Table S1. Correlations between the patients' age and clinical characteristics (*n* = 102).

Factor	Age <60 (*n* = 74)	Age ≥60 (*n* = 28)	*p*-value [a]
Stage I/II			
n (%)	17 (22.97%)	6 (21.43%)	1.00
Pretreatment fasting sugar median (IQR)	96.00 (90.00, 106.00)	100.50 (86.00, 112.00)	1.00
Pretreatment cholesterol median (IQR)	178.00 (144.00, 204.00)	194.00 (159.00, 221.00)	0.54
Pretreatment triglyceride median (IQR)	105.00 (84.00, 136.00)	109.00 (83.50, 130.00)	0.87
FAS (2~ 3+)			
n (%)	10 (13.51%)	4 (14.29%)	1.00
CPT1 (3+)			
n (%)	14 (18.92%)	0 (0.00%)	0.01*
MCAD (3+)			
n (%)	24 (32.43%)	11 (39.29%)	0.68
LCAD (2~3+)			
n (%)	13 (17.57%)	3 (10.71%)	0.55
VLCAD (2~3+)			
n (%)	11 (14.86%)	3 (10.71%)	0.75
HADHA (3+)			
n (%)	6 (8.11%)	6 (21.43%)	0.09

[a] χ^2 test or Fisher's exact test for categorical variables / Mann-Whitney U test for continuous variables. * *p* < 0.05; *n*: number; IQR: interquartile range; T: tumor; N: node; FAS: fatty acid synthase; CPT1: carnitine palmitoyl transferase 1; MCAD: medium-chain acyl-CoA dehydrogenase; LCAD: long-chain acyl-CoA dehydrogenase; VLCAD: very-long-chain acyl-CoA dehydrogenase; HADHA: hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase.

Table S2. Correlations between N stage and patients' characteristics (*n* = 102).

Factor	Node-negative (*n* = 49)	Node-positive (*n* = 53)	*p*-value [a]
Age			
median (IQR)	52.70 (45.13, 60.91)	50.19 (45.63, 61.03)	0.47
Pretreatment fasting sugar median (IQR)	95.00 (91.00, 104.00)	100.00 (88.00, 110.00)	0.32
Pretreatment cholesterol median (IQR)	175.00 (15.00, 202.00)	187.00 (154.00, 208.00)	0.50
Pretreatment triglyceride median (IQR)	107.00 (83.00, 128.00)	106.00 (84.00, 145.00)	0.81
FAS (2~3+)			
n (%)	8 (16.33%)	6 (11.32%)	0.66
CPT1 (3+)			
n (%)	7 (14.29%)	7 (13.21%)	1.00
MCAD (3+)			
n (%)	14 (28.57%)	21 (39.62%)	0.33
LCAD (2~3+)			
n (%)	5 (10.20%)	11 (20.75%)	0.23
VLCAD (2~3+)			
n (%)	7 (14.29%)	7 (13.21%)	1.00
HADHA (3+)			
n (%)	7 (14.29%)	5 (9.43%)	0.65

[a] χ^2 test or Fisher's exact test for categorical variables / Mann-Whitney U test for continuous variables. * *p* < 0.05; *n*: number; IQR: interquartile range; T: tumor; N: node; FAS: fatty acid synthase; CPT1: carnitine palmitoyl transferase 1; MCAD: medium-chain acyl-CoA dehydrogenase; LCAD: long-chain acyl-CoA dehydrogenase; VLCAD: very-long-chain acyl-

CoA dehydrogenase; HADHA: hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase.

Table S3. Correlations between the clinical HPV P16 and patients' characteristics ($n = 102$).

Factor	P16 (-) (n = 89)	P16 (+) (n = 13)	p-value [a]
Age median (IQR)	52.64 (45.36, 61.33)	51.24 (43.52, 52.28)	0.316
Pretreatment fasting sugar median (IQR)	96.00 (87.00, 108.00)	101.00 (95.00, 105.00)	0.408
Pretreatment cholesterol median (IQR)	184.00 (152.00, 206.00)	175.00 (154.00, 195.00)	0.564
Pretreatment triglyceride median (IQR)	109.00 (84.00, 136.00)	95.00 (86.00, 114.00)	0.388
FAS (2~ 3+) n (%)	11 (12.36%)	3 (23.08%)	0.381
CPT1(3+) n (%)	14 (15.73%)	0 (0.00%)	0.206
MCAD (3+) n (%)	32 (35.96%)	3 (23.08%)	0.534
LCAD (2~3+) n (%)	14 (15.73%)	2 (15.38%)	1.000
VLCAD (2~3+) n (%)	10 (11.24%)	4 (30.77%)	0.077
HADHA (3+) n (%)	12 (13.48%)	0 (0.00%)	0.355

[a] χ^2 test or Fisher's exact test for categorical variables / Mann-Whitney U test for continuous variables. * $p < 0.05$; n: number; IQR: interquartile range; T: tumor; N: node; FAS: fatty acid synthase; CPT1: carnitine palmitoyl transferase 1; MCAD: medium-chain acyl-CoA dehydrogenase; LCAD: long-chain acyl-CoA dehydrogenase; VLCAD: very-long-chain acyl-CoA dehydrogenase; HADHA: hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase; HPV: Human papillomavirus

Table S4. Correlations between Ki-67 expression and patients' characteristics ($n = 102$).

Factor	Ki-67 < 10% (n = 94)	Ki-67 ≥ 10% (n = 8)	p-value [a]
Age median (IQR)	51.96 (45.13, 61.03)	55.51 (47.72, 61.07)	0.467
Pretreatment fasting sugar median (IQR)	96.00 (88.00, 106.00)	100.50 (88.00, 126.00)	0.588
Pretreatment cholesterol median (IQR)	182.00 (150.00, 206.00)	179.00 (156.00, 190.50)	0.746
Pretreatment triglyceride median (IQR)	106.50 (84.00, 132.00)	102.00 (80.00, 208.50)	0.990
FAS (2~3+) n (%)	13 (13.83)	1 (12.50)	1.000
CPT1(3+) n (%)	13 (13.83)	1 (12.50)	1.000
MCAD (3+) n (%)	33 (35.11)	2 (25.00)	0.712
LCAD (2~3+) n (%)	13 (13.83)	3 (37.50)	0.109
VLCAD (2~3+) n (%)	11 (11.70)	3 (37.50)	0.077
HADHA (3+) n (%)	12 (12.77)	0 (0.00)	0.591

[a] χ^2 test or Fisher's exact test for categorical variables / Mann-Whitney U test for continuous variables. * $p < 0.05$; n: number; IQR: interquartile range; T: tumor; N: node; FAS: fatty acid synthase; CPT1: carnitine palmitoyl transferase 1; MCAD: medium-chain acyl-CoA dehydrogenase; LCAD: long-chain acyl-CoA dehydrogenase; VLCAD: very-long-chain acyl-

CoA dehydrogenase; HADHA: hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase.