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Association of Smoking, Diabetes, and Dialysis with the Presence of Popliteal Lesions in Femoropopliteal Artery Disease

Mitsuyoshi Takahara[1], Yoshimitsu Soga[2], Masahiko Fujihara[3], Osamu Iida[4] and Daizo Kawasaki[5]

[1]Department of Diabetes Care Medicine, Osaka University Graduate School of Medicine, Osaka, Japan
[2]Department of Cardiology, Kokura Memorial Hospital, Fukuoka, Japan
[3]Department of Cardiology, Kishiwada Tokushukai Hospital, Osaka, Japan
[4]Cardiovascular Center, Kansai Rosai Hospital, Hyogo, Japan
[5]Cardiovascular Division, Morinomiya Hospital, Osaka, Japan

Aim: Although recent advances in endovascular devices have markedly improved clinical outcomes of femoropopliteal endovascular therapy, lesions located in the popliteal artery are still a major challenge. This study aimed to determine the association of cardiovascular risk factors, including smoking, diabetes mellitus, and dialysis-dependent renal failure, with the location of atherosclerotic lesions in femoropopliteal artery disease.

Methods: We used a multicenter prospective study database registering patients with symptomatic femoropopliteal artery disease undergoing drug-coated balloon treatment. The analysis included 1912 patients with *de novo* femoropopliteal lesions. The association of clinical characteristics with popliteal lesions was investigated using the logistic regression model. In addition, the femoropopliteal artery was divided into six segments (the proximal, middle, and distal portions of the superficial femoral artery and P1, P2, and P3 segments of the popliteal artery), and the association of clinical characteristics with the presence of atherosclerotic lesions in the respective arterial segments was investigated.

Results: Smoking and dialysis-dependent renal failure showed a statistically significant inverse and positive association with the presence of popliteal lesions, respectively (adjusted odds ratio, 0.66 [95% confidence interval, 0.51–0.85] and 2.01 [1.62–2.49]; $P=0.001$ and $P<0.001$), whereas diabetes mellitus did not ($P=0.17$). The subsequent per-segment analysis presented similar results.

Conclusions: Smoking was inversely associated with popliteal lesions, whereas renal failure on dialysis was positively associated in patients with symptomatic femoropopliteal artery disease who underwent drug-coated balloon treatment. Diabetes mellitus was not significantly associated.

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Key words: Femoropopliteal artery disease, Popliteal lesion, Smoking, Diabetes mellitus, Renal failure on dialysis

Introduction

Recent advances in endovascular devices have markedly improved clinical outcomes of femoropopliteal endovascular therapy[1-5]. However, lesions located in the popliteal artery are still a major challenge. Although stenting strategies have demonstrated superior clinical outcomes to conventional plain balloon angioplasty in the superficial femoral artery (SFA)[6-8], the popliteal artery, doomed to be biomechanically affected by repetitive knee flexions, is conventionally avoided for stent deployment for fear of stent fracture, in-stent restenosis, and reocclusion[9, 10]. Furthermore, the popliteal segment has a smaller vessel diameter, which is disadvantageous for patency after angioplasty, even with drug-coated balloons (DCBs). Patients with popliteal artery disease are labeled as a challenging

Address for correspondence: Mitsuyoshi Takahara, Department of Diabetes Care Medicine, Osaka University Graduate School of Medicine, 2-2 Yamadaoka, Suita City, Osaka, 565-0871, Japan. E-mail: takahara@endmet.med.osaka-u.ac.jp

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population in femoropopliteal endovascular therapy. However, the differences in clinical features between femoropopliteal artery diseases with and without popliteal lesions remain unclear.

It is well recognized that some cardiovascular risk factors are correlated with a lower-extremity atherosclerosis distribution pattern; the most familiar examples are smoking, diabetes mellitus, and dialysis[11-13]. Smokers are likely to have aortoiliac lesions rather than infrapopliteal lesions, whereas patients with diabetes mellitus and those on dialysis often have infrapopliteal lesions rather than aortoiliac lesions[11-13]. It has been roughly illustrated that smoking is related to more proximal lesion distribution and that diabetes mellitus and renal failures are related to more distal lesion distribution. However, it remains unknown whether this simplified illustration, that is, linking smoking with proximal lesions and linking diabetes mellitus and renal failure with more distal lesions, would be true of the lesion distribution pattern within the femoropopliteal artery. We hypothesized that smoking would be inversely associated with the involvement of the popliteal artery in femoropopliteal lesions. In contrast, diabetes mellitus and dialysis-dependent renal failure would be positively associated with involvement.

