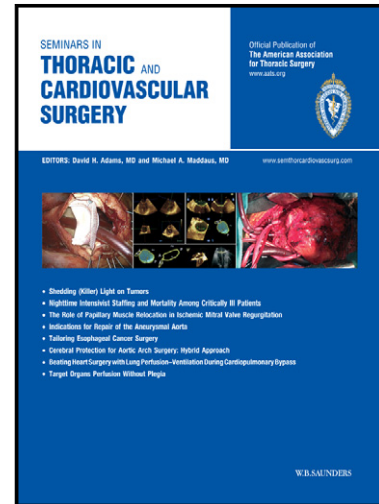


The Use of Robotic-Assisted Thoracic Surgery for Lung Resection: A Comprehensive Systematic Review

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PII: S1043-0679(16)00018-6
DOI: <http://dx.doi.org/10.1053/j.semtcvs.2016.01.004>
Reference: YSTCS817

To appear in: *Semin Thoracic Surg*

Cite this article as: J. Agzarian MD, MPH, C. Fahim PhD(c), MSc, Y. Shargall MD, K. Yasufuku MD, PhD, T.K. Waddell MD, PhD, MSc, W.C. Hanna MDCM, MBA, The Use of Robotic-Assisted Thoracic Surgery for Lung Resection: A Comprehensive Systematic Review, *Semin Thoracic Surg*, <http://dx.doi.org/10.1053/j.semtcvs.2016.01.004>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

TITLE PAGE

Title: The Use of Robotic-Assisted Thoracic Surgery for Lung Resection: A Comprehensive Systematic Review

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Funding: The authors have no sources of funding to declare

Conflict of Interest Statement: The authors have no conflicts of interest to declare

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ABSTRACT

Objective: The primary objective of this study is to systematically review all pertinent literature related to robotic assisted lung resection (RATS).

Methods: RATS case series, and studies comparing RATS to Video-Assisted Thoracoscopic Surgery (VATS) or thoracotomy were included in the search. In accordance with PRISMA guidelines, two independent reviewers performed the search and review of resulting titles and abstracts. Following full-text screening, a total of 20 articles met the inclusion criteria and are presented in the review. Amenable results were pooled and presented as a single outcome, and meta-analyses were performed for outcomes having more than 3 comparative analyses.

Results: Data are presented in four categories: Technical Outcomes, Perioperative Outcomes, Oncological Outcomes, and Cost Comparison. RATS was associated with longer operative time, but did not result in a greater rate of conversion to thoracotomy than VATS. RATS was superior to thoracotomy and equivalent to VATS for the incidence of prolonged air leak and hospital length of stay. Oncological outcomes such as nodal upstaging and survival were no different between VATS and RATS. RATS was more costly than VATS, with the majority of costs attributed to capital and disposable expenses of the robotic platform.

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