

Supplementary Material

Supplementary Table S1 Top 10 productive journals and co-cited journals in the field of Robot-assisted rectal cancer surgery

Rank	Journals	Count	Total citations	IF (2024)	JCR (2024)	Co-cited journals	Total citations	IF (2024)	JCR (2024)
1	Surgical Endoscopy	62	2398	2.7	Q1	Surgical endoscopy	2137	2.7	Q1
2	Journal of robotic surgery	35	233	3	Q1	Annals of surgery	1245	6.4	Q1
3	Diseases of the colon & rectum	35	633	3.7	Q1	Diseases of the colon & rectum	1073	3.7	Q1
4	International journal of colorectal disease	22	781	2.3	Q1	Annals of surgical oncology	705	4.3	Q2
5	Techniques in coloproctology	19	246	2.7	Q1	British journal of surgery	578	8.6	Q1
6	Asian journal of endoscopic surgery	19	49	0.9	Q4	International journal of colorectal disease	541	2.3	Q1
7	Annals of surgical oncology	14	1170	4.3	Q2	Colorectal disease	532	2.9	Q1
8	Colorectal disease	13	193	2.9	Q1	Jama-Journal of the American Medical Association	380	63.1	Q1
9	International Journal Of Medical Robotics And Computer Assisted Surgery	13	237	2.1	Q2	Lancet oncology	370	41.6	Q1
10	Annals of surgery	9	699	6.4	Q1	Techniques in Coloproctology	322	2.7	Q1

Supplementary Table S2 The top 10 prolific authors

Rank	Author	Country	Count	Citations	Citation per articles
1	Kinugasa, Yusuke	Japan	19	545	28.68
2	Shiomi, Akio	Japan	14	512	36.57
3	Kagawa, Hiroyasu	Japan	13	491	37.77
4	Pigazzi, Alessio	USA	10	1958	195.80
5	Huang, Ching-Wen	Singapore	9	75	8.33
6	Wang, Jaw-Yuan	Japan	9	75	8.33
7	Yamaguchi, Tomohiro	Japan	9	438	48.67
8	Choi, Gyu-Seog	South Korea	9	682	78.78
9	Su, Wei-Chih	Japan	8	67	8.38
10	Yamakawa, Yushi	Japan	8	379	43.38

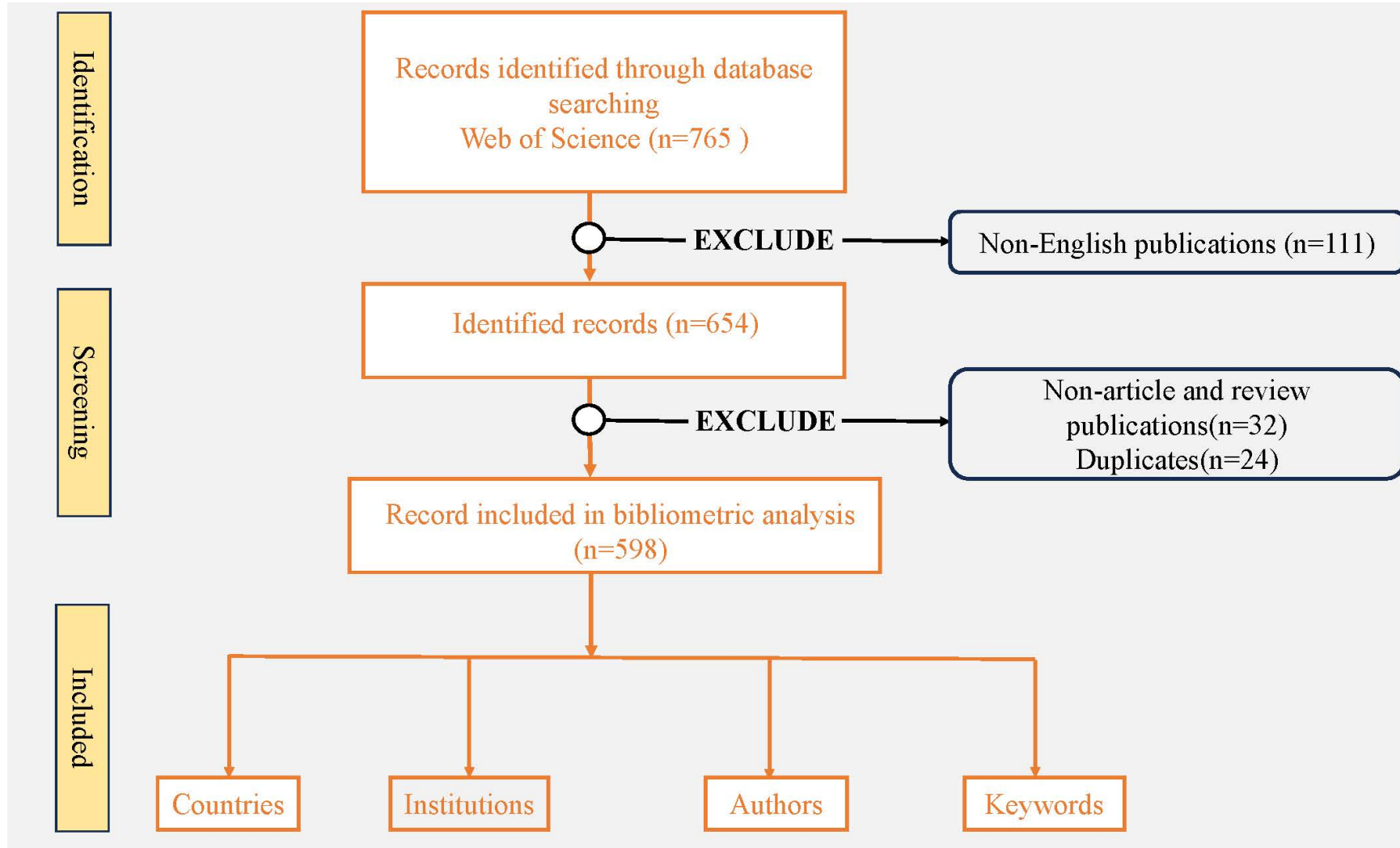
Supplementary Table S3 The top 10 co-cited references

Title	First author	Journal	IF (2025)	Year	Citations
Effect of Robotic-Assisted vs Conventional Laparoscopic Surgery on Risk of Conversion to Open Laparotomy Among Patients Undergoing Resection for Rectal Cancer: The ROLARR Randomized Clinical Trial	David jayne	The Journal of the American Medical Association	55	2017	170
Short term endpoints of conventional vs laparoscopic assisted surgery in patients with colorectal cancer (MRC CLASICC trial): multicentre, randomised controlled trial	Guillou PJ	The lancet	88.5	2005	109
Laparoscopic versus open surgery for rectal cancer (COLOR II): short-term outcomes of a randomised, phase 3 trial	Martijn HGM van der Pas	The lancet oncology	35.9	2013	103
Robotic versus laparoscopic low anterior resection of rectal cancer: short-term outcome of a prospective comparative study	Seung Hyuk Baik	Annals Of Surgical Oncology	3.5	2009	77
Classification of surgical complications: a new proposal with evaluation in a cohort of 6336 patients and results of a survey	Daniel Dindo	Annals Of Surgical Oncology	3.5	2004	76
Robot-assisted Versus Laparoscopic Surgery for Rectal Cancer: A Phase II Open Label Prospective Randomized Controlled Trial	Min Jung Kim	Annals Of Surgical Oncology	3.5	2018	75
Robotic-assisted laparoscopic low anterior resection with total mesorectal excision for rectal cancer	Alessio Pigazzi	Surgical endoscopy	2.7	2006	73
Effect of Laparoscopic-Assisted Resection vs Open Resection of Stage II or III Rectal Cancer on Pathologic Outcomes: The ACOSOG Z6051 Randomized Clinical Trial	James Fleshman	The Journal of the American Medical Association	55	2015	71
Telerobotic-assisted laparoscopic right and sigmoid colectomies for benign disease	Philip A Weber	Diseases Of The Colon & Rectum	3.7	2002	71
Robotic tumor-specific mesorectal excision of rectal cancer: short-term outcome of a pilot randomized trial	Seung Hyuk Baik	Surgical endoscopy	2.7	2008	67