Aim

This study aimed to determine the association of cardiovascular risk factors, including smoking, diabetes mellitus, and dialysis-dependent renal failure, with the location of atherosclerotic lesions in femoropopliteal artery disease.

Methods

Study Population

We used the database of the PrOsPective multiCenter registry Of dRug-coated ballooN for femoropopliteal disease (POPCORN). POPCORN is an ongoing prospective multicenter observational study that registered a total of 2507 adult patients (≥ 20 years) undergoing DCB treatment for femoropopliteal lesions (either *de novo* or restenotic) of symptomatic lower-extremity artery disease (Rutherford category 2–5) at 64 cardiovascular centers across Japan. The patients were registered between March 2018 and December 2019. The study was conducted in accordance with the Declaration of Helsinki and was approved by the institutional review boards of the participating centers. Informed consent was obtained from the participants or, if not possible, from their families. After excluding 595 patients with restenosed femoropopliteal lesions (i.e., with a history of revascularization) from the 2507 registered patients, this study included the remaining 1912 patients with *de novo* femoropopliteal lesions (i.e., without any history of revascularization). All patients were diagnosed with atherosclerotic lower-extremity artery disease. Patients with acute limb ischemia[14] were not included. In patients with bilateral limb involvement, the limb that was first registered was selected as the representative limb.

Definitions

The location of lesions was evaluated based on angiography before endovascular revascularization, and involvement of the popliteal artery was determined. The femoropopliteal artery was further divided into the following six segments, including three portions of the SFA and three of the popliteal artery: (1) the proximal SFA segment; (2) the middle SFA segment; (3) the distal SFA segment; (4) the first popliteal (P1) segment (the popliteal artery from the adductor hiatus to the proximal edge of the patella); (5) the second popliteal (P2) segment (the popliteal artery from the proximal edge of the patella to the center of the knee joint space); and (6) the third popliteal (P3) segment (the popliteal artery from the center of the knee joint space to the bifurcation of the anterior tibial artery and tibioperoneal trunk)[15].

The determination of cardiovascular risk factors was based on the clinical diagnosis according to domestic clinical guidelines. In brief, the presence of hypertension was defined as (1) having antihypertensive treatment, (2) systolic blood pressure of ≥ 140 mmHg, or (3) diastolic blood pressure of ≥ 90 mmHg[16]. Dyslipidemia was defined as (1) having antihyperlipidemic treatment, (2) triglyceride levels of ≥ 150 mg/dl, (3) low-density lipoprotein cholesterol levels of ≥ 140 mg/dl, (4) high-density lipoprotein cholesterol levels of <40 mg/dl, or (5) non-high-density lipoprotein cholesterol levels of ≥ 170 mg/dl[17]. Diabetes mellitus was defined as (1) having antidiabetic treatment, (2) fasting plasma glucose levels of ≥ 126 mg/dl, (3) casual plasma glucose levels of ≥ 200 mg/dl, or (4) hemoglobin A1c levels of ≥ 6.5%[18]. Dialysis dependence, that is, end-stage renal disease on dialysis, included both hemodialysis and peritoneal dialysis. Old age was defined as age of ≥ 75 years[19]. The body mass index was calculated as the weight in kilograms divided by the height in meter squared. The cutoff value of 25 kg/m^2 was used to refer to excessive body weight (overweight) in a Japanese population[20, 21]. Smoking was judged by whether patients currently smoked.

Statistical Analyses

Data are presented as the means ± standard deviations or medians (interquartile ranges) for continuous variables and as counts (percentages) for categorical variables, unless otherwise mentioned. A two-sided P value of <0.05 was considered statistically significant. Baseline characteristics were compared between patients with and without popliteal lesions using Welch's t test for continuous variables, the Mann–Whitney U test for ordinal variables, and the chi-squared test for other discrete variables.

