FIGURE 1 | Flow diagram of study selection.

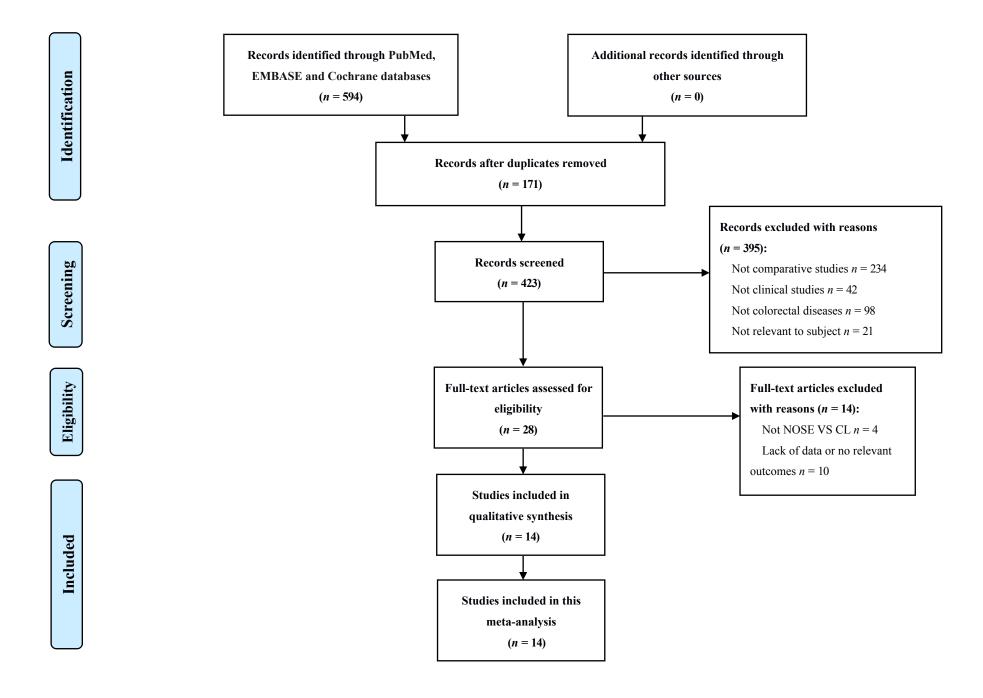


FIGURE 2 | Risk of bias of randomized controlled trials assessed with the Cochrane Risk of Bias tool.

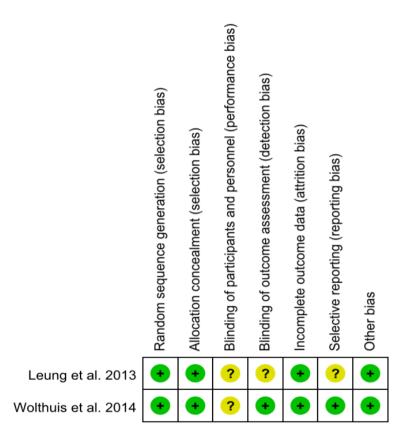


FIGURE 3

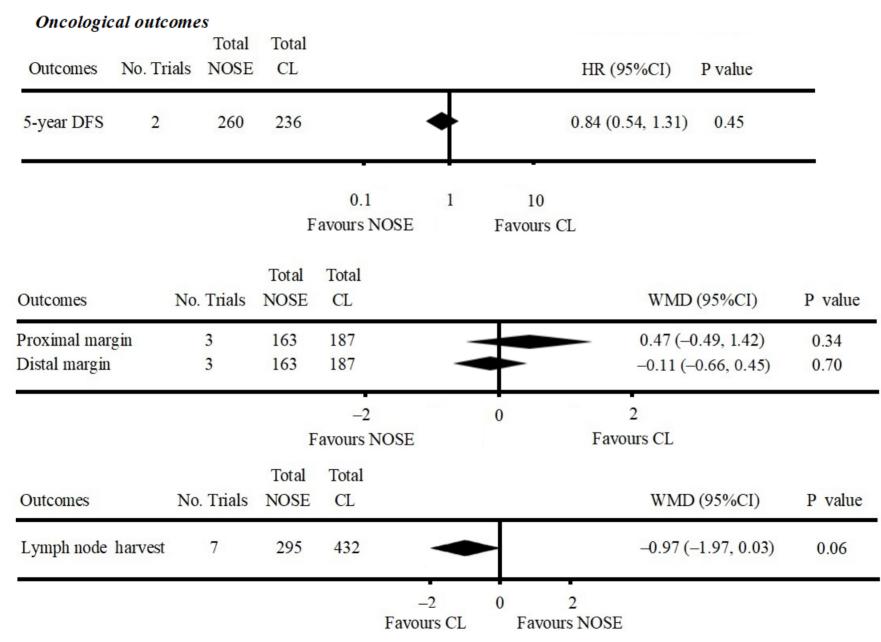


FIGURE 3 | Forest plot of oncological outcomes following natural orifice specimen extraction (NOSE) compared with conventional laparoscopic (CL) surgery.

FIGURE 4

Surgical outcomes

	Events/Total		Events/Total				
Outcomes	No. Trials	NOSE	CL			OR (95%CI)	P value
Surgical site infection	7	1/369	30/439	•		0.15 (0.05, 0.42)	< 0.001
Anastomotic leakage	6	14/383	22/436	•		0.71 (0.36, 1.38)	0.31
Intra-abdominal abscess	3	3/230	2/230	-	>	1.34 (0.30, 6.05)	0.70
Perioperative complications	12	97/609	162/708	•		0.56 (0.41, 0.75)	< 0.001
				0.1 1	10		
			Favour	s NOSE	Favours CL		

Outcomes	No. Trials	Total NOSE	Total CL		V	VMD (95%CI)	P value
Blood loss	7	378	515	•	-12.2	23 (-29.35, 4.90)	0.16
				50 0	50 Favours CL		

FIGURE 4 | Forest plot of surgical outcomes following NOSE compared with CL.

FIGURE 5

Outcomes	No. Trials	Total NOSE	Total CL	WMD (95%CI)	P value
Hospital stay	12	518	657	-0.56 (-1.09, -0.04)	0.03
Pain score	5	190	265	-1.42 (-1.94, 0.90)	< 0.001
Time to first flatus	5	262	353 ♦	-0.57 (-0.70, -0.44)	< 0.001
			-2 0 2 Favours NOSE Favours CL		
Outcomes	No. Trials	Total NOSE	Total CL	WMD (95%CI)	P value
Operation time	12	518	657	17.34 (6.14, 28.54)	0.002
			–50 0 50 Favours NOSE Favours CL		

FIGURE 5 | Forest plot of other outcomes following NOSE compared with CL.

FIGURE 6



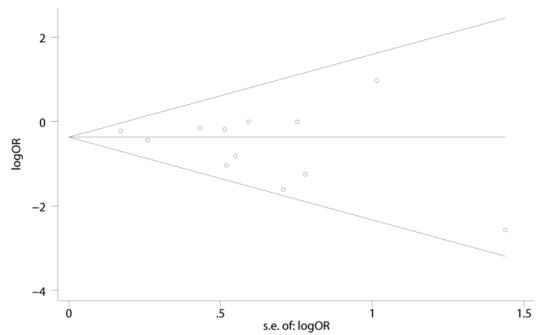


FIGURE 6 | Funnel plot of publication bias based on total perioperative complications (Begg's test, *P*=0.373).