Supplementary Table S4 The top 10 most frequent keywords

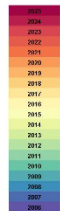
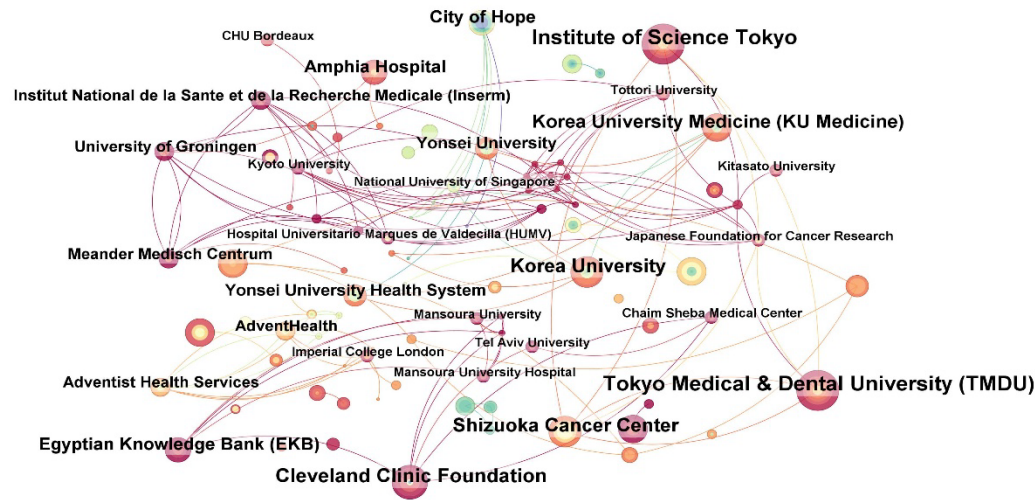
Rank	Keyword	Count	Centrality
1	Total mesorectal excision	201	0.12
2	Laparoscopic surgery	126	0.23
3	Short term outcome	81	0.01
4	Randomized controlled trials	61	0.07
5	Learning curve	57	0.10
6	Minimally invasive surgery	56	0.04
7	Pathological outcome	49	0.09
8	Multicenter	37	0.00
9	Complications	30	0.18
10	Survival	27	0.00