The association of clinical characteristics with popliteal lesions was investigated using the logistic regression model. Their association with lesions in respective arterial segments was also investigated using the logistic regression model. These associations of clinical characteristics with arterial lesions were presented as odds ratios and 95% confidence intervals (CIs). The trend of the odds ratios in the six segments of the femoropopliteal artery was assessed by a linear relationship between arterial segments (consecutively numbered from 1 [representing proximal SFA] to 6 [representing P3]) and their corresponding log-transformed odds ratios, which was statistically tested using 2,000 bootstrapping iterations. The association of clinical characteristics with aortoiliac lesions and the number of diseased infrapopliteal runoffs (the anterior and posterior tibial arteries and the peroneal artery) was analyzed using the logistic regression model and the cumulative link model with a logit link function, respectively, to supplementally check whether this study population could reproduce this classical association. All statistical analyses were performed using R version 4.1.1 (R Development Core Team, Vienna, Austria).

Results

The clinical characteristics of the study population are summarized in **Table 1**. The prevalence of smoking, diabetes mellitus, and renal failure on dialysis was 21.7%, 64.6%, and 27.5%, respectively. A total of 687 patients (35.9%) had popliteal lesions. This sample size was calculated to be sufficient to detect an adjusted odds ratio of 1.5 (or its reciprocal 1/1.5=0.67) between smoking, diabetes mellitus, or dialysis-dependent renal failure and the presence of popliteal lesions, with a statistical power of more than 90% (to be exact, 92.0%, 97.5%, and 95.7%, respectively), under an assumption of the observed prevalence and correlation among covariates. Patients with popliteal lesions were more likely to be female, less likely to smoke, and more likely to have renal failure requiring dialysis **(Table 1)**.

As shown in **Table 2**, smoking was inversely associated with the presence of popliteal lesions, with an adjusted odds ratio of 0.66 (95% CI, 0.51–0.85; $P=0.001$), whereas female sex and renal failure on dialysis were positively associated with the presence of lesions, with adjusted odds ratios of 1.64 (95% CI, 1.34–2.01; $P<0.001$) and 2.01 (95% CI, 1.62–2.49; $P<0.001$), respectively. Diabetes mellitus was not significantly associated with popliteal lesions, with an adjusted odds ratio of 1.16 (95% CI, 0.94–1.43; $P=0.17$).

The association of clinical characteristics with more segmented lesion localization is illustrated in **Fig. 1**. Smoking was positively associated with the lesion involvement of the proximal and middle SFA segments, with adjusted odds ratios of 1.33 (95% CI, 1.06–1.67; $P=0.015$) and 1.83 (95% CI, 1.43–2.36; $P<0.001$), respectively; whereas it was inversely associated with the lesion involvement of the P1, P2, and P3 segments, with adjusted odds ratios of 0.75 (95% CI, 0.57–0.97; $P=0.030$), 0.68 (95% CI, 0.50–0.92; $P=0.012$), and 0.65 (95% CI, 0.42–0.99; $P=0.047$), respectively **(Fig. 1D)**. In contrast, renal failure on dialysis was inversely associated with the lesion involvement of the proximal and middle SFA segments, with adjusted odds ratios of 0.65 (95% CI, 0.52–0.80; $P<0.001$) and 0.71 (95% CI, 0.58–0.88; $P=0.002$), respectively; whereas it was positively associated with the lesion involvement of the P1, P2, and P3 segments, with adjusted odds ratios of 1.82 (95% CI, 1.46–2.27; $P<0.001$), 2.02 (95% CI, 1.59–2.56; $P<0.001$), and 1.88 (95% CI, 1.38–2.57; $P<0.001$), respectively **(Fig. 1H)**. Other significant associations were between old age and more involvement of the P3 segment **(Fig. 1A)**, between female sex and more involvement of the proximal SFA, P1, P2, and P3 segments **(Fig. 1B)**, between overweight and less involvement of the proximal SFA segment **(Fig. 1C)**, between hypertension and more involvement of the proximal SFA segment but less involvement of the P3 segment **(Fig. 1E)**, and between dyslipidemia and more involvement of the middle and distal SFA segments **(Fig. 1F)** (all $P<0.05$). Diabetes mellitus was not significantly associated with lesions in any of the segments (all $P>0.05$) **(Fig. 1G)**. Neither was the trend of the odds ratios in the six segments statistically significant (P for trend=0.13); the fold increase of the odds ratio per-segment was 1.07 (95% CI, 0.98–1.16). The fold increase to the fifth power, corresponding to the difference in the odds ratio between the proximal SFA and P3, was calculated to be 1.39 (95% CI, 0.90–2.13).

