Supplementary TABLE 1 Response rates in patients with and without surgical resection.

Variables	Surgical group (n=27)		Non-surgical group (n=14)		Total (n=41)		P Value
	NO.	%	NO.	%	NO.	%	
Response							
Stable disease	4	14.8	0	0.0	4	9.8	0.043
Progressive disease	23	85.2	14	100.0	37	90.2	

Supplementary TABLE 2 Table of baseline characteristics of patients in the neoadjuvant therapy group and the direct surgical resection group.

Variables	Preoperative chemotherapy group (n=11)		Direct surgery group (n=16)		Total (n=27)		P value
	No.	%	No.	%	No.	%	
Median age (range)	53.55±10.829		56.13±12.558		55.07±11.737		0.152
Number of metastatic sites	2.00 (1.00, 3.00)		2.00 (1.00, 3.00)		2.00 (1.00-3.00)		0.499
OM metastases foci size(cm)	4.00 (3.00, 10.00)		9.00 (5.00, 12.00)		6.00 (4.00-12.00)		0.069
Metastasis of stomach cancer to the ovaries(months)	0.00 (0.00, 0.13)		0.00 (0.00, 6.11)		0.00 (0.00-0.30)		0.199
Family history of cancer							0.545
Yes	2	18.2	2	12.5	4	14.8	
No	9	81.8	14	87.5	23	85.2	
ECOG PS 0-1							0.658
Yes	10	90.9	15	93.75	25	92.6	
No	1	9.1	1	6.25	2	7.4	
Primary lesion							0.102
cut	4	36.4	11	68.75	15	55.6	
Uncut	7	63.6	5	31.25	12	54.4	
Oligotransfers							0.449
Yes	3	27.3	6	37.5	9	33.3	
No	8	72.7	10	62.5	18	66.7	
Ascites							0.244
Yes	5	45.5	4	25	9	33.3	
No	6	54.5	12	75	18	66.7	
Peritoneal metastases							0.637
Yes	4	36.4	6	37.5	10	37.1	
No	7	63.6	10	62.5	17	62.9	
CA125＞26.1							0.167
Yes	9	81.8	9	56.25	18	66.7	
No	2	18.2	7	43.75	9	33.3	
CA199＞7.3							0.112
Yes	10	90.9	10	62.5	20	74.1	
No	1	9.1	6	37.5	7	25.9	
CEA＞0.95							0.191
Yes	11	100	13	81.25	24	88.9	
No	0	0	3	18.75	3	11.1	
CA125							0.564
Normal	6	54.5	8	50	14	51.9	
Abnormal	5	45.5	8	50	13	48.1	
CA199							0.414
Normal	7	63.6	12	75	19	70.4	
Abnormal	4	36.4	4	25	8	29.6	
CEA							0.267
Normal	7	63.6	7	43.75	14	51.9	
Abnormal	4	36.4	9	56.25	13	48.1	
Bilateral ovarian metastases							0.109
Yes	9	81.8	7	43.75	16	59.3	
No	2	18.2	9	56.25	11	40.7	
OM metastases foci size＜3.15							0.038
Yes	4	36.4	0	0	4	14.8	
No	7	63.6	16	100	23	85.2	
OM metastases foci size＜5							0.047
Yes	7	63.6	5	31.25	12	44.4	
No	4	36.4	11	68.75	15	55.6	

ECOG PS，Eastern Cooperative Oncology organization physical status score.

Supplementary TABLE 3 Response rates in patients treated with neoadjuvant therapy and directly undergoing surgical resection.

Variables	Chemotherapy group (n=11)		Direct surgery group (n=16)		Total (n=27)		P Value
	NO.	%	NO.	%	NO.	%	
Response							
Stable disease	3	27.3	1	6.3	4	14.8	0.194
Progressive disease	8	72.7	15	93.7	23	85.2	

Supplementary TABLE 4 Univariate analysis of OS in the neoadjuvant treatment group and independent factor analysis of OM.

Variables	OS Univariate analysis HR（95%CI)	Pvalue	OM Univariate analysis HR（95%CI)	Pvalue
Age	0.99（0.91-1.08)	0.830	0.99（0.92-1.09)	0.974
Age(<45)	0.77(0.09-6.88)	0.811	2.07（0.24-17.98)	0.509
Family history of cancer	0.92(0.17-4.96)	0.923	0.63（0.11-3.51)	0.601
ECOG PS 0-1		0.191		0.766
Primary lesion	0.62(0.12-3.10)	0.557	0.61（0.13-2.82)	0.530
Oligotransfers	0.18（0.03-1.10)	0.063	0.20（0.03-1.21)	0.080
Ascites	0.68（0.14-3.47)	0.647	1.32（0.29-5.96)	0.714
Peritoneal metastases	2.70（0.50-14.62)	0.250	2.10（0.40-11.04)	0.380
CA125>26.1	0.98(0.11-8.59)	0.991	4.24（0.27-17.91)	0.307
CA199>7.3	1.95(0.22-17.54)	0.552	1.76（0.19-15.90)	0.616
CA125>35	2.14(0.41-11.24)	0.369	2.93（0.56-15.23)	0.202
CA199>37	1.65(0.31-8.61)	0.555	1.77（0.32-9.82)	0.517
CEA>5	0.92(0.15-5.53)	0.927	1.40（0.26-7.69)	0.698
Metastasis of stomach cancer to the ovaries	0.80（0.21-3.07)	0.747	0.85（0.21-3.44)	0.817
Bilateral ovarian metastases	0.85（0.09-7.63)	0.881	0.62（0.07-5.40)	0.668
OM metastases foci size＜3.15	2.17（0.39-11.97)	0.374	2.59（0.30-22.36)	0.387
OM metastases foci size＜5	0.69(0.13-3.63)	0.663	0.66（0.12-3.71)	0.635
Number of transfer sites				
1		0.392		0.417
2		0.948		0.953
3		0.954		0.957
6		0.958		0.961

ECOG PS , Eastern Cooperative Oncology organization physical status score.;OS, time from diagnosis of the primary lesion to death of the patient; OM, time from ovarian metastasis to patient death.

Supplementary TABLE 5 Univariate analysis of independent factors of postoperative DFS and OSAS in neoadjuvant treatment group.

Variables	DFS Univariate analysis HR(95%CI)	Pvalue	OSAS Univariate analysis HR(95%CI)	Pvalue
Age	1.05(0.95-1.17)	0.319	1.03 (0.93-1.13)	0.589
Age(<45)	1.21(0.14-10.42)	0.865	1.58 (0.18-14.23)	0.683
Family history of cancer	1.26(0.03-1.96)	0.320	1.34 (0.23-7.71)	0.741
ECOG PS 0-1		0.691		0.707
Primary lesion	0.97(0.22-4.39)	0.971	0.52 (0.10-2.57)	0.420
Oligotransfers	0.42(0.09-1.99)	0.277	0.24 (0.05-1.24)	0.089
Ascites	0.84(0.17-4.19)	0.834	0.71 (0.12-4.28)	0.708
Peritoneal metastases	3.96(0.47-33.38)	0.205	1.86 (0.36-9.67)	0.462
CA125>26.1	1.26(0.13-12.18)	0.843	1.46 (0.15-14.10)	0.746
CA199>7.3	0.61(0.07-5.55)	0.659	1.07 (0.12-9.76)	0.949
CA125>35	0.53(0.11-2.66)	0.441	1.96 (0.38-10.17)	0.425
CA199>37	3.96(0.47-33.38)	0.205	1.86 (0.36-9.67)	0.462
CEA>5	1.80(0.34-9.45)	0.486	1.56 (0.28-8.71)	0.612
Metastasis of stomach cancer to the ovaries		0.925	0.84 (0.22-3.22)	0.793
Bilateral ovarian metastases	0.61(0.07-5.55)	0.659	0.57 (0.07-4.92)	0.605
OM metastases foci size＜3.15	0.70(0.14-3.58)	0.672	1.68 (0.32-8.75)	0.537
OM metastases foci size＜5	0.27 (0.03-2.28)	0.229	0.57 (0.11-2.99)	0.510
Number of transfer sites				
1		0.457		0.491
2		0.221		0.941
3		0.457		0.948

ECOG PS , Eastern Cooperative Oncology organization physical status score; DFS, postoperative disease-free survival; OSAS, time from surgical resection to patient death.

Supplementary TABLE 6 Univariate and multivariate analysis of independent factors of OS in the direct surgery group.

Variables	OS			
	Univariate analysis		Multivariable analysis	
	HR（95%CI)	Pvalue	HR（95%CI)	Pvalue
Age	0.97（0.93-1.02)	0.247		
Age(<45)	0.18（0.04-0.93)	**0.040**	0.09(0.01-0.78)	0.029
Family history of cancer	2.32（0.49-10.79)	0.284		
ECOG PS 0-1	14.49（0.91-23.78)	**0.059**	5.31（0.27-10.65)	0.274
Primary lesion	0.83（0.22-3.06)	0.774		
Oligotransfers	0.87（0.29-2.53)	0.795		
Ascites	0.29（0.08-1.12)	**0.073**	8.25（1.47-46.12)	**0.016**
Peritoneal metastases	1.01（0.33-3.04)	0.991		
CA125>26.1	1.54（0.48-4.94)	0.472		
CA199>7.3	1.62（0.51-5.21)	0.417		
CEA>0.95	1.07（0.29-4.01)	0.919		
CA125>35	1.16（0.37-3.64)	0.799		
CA199>37	2.79（0.59-13.21)	0.196		
CEA>5	1.35（0.47-3.87)	0.578		
Metastasis of stomach cancer to the ovaries	1.00（0.92-1.09)	0.976		
Bilateral ovarian metastases	0.81（0.28-2.36)	0.703		
OM metastases foci size＜3.15				
OM metastases foci size＜5	0.98（0.32-2.96)	0.967		
Number of transfer sites				
1		0.970		
2		0.922		
3		0.920		
5		0.920		

ECOG PS , Eastern Cooperative Oncology organization physical status score; OS, time from diagnosis of the primary lesion to death of the patient. Bold values in univariate analysis indicate P < 0.1 and were included in multivariate analysis; Bold values in multivariate analysis indicate P < 0.05, and differences are statistically significant.

Supplementary TABLE 7 Univariate and multivariate analyses of OM independent factors in the direct surgery group.

Variables	OM			
	Univariate analysis HR（95%CI)	Pvalue	Multivariable analysis HR（95%CI)	Pvalue
Age	0.98（0.94-1.03)	0.413		
Age(<45)	3.89（0.86-17.51)	**0.077**	0.08（0.01-0.94)	**0.044**
Family history of cancer	1.76（0.38-8.15)	0.468		
ECOG PS 0-1	14.49（0.91-23.78)	**0.059**	8.83（0.40-19.08)	0.166
Primary lesion	0.77（0.21-2.83)	0.693		
Oligotransfers	1.13（0.39-3.33)	0.821		
Ascites	0.17（0.04-0.70)	**0.014**	22.08（2.41-201.95)	**0.006**
Peritoneal metastases	0.74（0.24-2.25)	0.594		
CA125>26.1	1.43（0.44-4.62)	0.548		
CA199>7.3	2.89（0.75-11.14)	0.123		
CEA>0.95	0.96（0.26-3.56)	0.951		
CA125>35	1.09（0.35-3.41)	0.887		
CA199>37	2.87（0.61-13.54)	0.184		
CEA>5	1.46（0.50-4.25)	0.488		
Metastasis of stomach cancer to the ovaries	1.03（0.95-1.12)	0.480		
Bilateral ovarian metastases	0.84（0.29-2.42)	0.747		
OM metastases foci size＜3.15				
OM metastases foci size＜5	0.75（0.25-2.27)	0.610		
Number of transfer sites				
1		0.721		
2		0.924		
3		0.918		
5		0.919		

ECOG PS，Eastern Cooperative Oncology organization physical status score; OM, time from ovarian metastasis to patient death. Bold values in univariate analysis indicate P < 0.1 and were included in multivariate analysis; Bold values in multivariate analysis indicate P < 0.05, and the difference is statistically significant.

