lesions were taken, color Doppler velocimetric measurements were calculated, and whenever possible the eye enucleated for histopathological examination. Results revealed that in the first group, laterality and gender did not represent variability factors in ocular biometry ($P > .05$), while the animal's maturity had an influence on axial globe length ($P < .001$), longitudinal globe length ($P = .000$) and lens pole diameter ($P = .0\ 0\ 0$). Laterality had no effect on velocimetric parameters and indices ($P > .05$) while gender had a significant effect on resistive index ($P = .024$), pulstality index ($P = .0\ 0\ 0$) and volume flow per area ($P = .008$). The state of maturity had significant effects on peak systolic velocity ($P = .027$) and blood volume flow per distance ($P = .012$), and area ($P = .048$). The recorded ocular diseases in this study were hypopyon (N=2 eyes), iridocyclitis (N=6 eyes), incipient cataract (N=13 eyes), immature cataract (N=16 eyes), mature cataract (N=26 eyes), hyper mature intumescent cataract (N= on eye), hyper mature resorbed cataract (N= one eye), lens luxation (N=2 eyes), vitreal opacities (N=2 eyes), complete retinal detachment (N=one eye), incomplete retinal detachment (N=one eye), endophthalmitis (N=one eye), and phthisis bulbi (N=one eye). All clinical, ocular ultrasonography and color Doppler scanning findings of these ocular abnormalities were recorded. The central lens thickness was significantly changed in immature, mature and hypermature intumescent cataracts, vitreous opacities, lens luxation and hypopyon ($P< .05$). The vitreous chamber depth was significantly changed in immature and mature cataracts ($P< .05$). The axial globe length was significantly changed in immature and mature cataracts and vitreous opacities ($P< .05$). There were statistically significant differences in peak systolic velocity of immature, hypermature intumescent and resorbed cataracts, retinal detachments, and lens luxation ($P< .05$). Postmortem and histopathology findings confirmed the ultrasonography findings.

Keywords: Cataract, Donkey, Eye, Lens luxation, Retinal detachment.

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Acknowledgement

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Dedication

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