We supplementally checked the association of clinical characteristics with aortoiliac and infrapopliteal

Table 1. Clinical characteristics of the study population

	Overall population (n=1912)	Patients with popliteal lesions (n=687)	Patients without popliteal lesions (n=1225)	P values
Age (years)	75 ± 9	75 ± 9	74 ± 9	0.16
Old age (≥ 75 years)	1029 (53.8%)	383 (55.7%)	646 (52.7%)	0.22
Female sex	657 (34.4%)	289 (42.1%)	368 (30.0%)	<0.001
Overweight	435 (22.8%)	140 (20.4%)	295 (24.1%)	0.072
Smoking	414 (21.7%)	107 (15.6%)	307 (25.1%)	<0.001
Hypertension	1625 (85.0%)	580 (84.4%)	1045 (85.3%)	0.65
Dyslipidemia	1618 (84.6%)	568 (82.7%)	1050 (85.7%)	0.089
Diabetes mellitus	1235 (64.6%)	457 (66.5%)	778 (63.5%)	0.20
Renal failure on dialysis	526 (27.5%)	255 (37.1%)	271 (22.1%)	<0.001
Symptom of peripheral artery disease				<0.001
Intermittent claudication	1341 (70.1%)	372 (54.1%)	969 (79.1%)	
Rest pain	176 (9.2%)	91 (13.2%)	85 (6.9%)	
Tissue loss	395 (20.7%)	224 (32.6%)	171 (14.0%)	
Ankle brachial index	0.61 ± 0.23	0.58 ± 0.26	0.64 ± 0.21	<0.001
Aortoiliac lesion	411 (21.8%)	118 (17.5%)	293 (24.2%)	0.001
Femoropopliteal lesion				
Proximal segment of the superficial femoral artery	843 (44.1%)	182 (26.5%)	661 (54.0%)	<0.001
Middle segment of the superficial femoral artery	1214 (63.5%)	263 (38.3%)	951 (77.6%)	<0.001
Distal segment of the superficial femoral artery	1165 (60.9%)	463 (67.4%)	702 (57.3%)	<0.001
First popliteal (P1) segment	587 (30.7%)	587 (85.4%)	0 (0.0%)	<0.001
Second popliteal (P2) segment	427 (22.3%)	427 (62.2%)	0 (0.0%)	<0.001
Third popliteal (P3) segment	211 (11.0%)	211 (30.7%)	0 (0.0%)	<0.001
Popliteal segment (from P1 to P3)	687 (35.9%)	687 (100.0%)	0 (0.0%)	<0.001
Infrapopliteal lesion				<0.001
No diseased infrapopliteal runoff	395 (20.7%)	95 (13.8%)	300 (24.6%)	
1 diseased infrapopliteal runoff	664 (34.8%)	206 (30.0%)	458 (37.5%)	
2 diseased infrapopliteal runoffs	611 (32.0%)	269 (39.2%)	342 (28.0%)	
3 diseased infrapopliteal runoffs	237 (12.4%)	117 (17.0%)	120 (9.8%)	

Data are presented as mean ± standard deviation, median (interquartile range), or counts (percentages). P values are for the difference between the groups with and without popliteal lesions. Data were missing on ankle brachial index in 35 patients (1.8%), on aortoiliac lesion in 26 patients (1.4%), and on infrapopliteal lesion in 5 patients (0.3%).

Table 2. Association of clinical characteristics with popliteal lesion

	Unadjusted odds ratio	Adjusted odds ratio
Old age	1.13 [0.94–1.36] (P=0.20)	1.10 [0.90–1.34] (P=0.36)
Female sex	1.69 [1.39–2.05] (P<0.001)	1.64 [1.34–2.01] (P<0.001)
Overweight	0.81 [0.64–1.01] (P=0.064)	0.83 [0.66–1.05] (P=0.12)
Smoking	0.55 [0.43–0.70] (P<0.001)	0.66 [0.51–0.85] (P=0.001)
Hypertension	0.93 [0.72–1.21] (P=0.60)	0.88 [0.67–1.15] (P=0.35)
Dyslipidemia	0.80 [0.62–1.03] (P=0.078)	0.86 [0.66–1.12] (P=0.27)
Diabetes mellitus	1.14 [0.94–1.39] (P=0.19)	1.16 [0.94–1.43] (P=0.17)
Renal failure on dialysis	2.08 [1.69–2.55] (P<0.001)	2.01 [1.62–2.49] (P<0.001)

Data are presented as odds ratios [95% confidence intervals] (P values) for the presence of popliteal lesions. Unadjusted odds ratios were derived from the univariate logistic regression model in a variable of interest was entered as the explanatory variable, whereas adjusted odds ratios were derived from the multivariate logistic regression model in which all the variables listed in the table were entered as the explanatory variables.

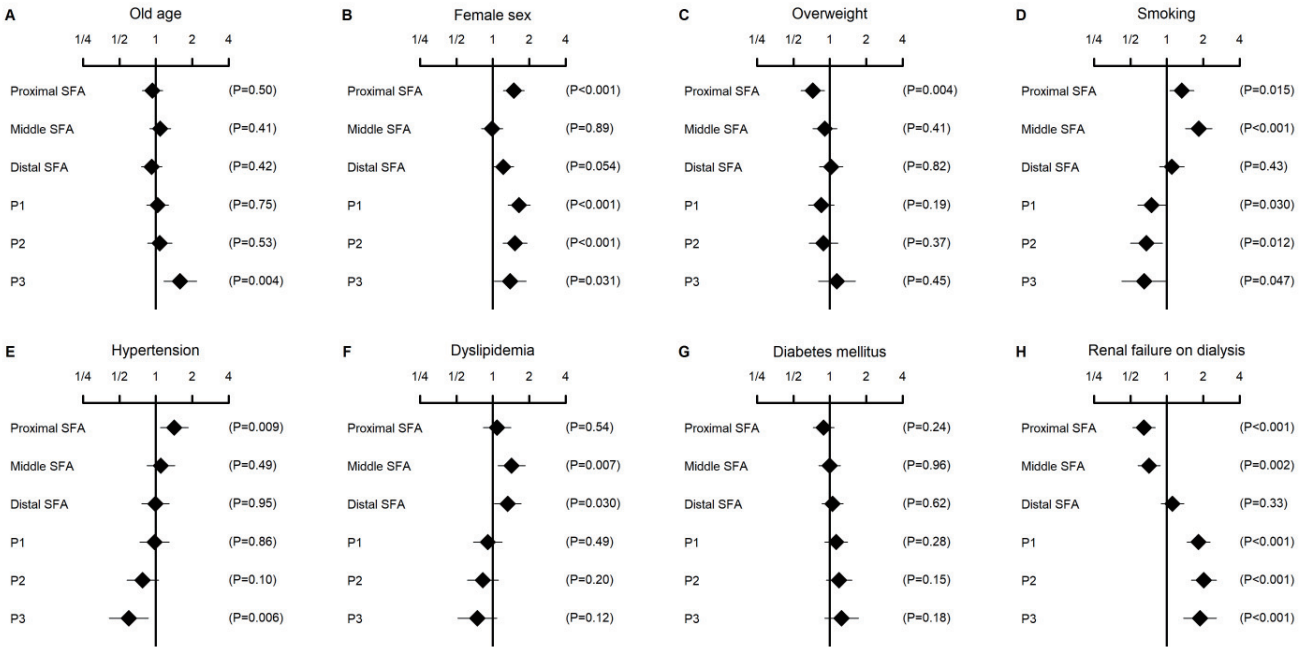

Fig. 1. Association of clinical characteristics with affected femoropopliteal segments

Data are adjusted odds ratios of clinical characteristics (old age [A], male sex [B], overweight [C], smoking [D], hypertension [E], dyslipidemia [F], diabetes mellitus [G], and renal failure on dialysis [H]) for the presence of arterial lesions in each femoropopliteal segment. The values were derived from the multivariate logistic regression model, in which all the variables listed in the figure were entered as the explanatory variables. Error bars indicate 95% confidence intervals. SFA, superficial femoral artery.