Supplementary Figure S1 Flowchart of literature selection

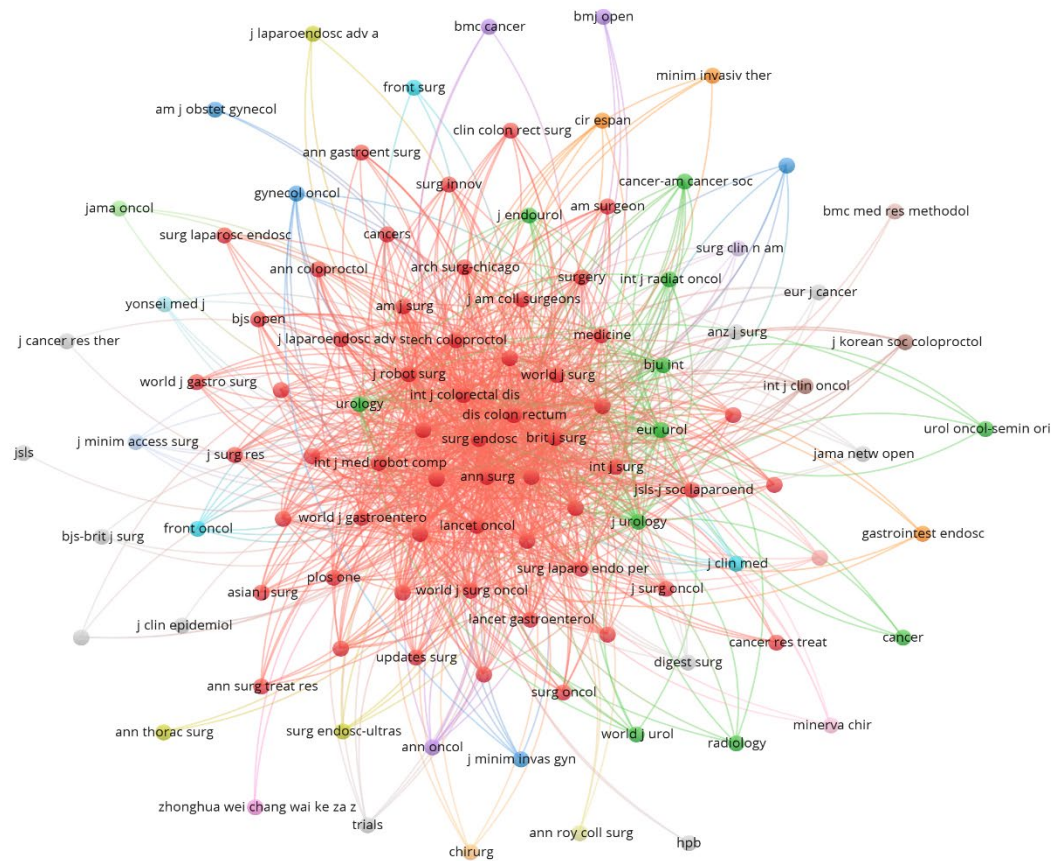


Supplementary Figure S2 Visualization of institutions related to Robot-assisted rectal cancer surgery. Cooperative network of publications between institutions. Institutions are presented by nodes. Partnerships are represented by lines. The node area increases with the number of publications. The colors represent different years

