57) The Distributions and Characteristics of Periarthritis Nodosa in Spontaneously Hypertensive Rats. Noboru Saito*, Teruhiko Okada**, Shoji Nishiyama***, Masatoshi Shiota**** and Kenichi Yagyu****. *Department of Geriatrics, **Department of Anatomy, ***Department of Hygiene, ****Medical Research Center, Kochi Medical University, Kochi 783

Periarthritis nodosa (PN) of mesenteric artery occurs as severe hypertensive vascular lesion in spontaneously hypertensive rats (SHR). The aim of this study is to observe the distributions and characteristics of PN in SHR.

Methods As male rats 5 stroke-prone SHR (SHRSP) aged 15.5 months and one stroke-resistant SHR (SHRSR) aged 22.5 months, and as female rats aged 19 months, 10 SHRSP, 3 SHRSR and 6 Wistar Kyoto rats (WKY) were used in this study. After anesthesia with 10% urethan in one ml per 100 g of body weight, mesenteric artery, kidney, testis, heart and brain were removed for preparing microscopic specimens with Hematoxylin-Eosin staining. Furthermore, for measuring arterial wall and lumen areas, the special computer system for graphic analysis involving microscopy was also used.

Wall area = total area - lumen area.

Then, lumen area/wall area was calculated.

Results Concerning 6 male rats PN of mesenteric artery, small testis artery and small renal artery was found (Table). Coronary artery showed only slight wall changes, and cerebral artery did not show any change. Obsolescent glomerulus (OG) was found in the inner cortex of 5 male rats, cerebral softening or bleeding in 3 male rats and myocardial fibrotic change in 2 male rats (Table). Concerning female rats 6 of 10 female SHRSP showed PN of both mesenteric artery and small renal artery. However, the other 2 rats showed only PN of small renal artery. Female SHRSR and WKY did not show the occurrence of PN. OG was found in 7 female SHRSP, and cerebral softening or bleeding in 2 female SHRSP (Table). Concerning graphic computer analysis, arterial wall area was enlarged significantly

Table Microscopic Findings

	Age (m.o.)	Sex	Mesenteric Artery	Testis Artery	Renal Artery	Coronary Artery	Cerebrum Artery
SHRSP	15.5	M	##	##	+	±, f	-, S
"	15.5	M	+	##	+, O	±, f	-, S
"	15.5	M	+	+	+, O	±	-, B
"	15.5	M	##	##	+, O	±	-
"	15.5	M	##	+	+, O	±	-
"	19	F	-	-	+, O(1)	-	-
"	19	F	-	-	-	-	-
"	19	F	-	-	+, O(2)	-	-
"	19	F	##	+	±	±	-, B
"	19	F	##	+	+, O	±	-
"	19	F	##	+	+, O	±	-
"	19	F	##	##	##, O	±	-, S
"	19	F	##	##	##, O(2)	±	-
"	19	F	##	##	##, O(5)	-	-
"	19	F	-	+	+	±	-
WKY	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
SHRSR	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
"	19	F	-	-	-	-	-
"	22.5	M	##	+	+, O	±	-

m.o.: months old, O: obsolescence of glomerulus, f: fibrosis
S: softening of cerebrum, B: Bleeding of cerebrum

in PN of 6 male rats ($68.8 \pm 48.3 \times 10^4 \mu m^2$) as compared to the 6 control rats without PN ($2.7 \pm 1.0 \times 10^4 \mu m^2$). Lumen area/wall area ratio was smaller significantly in the former ($13.1 \pm 8.0\%$) as compared to the latter without PN ($35.0 \pm 21.6\%$).

Conclusion PN was found concomitantly in mesenteric artery, small testis artery and small renal artery, though it was very slight in coronary artery and was not observed in small cerebral artery. The enlarged wall area and small ratio of lumen area/wall area were found in PN of mesenteric artery.