Table 3. Association of clinical characteristics with aortoiliac and infrapopliteal lesions

	Adjusted odds ratio for aortoiliac lesion	Adjusted odds ratio for infrapopliteal lesion
Old age	0.86 [0.68–1.09] (P=0.21)	1.84 [1.55–2.19] (P<0.001)
Female sex	0.70 [0.55–0.90] (P=0.006)	1.21 [1.01–1.44] (P=0.034)
Overweight	0.62 [0.46–0.83] (P=0.001)	0.93 [0.76–1.13] (P=0.46)
Smoking	1.36 [1.04–1.78] (P=0.023)	0.81 [0.66–0.997] (P=0.047)
Hypertension	1.48 [1.06–2.07] (P=0.021)	1.09 [0.86–1.37] (P=0.48)
Dyslipidemia	1.10 [0.80–1.51] (P=0.55)	0.99 [0.79–1.25] (P=0.95)
Diabetes mellitus	0.61 [0.48–0.77] (P<0.001)	1.24 [1.03–1.48] (P=0.019)
Renal failure on dialysis	0.68 [0.51–0.89] (P=0.005)	2.14 [1.77–2.59] (P<0.001)

Data are presented as adjusted odds ratios [95% confidence intervals] (P values) for the presence of aortoiliac lesion and the number of diseased infrapopliteal runoffs, derived from the logistic regression model and the cumulative link model with a logit link function, respectively. The unadjusted odds ratios were derived from the univariate model in which a variable of interest was entered as the explanatory variable, whereas the adjusted odds ratios were derived from the multivariate model in which all the variables listed in the table were entered as the explanatory variables.

lesions in this study population (Table 3). Smoking was positively associated with aortoiliac lesions (adjusted odds ratio, 1.36 [95% CI, 1.04–1.78; P=0.023]) and was inversely associated with infrapopliteal lesions (adjusted odds ratio, 0.81 [95% CI, 0.66–0.997]; P=0.047). On the other hand, both diabetes mellitus and renal failure on dialysis were inversely associated with aortoiliac lesions (adjusted odds ratio, 0.61 [95% CI, 0.48–0.77] and 0.68 [95% CI, 0.51–0.89]; P<0.001 and P=0.005, respectively) and were positively associated with infrapopliteal lesions (adjusted odds ratio, 1.24 [95% CI, 1.03–1.48] and 2.14 [95% CI, 1.77–2.59]; P=0.019 and P<0.001, respectively).

Discussion

This study demonstrated that smoking and renal failure on dialysis were inversely and positively, respectively, associated with the involvement of the

popliteal artery in patients with symptomatic femoropopliteal artery disease undergoing DCB treatment. In contrast, diabetes mellitus had no significant specificity with regard to lesion localization in femoropopliteal artery disease. The subsequent per-segment analyses confirmed that smoking was related to the more proximal lesions, whereas renal failure on dialysis was related to the more distal lesions. Diabetes mellitus was again not associated with the involvement of any arterial segments. To the best of our knowledge, this is the first report investigating the association between cardiovascular risk factors and the distribution pattern of atherosclerotic lesions in femoropopliteal artery disease.

Previous studies on the distribution pattern of atherosclerotic lesions in the lower-extremity arteries, based on a rough division of the arteries into three parts, that is, aortoiliac, femoropopliteal, and infrapopliteal arteries, reported that smoking was linked with aortoiliac rather than infrapopliteal disease, whereas diabetes mellitus and dialysis-dependent renal failure were linked with infrapopliteal rather than aortoiliac lesions[11-13]. Our supplemental analyses on aortoiliac and infrapopliteal diseases **(Table 3)** successfully reproduced those conventional findings, which would suggest an unbiased population in this study.