Supplementary TABLE 8 Univariate and multivariate analysis of independent factors of postoperative DFS in the direct surgery group.
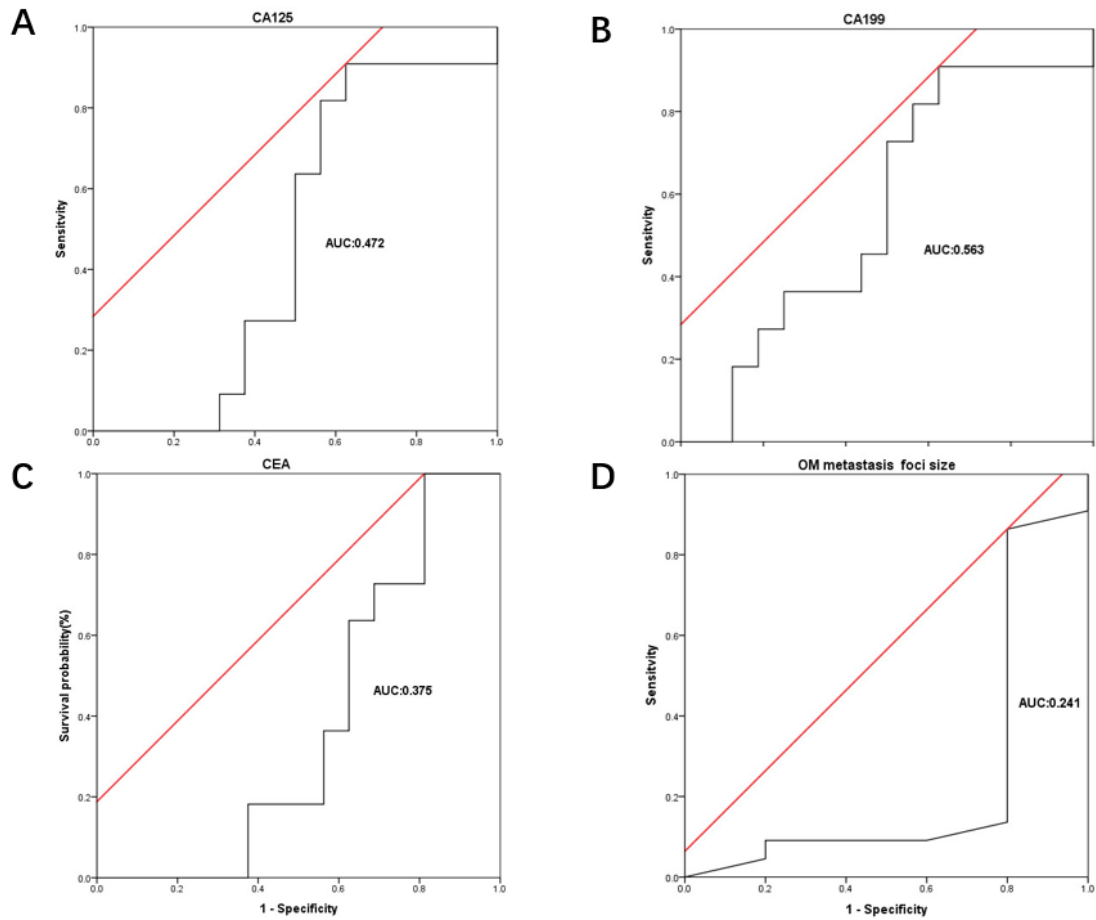
Variables	DFS			
	Univariate analysis HR(95%CI)	Pvalue	Multivariable analysis HR(95%CI)	Pvalue
Age	1.01 (0.97-1.05)	0.694		
Age(<45)	1.06 (0.29-3.88)	0.930		
Family history of cancer	0.79 (0.17-3.69)	0.767		
ECOG PS 0-1	2.46 (0.29-21.12)	0.412		
Primary lesion	0.39 (0.11-1.47)	0.165		
Oligotransfers	0.49 (0.16-1.53)	0.219		
Ascites	0.21 (0.05-0.89)	**0.034**	14.23 (2.31-87.86)	**0.004**
Peritoneal metastases	0.77 (0.25-2.44)	0.660		
CA125>26.1	2.94 (0.92-9.47)	**0.070**	0.35 (0.08-1.55)	0.167
CA199>7.3	2.03 (0.62-6.61)	0.240		
CEA>0.95	1.68 (0.44-6.37)	0.446		
CA125>35	1.56(0.52-4.66)	0.431		
CA199>37	2.03(0.54-7.61)	0.294		
CEA>5	3.01(0.86-10.53)	**0.085**	0.27 (0.05-1.40)	0.119
Metastasis of stomach cancer to the ovaries	1.06(0.97-1.15)	0.226		
Bilateral ovarian metastases	1.32(0.44-3.98)	0.618		
OM metastases foci size＜3.15				
OM metastases foci size＜5	0.39(0.12-1.33)	0.132		
Number of transfer sites				
1		0.731		
2		0.932		
3		0.934		
5		0.937		

