

# INPLASY PROTOCOL

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None declared.

## Perioperative management of dumbbell-shaped retrosternal goiters: our experience and a scoping review

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**Review question / Objective:** 1) What evidence is available regarding the management of CMGs in adults? 2) How can we manage the difficult airway of CMGs in adults? 3) Which surgical procedures are preferred, and how can we manage the potential complications?

**Condition being studied:** Cervical mediastinal goiters (CMG) can lead to dysfunction of the respiratory and circulatory systems. Surgical removal of it can be very challenging. However, standard guidelines for the management of huge CMG are presently absent. A scoping review was conducted to discuss the perioperative management of CMG to provide a theoretical basis for clinical practice.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 November 2022 and was last updated on 24 November 2022 (registration number INPLASY2022110124).

### INTRODUCTION

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provide a theoretical basis for clinical practice.

## METHODS

**Search strategy:** Two authors searched the PubMed, Embase, Web of Science, and Scopus databases for studies published between 2012.01.01 and 2022.07.27. Search terms are 'substernal goiter' or 'intrathoracic goiter' or 'retrosternal goiter' or 'mediastinal goiter' or 'thyroid goiter'.

**Participant or population:** One patient diagnosed with dumbbell-shaped retrosternal goiter in the second hospital of Dalian medical university will be addressed. Others were extracted from published literatures meet the following criterions: 1)age over 18 years old; 2)patients diagnosed with cervical mediastinal goiter; 3)surgery performed with extracervical approach; 4)patients who meet difficult intubation; 5)other treatments to cure the cervical mediastinal goiter.

**Intervention:** No intervention.

**Comparator:** No comparator.

**Study designs to be included:** Retrospective studies, prospective studies, case series, case reports or other studies meet inclusion and exclusion criteria.

**Eligibility criteria:** The inclusion criteria were as follows: (1) age over 18 years old; (2) articles about perioperative management of CMGs; (3) English literature; and (4) goiter or noninvasive malignant carcinoma contained within the thyroid gland. The exclusion criteria were the following: (1) duplicate; (2) proceeding paper, poster, or book; (3) lacking clinical features; (4) intrathoracic goiter; (5) invasive malignant thyroid cancer; and (6) surgery performed only through the cervical incision.

**Information sources:** Electronic databases including PubMed, Embase, Web of Science, and Scopus databases.

**Main outcome(s):** 1. The majority of included studies were performed in Asia and Europe. 2. There are four different definitions of CMG in the past decade. 3. Preoperative CT scans and MDT support is important to CMG patients. 4. Close cooperation with the anesthesia team for airway management. 5. Location, shape, nature, and size of cervical mediastinal goiter may play an important role in the extracervical approach as well as complications in surgery.

**Quality assessment / Risk of bias analysis:** Quality assessment and risk of bias analysis were not needed in scoping review.

**Strategy of data synthesis:** Based on the methodology of the scoping review, the data were presented in an overview, without data analysis, to provide a quick review reference for clinical treatment decisions. We only collected basic characteristics of included studies including date of publication, time span, number of patients, country of study and design of the study. Information about patients including age, sex, CT findings, surgical approach, anesthesia, pathology, treatment, and complications were extracted and summarized.

**Subgroup analysis:** Not done.

**Sensitivity analysis:** Not done.

**Language restriction:** English only.

**Country(ies) involved:** China.

**Keywords:** dumbbell-shaped retrosternal goiter; cervico-mediastinal goiter; combined cervicothoracic approach; VATS; case report; scoping review.

### Contributions of each author:

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