In this population, smoking was inversely associated with popliteal lesions in the femoropopliteal artery, whereas renal failure on dialysis was positively associated with their presence **(Table 2)**. The subsequent per-segment analyses **(Fig. 1)** also supported our initial hypothesis that smoking was related to the more proximal femoropopliteal lesion distribution, whereas renal failure on dialysis was related to more distal lesions. These findings align with the conventional results based on trichotomy of the lower-extremity arteries[11-13]. Compared with the proximal artery, the distal artery presents more typical features of muscular arteries, characterized as little elastin material, predominant smooth muscle in the tunica media, and a scanty subendothelial layer with a prominent internal elastic membrane. Moreover, the relationship of arterial lumen to wall thickness decreases from proximal to distal, altering arterial flow and shear stress[11]. The graded heterogeneity of these histological and hemodynamic components might modify the susceptibility of respective arterial segments to atherosclerosis induced by smoking and dialysis-dependent renal failure. Uremic toxins and micro-inflammation induce vascular smooth muscle cell dysfunction[22, 23], which might partially explain atherosclerotic lesions of more distal, muscular arteries in patients with dialysis-dependent renal failure.

In contrast, diabetes mellitus was not significantly associated with popliteal lesions in femoropopliteal artery disease, which seemed contrary to a familiar diabetes–distality relationship proven by the association between diabetes mellitus and infrapopliteal lesions in lower-extremity artery disease[11-13]. Although the true mechanisms of the current findings remained unknown, the presence of elastin in the femoropopliteal artery may be the differentiating factor. Compared with the infrapopliteal artery, the femoropopliteal artery, even the popliteal artery, are more likely to be elastic. The presence of elastin, potentially preventing fibrocellular pathology[24], might protect against atherosclerotic change by diabetes mellitus. The protective effects could be achieved even if only scanty elastin material exists, as in the distal part of the femoropopliteal artery. Another speculation is a potential protective impact of the arterial lumen size. Not only the SFA but also the popliteal artery, which is proximal to the trifurcation, has a larger vessel diameter than the infrapopliteal artery, distal to the trifurcation. The difference in size might cause the different susceptibility to diabetic atherogenesis between the infrapopliteal artery and the popliteal artery. Our finding indicated that in femoropopliteal artery disease, diabetes mellitus had no remarkable specificity with regard to lesion localization.

Female sex was associated with lesions in the proximal SFA, P1, P2, and P3 segments, whereas dyslipidemia was associated with their presence in the other segments (the middle and distal SFA segments). A previous study, assessing arterial wall compliance among the proximal SFA, the distal SFA, and the middle genicular popliteal artery, reported that the distal SFA was less distensible than the other two[25]. The intermediate portion of the femoropopliteal artery might have different elastic properties, and the difference might affect the sex- and lipid-related acceleration of atherosclerosis. On the other hand, the involvement of the P3 segment was related to old age and hypertension. Its anatomical manifestation, characterized as the direct inflow into the branches plus the repetitive exposure to biomechanical forces accompanied by the knee movement, might be relevant. Similarly, the atherosclerotic lesions in the proximal SFA, the involvement of which was related to being overweight and having hypertension, might be dependent on its anatomical manifestation, such as being directly distal to the bifurcation and being subject to biomechanical forces accompanied by the hip movement.

This study indicates that the pathogenesis of atherosclerotic lesions and the contribution by

individual cardiovascular risk factors are heterogeneous among arterial segments within the femoropopliteal artery. More research is required to prove the underlying pathological mechanisms, which will promote the understanding of the pathogeneses of femoropopliteal artery disease. Future studies are also warranted to reveal the influence of individual cardiovascular risk factors on atherosclerotic change in each segment of the femoropopliteal artery. Such studies will contribute to establishing practical strategies in the management of cardiovascular risk factors for the primary and secondary prevention of the disease.

Our study had several limitations. First, our data were cross-sectional, and we could not prove causal relationships between cardiovascular risk factors and affected arterial segments. Respective cardiovascular risk factors per se might be complexly linked with one another[26]. Second, details of cardiovascular risk factors[27-30], medications[31-34], and other general conditions[35, 36] were not analyzed in this study. Third, our study population was limited to patients undergoing femoropopliteal DCB treatment, which would cause a selection bias. Whether similar findings were observed in patients undergoing other revascularization strategies[3] and in symptom-free patients not requiring revascularization[37, 38] remains unknown. Fourth, this study was conducted in Japan. Future studies in other countries are necessary to validate the findings.

Conclusion

Smoking was inversely associated with popliteal lesions, whereas renal failure on dialysis was positively associated in patients with symptomatic femoropopliteal artery disease who underwent DCB treatment. On the other hand, diabetes mellitus had no significant specificity with regard to lesion localization in femoropopliteal artery disease.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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