ECOG PS，Eastern Cooperative Oncology organization physical status score; DFS, postoperative disease-free survival. Bold values in univariate analysis indicate P < 0.1 and were included in multivariate analysis; Bold values in multivariate analysis indicate P < 0.05, and the difference is statistically significant.

Supplementary TABLE 9 Univariate and multivariate analyses of OSAS independent factors in the direct surgery group.

Variables	OSAS			
	Univariate analysis HR(95%CI)	Pvalue	Multivariable analysis HR(95%CI)	Pvalue
Age	1.01(0.97-1.05)	0.736		
Age(<45)	1.24(0.34-4.62)	0.744		
Family history of cancer	1.42(0.30-6.66)	0.660		
ECOG PS 0-1	4.57(0.48-43.98)	0.188		
Primary lesion	0.43(0.12-1.54)	0.192		
Oligotransfers	0.75(0.26-2.17)	0.592		
Ascites	0.16(0.03-0.74)	**0.019**	0.04(0.01-0.34)	**0.003**
Peritoneal metastases	0.91(0.29-2.78)	0.872		
CA125>26.1	3.06(0.88-10.72)	**0.080**	5.55(0.09-39.16)	**0.046**
CA199>7.3	1.96(0.58-6.63)	0.279		
CEA>0.95	0.70(0.19-2.57)	0.593		
CA125>35	2.05(0.66-6.39)	0.215		
CA199>37	3.90(0.81-18.91)	0.091	1.24(0.15-10.59)	0.843
CEA>5	1.63(0.56-4.75)	0.372		
Metastasis of stomach cancer to the ovaries	1.08(0.99-1.18)	**0.090**	1.05(0.95-1.16)	0.399
Bilateral ovarian metastases	1.13(0.39-3.26)	0.827		
OM metastases foci size＜3.15				
OM metastases foci size＜5	0.59(0.19-1.85)	0.372		
Number of transfer sites				
1		0.962		
2		0.924		
3		9.922		
5		0.924		

ECOG PS，Eastern Cooperative Oncology organization physical status score; OSAS, time from surgical resection to patient death. Bold values in univariate analysis indicate P < 0.1 and were included in multivariate analysis; Bold values in multivariate analysis indicate P < 0.05, and the difference is statistically significant.

Supplementary Figure 1 Receiver operating characteristic curve. A: CA125; B: CA199; C: CEA; D: OM metrics foci size. AUC, area under the curve. OS, time from diagnosis of the primary lesion to death of the patient; OM, time from ovarian metastasis to patient death; DFS, disease-free survival; OSAS, time from surgical resection to patient death.