5) Fluorescein angiographic changes in generalized narrowing or caliber irregularity of retinal arteriole in M-SHRSP. Yoh Hamada, Takaaki Chikugo*, Yoshio Ohta* and Kozo Okamoto*. Department of Ophthalmology, Tondabayashi Hospital, Department of Pathology*, Kinki University School of Medicine, Osaka-fu 589.

Introduction: M-strain of stroke-prone spontaneously hypertensive rats (M-SHRSP) show marked hypertensive changes in the fundus such as generalized narrowing or caliber irregularity of retinal arterioles, arteriolar tortuosity, retinal edema and choroidal changes from an early age. These hypertensive fundus changes were graded from 0 to +3 according to their severity. Using these figures, we graded generalized narrowing or caliber irregularity of retinal arterioles, examining the relationship between these hypertensive changes and the leakage of fluorescein dye.

Materials and Methods: 123 M-SHRSP rats, from 8 weeks to 15 weeks of age, a total of 703 retinal arterioles of 153 eyes were investigated in this study. Color fundus photographs were taken without anesthesia and each retinal arteriolar stenosis or caliber irregularity were graded. Fluorescein fundus angiographic photographs were also taken without anesthesia using intra-venous injections of 0.1 cc of 10% fluorescein sodium solution. Comparing the changes in the generalized narrowing of the retinal arteriole or the caliber irregularity of level with those of fluorescein angiographic photographs, we calculated the incidence of fluorescein dye leakage from the arterioles in M-SHRSP.

Results and Discussion: Table 1 shows the incidence of fluorescein dye leakage of the retinal arterioles which indicated generalized narrowing or caliber irregularity at each level. Comparing the changes in generalized narrowing of retinal arterioles with their caliber irregularity, almost fifty percent of the arterioles which had rankings of caliber irregularity more than +2, showed the fluorescein dye leakage from the retinal arterioles. However, when the generalized narrowing of retinal was +2 and the caliber irregularity was +1, only 2.5% showed fluorescein leakage from the vessel's wall. In conclusion, we found that when the arteriolar changes in caliber irregularity were more than +2, fluorescein leakage increased and there were also greater hypertensive changes in M-SHRSP.

Table 1

Fluorescein Leakage of Retinal Arteriole in M-SHRSP

		Generalized Narrowing of Retinal Arteriole							
		0		+1		+2		+3	
Caliber Irregularity of Retinal Arteriole	0	$\frac{0}{9}$	0%	$\frac{0}{5}$	0%				
	+1	$\frac{1}{6}$	17%	$\frac{6}{92}$	6.5%	$\frac{2}{80}$	2.5%	$\frac{0}{19}$	0%
	+2			$\frac{13}{27}$	48%	$\frac{118}{247}$	47.8%	$\frac{50}{84}$	59.5%
	+3					$\frac{19}{19}$	100%	$\frac{76}{115}$	66%