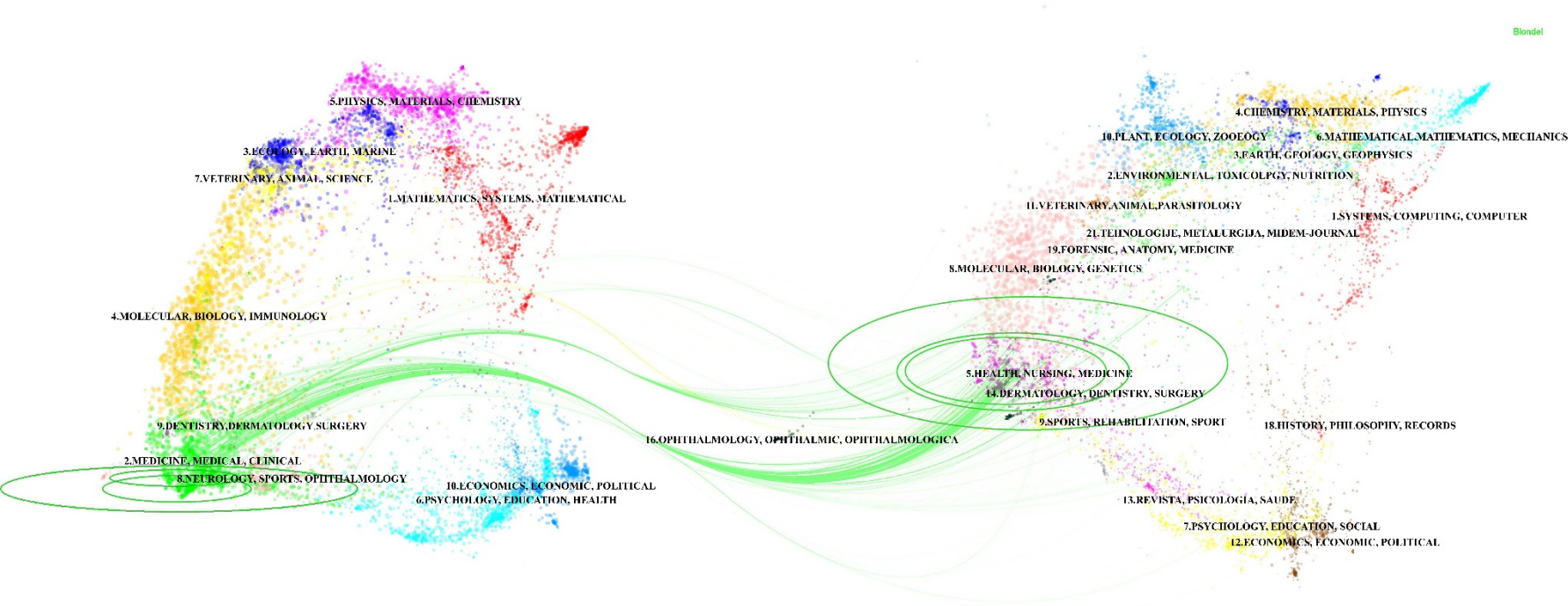
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 Network: N=197, E=239 (Density=0.0124)
 Largest 5 CCs: 61 (30%)
 Nodes Labeled: 1.0%
 Pruning: Pathfinder
 Modularity Q=0.7101
 Weighted Mean Silhouette S=0.8643
 Harmonic Mean(Q, S)=0.7796



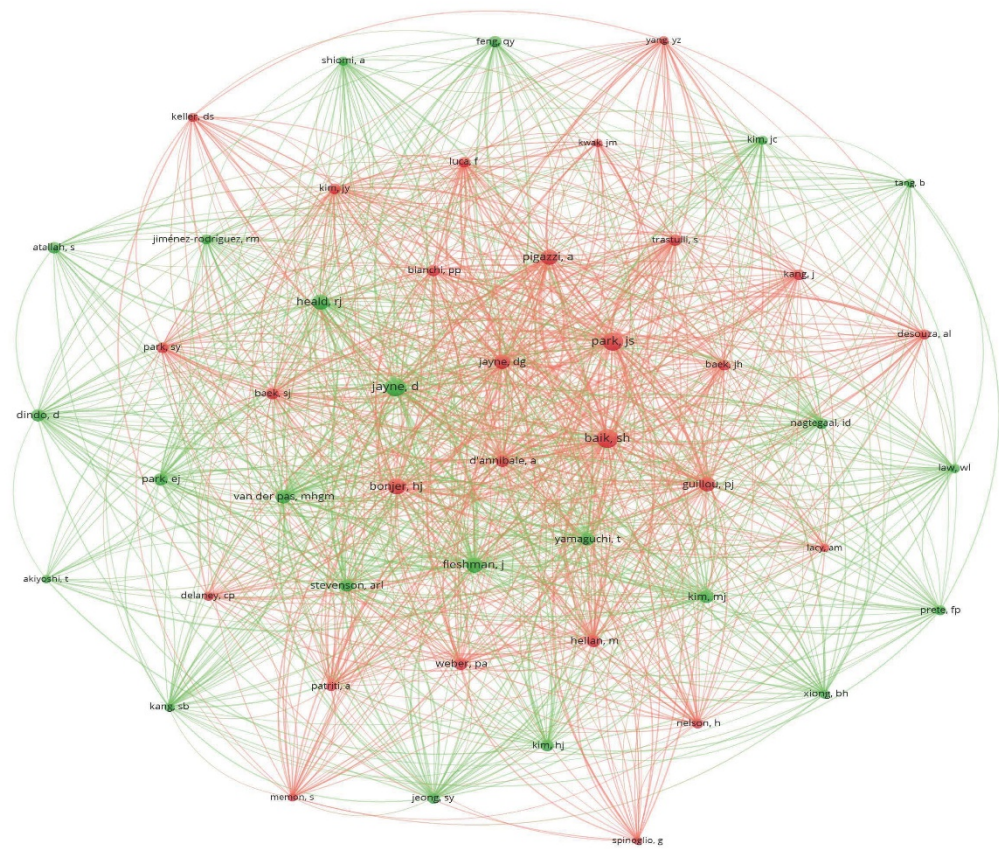
Supplementary Figure S3 The visualization network of co-cited journals related to Robot-assisted rectal cancer surgery. The nodes with the same color represent the same cluster, implying a close partnership. The larger the node's size or the width of the connecting line, the closer the relative degree of co-occurrence



