## Appendix 1 Search strategy

**PubMed (Medline)** - searched 17 August 2023

(coronary artery bypass[Title/Abstract]) AND ((robot[Title/Abstract]) OR (robotic[Title/Abstract]) OR (robot assisted[Title/Abstract]) OR (RA-MIDCAB[Title/Abstract]) OR (TECAB[Title/Abstract]) OR (totally endoscopic[Title/Abstract]))

**Embase** - searched 18 August 2023

1.  *coronary artery bypass graft/
2.  *heart muscle revascularization/
3.  *robotics/ or *robot assisted surgery/
4.  robot* assisted midcab.mp.
5.  tecab.mp.
6.  totally endoscopic.mp.
7.  1 or 2
8.  3 or 4 or 5 or 6
9.  7 and 8
10. limit 9 to (full text and human and English language)

**Cochrane Central Register of Controlled Trials (CENTRAL)** - searched 18 August 2023

#1 MeSH descriptor: [Coronary Artery Bypass] explode all trees
#2 MeSH descriptor: [Robotic Surgical Procedures] explode all trees
#3 midcab
#4 tecab
#5 #1 and (#2 or #3 or #4)

**Appendix 2** Quality assessment using the modified Canadian National Institute of Health Economics (CNIHE) quality appraisal checklist for case series

| Author, year | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Total | Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lo, 2023 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | Moderate |
| Jonsson, 2023 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | High |
| Torregrossa, 2022 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 14.5 | Moderate |
| Gofus, 2022 | 1 | 0 | 0 | 1 | 1 | 0.5 | 1 | 1 | 0 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | Moderate |
| Piperata, 2022 | 1 | 0 | 0 | 0 | 1 | 0.5 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 13.5 | Moderate |
| Varrone, 2022 | 0.5 | 0 | 0 | 1 | 1 | 0.5 | 1 | 1 | 0 | 0.5 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 13 | Moderate |
| Cheng, 2021 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 15 | Moderate |
| Patrick, 2021 | 1 | 0 | 1 | 0 | 1 | 1 | 0.5 | 0 | 0 | 0 | 1 | 1 | 1 | 0.5 | 0 | 1 | 0.5 | 1 | 0.5 | 11 | Low |
| Wu, 2019 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16.5 | High |
| Giambruno, 2018 | 0.5 | 0 | 0 | 0 | 0.5 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 0.5 | 0 | 0.5 | 1 | 1 | 0 | 11 | Low |
| Pasrija, 2018 | 1 | 0 | 1 | 1 | 1 | 0.5 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 0.5 | 0 | 0.5 | 1 | 1 | 0.5 | 14.5 | Moderate |
| Roubelakis, 2017 | 0.5 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 14 | Moderate |
| Sabashnikov, 2014 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0.5 | 14.5 | Moderate |
| Bayramoglu, 2014 | 1 | 0 | 0 | 0 | 1 | 0.5 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14.5 | Moderate |
| Fujita, 2014 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0.5 | 0 | 0.5 | 1 | 1 | 1 | 12 | Moderate |
| Ishikawa, 2014 | 1 | 0 | 0 | 1 | 0.5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0.5 | 0 | 1 | 1 | 1 | 0 | 11 | Low |
| Leyvi, 2014 | 1 | 1 | 0 | 1 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 15.5 | Moderate |
| Turner, 2006 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0.5 | 1 | 0 | 1 | 1 | 0 | 11.5 | Moderate |
| Derose, 2005 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 16 | High |
| Falk, 2000 | 1 | 0 | 0 | 0 | 0.5 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 10.5 | Low |
| Balkhy, 2022 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 14 | Moderate |
| Balkhy, 2020 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 16.5 | High |
| Stastny, 2018 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0.5 | 16 | High |
| Zaouter, 2015 | 1 | 0 | 0 | 0 | 0.5 | 1 | 0.5 | 1 | 1 | 0.5 | 1 | 1 | 0.5 | 0.5 | 0 | 0 | 1 | 1 | 0 | 11 | Low |
| Dhawan, 2012 | 1 | 0 | 0 | 0 | 1 | 0.5 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 13 | Moderate |
| Jegaden, 2011 | 0.5 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0.5 | 12 | Moderate |
| Srivastava, 2010 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0.5 | 14.5 | Moderate |
| de Cannière, 2007 | 1 | 0 | 1 | 0 | 0.5 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 15 | Moderate |
| Mishra, 2006 | 0.5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 0 | 1 | 1 | 0.5 | 1 | 1 | 0 | 11.5 | Moderate |
| Argenziano, 2006 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 17 | High |
| Al-Mulla, 2022 | 1 | 0 | 0 | 1 | 1 | 0.5 | 1 | 0 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0 | 0.5 | 1 | 1 | 1 | 13.5 | Moderate |
| Cerny, 2021 | 0.5 | 0 | 1 | 0 | 0.5 | 0 | 0.5 | 0.5 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 0.5 | 1 | 1 | 1 | 11 | Low |
| Yokoyama, 2021 | 0.5 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 0 | 1 | 1 | 0.5 | 11.5 | Moderate |
| Whellan, 2016 | 1 | 0 | 1 | 0 | 1 | 0.5 | 1 | 0.5 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 0 | 12.5 | Moderate |

**Appendix 2** (*continued*)

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| Author, year | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Total | Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cavallaro, 2015 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 0 | 12.5 | Moderate |
| Casula, 2014 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0.5 | 13 | Moderate |
| Currie, 2012 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 14 | Moderate |
| Folliguet, 2010 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 16 | High |
| Mishra 2007 | 0.5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 10.5 | Low |

**Modified Canadian National Institute of Health Economics (CNIHE) quality appraisal checklist**

Q1. Was the hypothesis/aim/objective of the study clearly stated?
Q2. Was the study conducted prospectively?
Q3. Were the cases collected in more than one centre?
Q4. Were patients recruited consecutively?
Q5. Were the characteristics of the patients included in the study described?
Q6. Were the eligibility criteria (i.e., inclusion and exclusion criteria) for entry into the study clearly stated?
Q7. Did patients enter the study at a similar point in the disease?
Q8. Was the intervention of interest clearly described?
Q9. Were additional interventions (co-interventions) clearly described?
Q10. Were relevant outcome measures established a priori?
Q11. Were the relevant outcomes measured using appropriate objective/subjective methods?
Q12. Were the relevant outcome measures made before and after the intervention?
Q13. Were the statistical tests used to assess the relevant outcomes appropriate?
Q14. Was follow-up long enough for important events and outcomes to occur?
Q15. Were losses to follow-up reported?
Q16. Did the study provided estimates of random variability in the data analysis of relevant outcomes?
Q17. Were the adverse events reported?
Q18. Were the conclusions of the study supported by results?
Q19. Were both competing interests and sources of support for the study reported?