

A Systematic Literature Review of the Use of Robotic Surgical Procedures in Thyroid Neoplasms

Răzvan-Alexandru CIOCAN^a, Ariana-Anamaria CORDOȘ^{b,*}, Andra CIOCAN^c

^a Department of Surgery - Practical Abilities, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Marinescu Str., no. 23, 400337 Cluj-Napoca, Romania

^b Romanian Society of Medical Informatics, 300041 Timișoara, Romania

^c Department of Surgery - Surgery III, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Croitorilor Str., no. 19–21, 400162 Cluj-Napoca, Romania

E-mails: Razvan.Ciocan@umfcluj.ro; Ariana.cordos@gmail.com; Andra.Ciocan@umfcluj.ro

* Author to whom correspondence should be addressed; Tel.: +40 745 438 078

Abstract

Background and Aim: The incidence of thyroid cancer has increased worldwide during the last decade, being one of the most common endocrine malignancies. Surgical resection, namely conventional thyroidectomy, remains at the frontline of therapy, Minimally invasive techniques gained popularity through the years. The purpose of this systematic review was to understand the most common techniques and to evaluate the outcomes of minimally invasive techniques. *Materials and Methods:* A literature search was conducted on 20 August 2023 using two MeSH terms: “Robotic Surgical Procedure” and “Thyroid Neoplasms” using PICO-TS and PRISMA Statements. The results were narrowed to the articles available in full text. *Results:* A total of 31 items were retained. The article’s titles and abstracts were screened and nine articles were removed as five articles were reviews, two articles were case reports, one was a letter to the editor and one was describing the impact of augmented reality. Remaining 22 articles to analyze the content. *Conclusion:* This study found that the most used minimally invasive thyroid surgical techniques are robotic transaxillary thyroidectomy and robotic thyroidectomy by bilateral axillo-breast approach. From the systematic review, it can be concluded that for selected patients (well-differentiated thyroid carcinoma), these modern techniques are not inferior to standard of care and are a safe alternative, with the advantage of avoiding a potentially disfiguring scar in the neck, when performed by surgeons who are familiar with and experienced in endoscopic and robotic techniques.

Keywords: Thyroid Neoplasms; Minimally invasive techniques; Robotic surgical procedure; Thyroidectomy