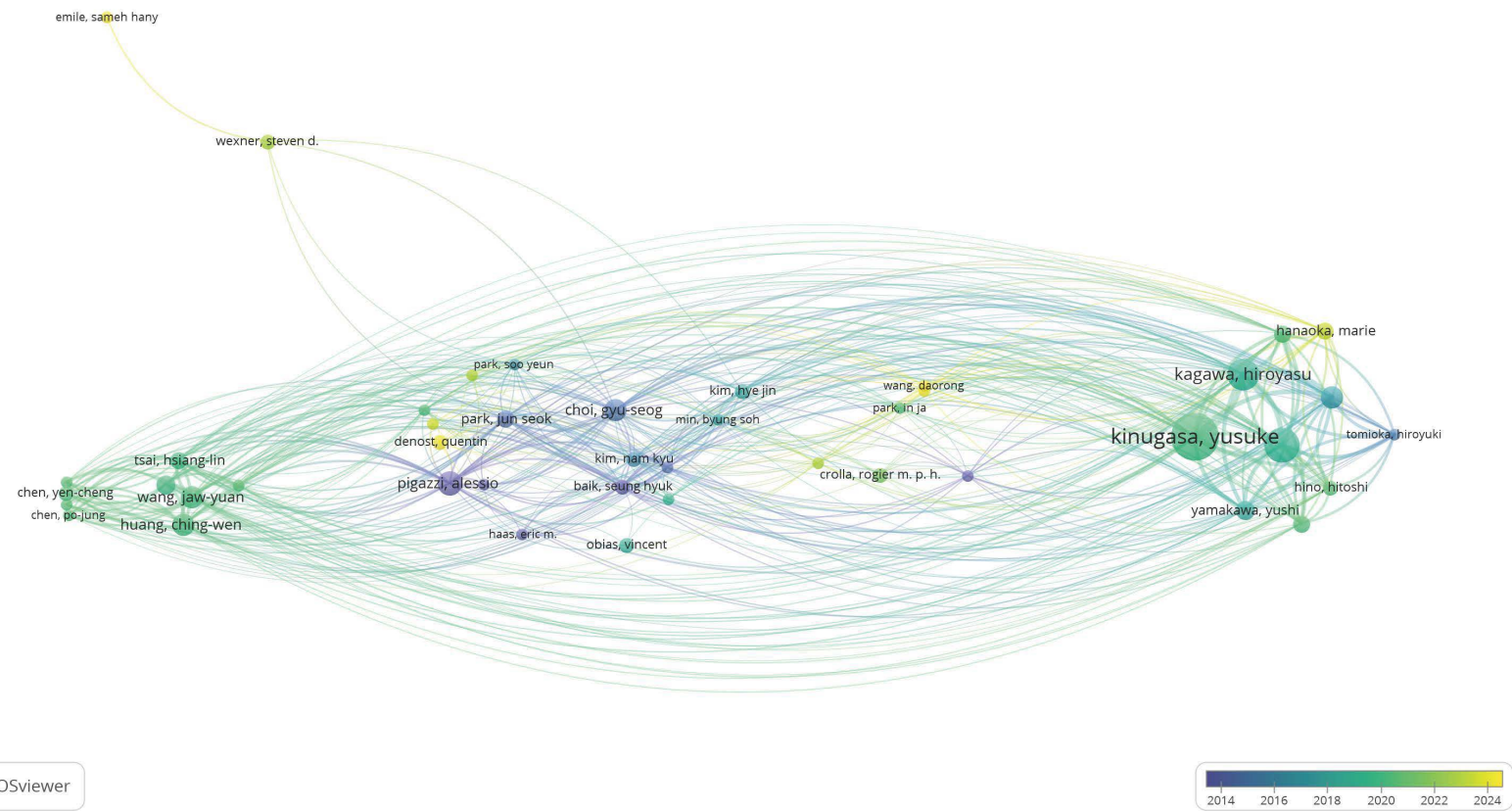
Supplementary Figure S4 A dual-map overlay of journals related to Robot-assisted rectal cancer surgery. Citing journals are on the left, and the cited journals are on the right, with colored paths indicating citation relationships



Supplementary Figure S5 Visualization of co-cited authors related to Robot-assisted rectal cancer surgery

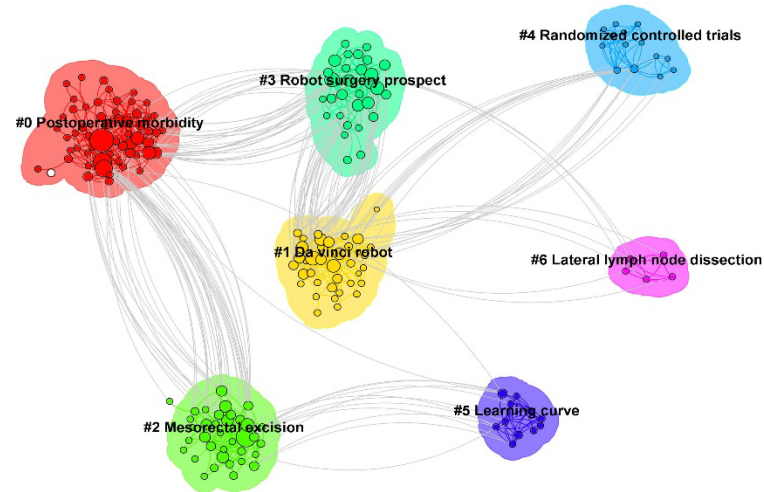


Supplementary Figure S6 A visualization of author citation analysis



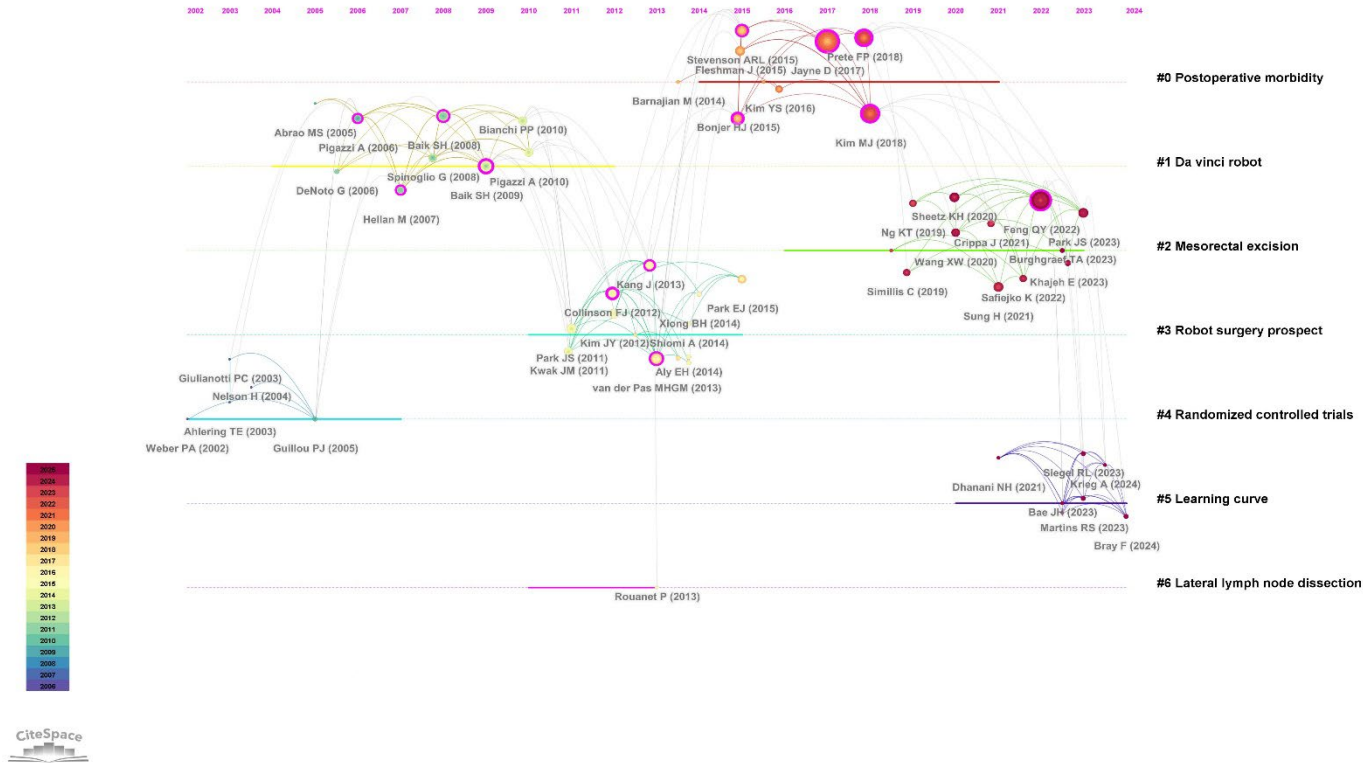
Supplementary Figure S7 Visualization of co-cited references related to Robot-assisted rectal cancer surgery

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 Selection Criteria: g-index (k=4), LRF=3.0, L/N=10, LB=5, e=1.0
 Network: N=291, E=508 (Density=0.6452)
 Largest S.CCs: 199 (99%)
 Nodes Labeled: 1.0%
 Pruning: None
 Modularity Q=0.8187
 Weighted Mean Silhouette S=0.8937
 Harmonic Mean(Q, S)=0.7312



Supplementary Figure S8 Timeline view of co-cited references related to Robot-assisted rectal cancer surgery. The position of the node on the horizontal axis represents the time when the reference first appeared. The size of the node is related to the number of co-cited references. Lines between nodes represent co-cited relationships

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 Timespan: 2006-2025 (Slice Length=1)
 Selection Criteria: g-index (k=4), LRF=3.0, L/N=10, LBY=5, e=1.0
 Network: N=201, E=908 (Density=0.0452)
 Largest S.C.C.: 199 (99%)
 Nodes Labeled: 1.0%
 Pruning: None
 Modularity Q=0.6187
 Weighted Mean Silhouette S=0.8937
 Harmonic Mean(Q, S)=0.7312



Supplementary Figure S9 Timeline view of keywords related to Robot-assisted rectal cancer surgery. The position of the node on the horizontal axis represents the time when the reference first appeared. The size of the node is related to the number of co-cited references. Lines between nodes represent co-cited relationships

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 Network: N=158, E=312 (Density=0.0177)
 Nodes Labeled: 1.0%
 Pruning: Pathfinder
 Modularity Q=0.7101
 Weighted Mean Silhouette S=0.8643
 Harmonic Mean(Q, S)=0.7796

