

Benign Ovarian Teratomas in Females aged 5-21

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Abstract

Background: It is unclear on the extent of research done on benign teratomas.

Methods: Scoping review conducted in accordance with the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews). Three electronic databases were used to compile lists of primary research studies published in English that investigated female patients aged 5 to 21 years with benign ovarian teratomas in clinical settings. A standardized data charting form was developed and piloted on 29 articles.

Results: 335 articles were extracted from the three databases with search terms; abstract screening via Rayyan revealed 36 relevant studies whose abstracts accomplished all inclusion criteria. Full-text data extraction revealed 29 studies published between 1983 and 2024 were analyzed in this scoping review.

Conclusions: Variation in management protocols and lack of follow up highlights the need for further study in optimal follow-up protocols, better diagnostic criteria and imaging modalities. Overall, the results of this scoping review suggest the need for further research into benign ovarian teratomas.

Introduction

Benign ovarian teratomas are among the most common ovarian neoplasms in pediatric and adolescent females. Although typically benign, they may present with complications such as torsion or mass effect requiring surgical management. Management is nuanced in patients aged 5–21 years, where fertility preservation is a key consideration. This review evaluates presentation, diagnosis, management, and outcomes in this population.

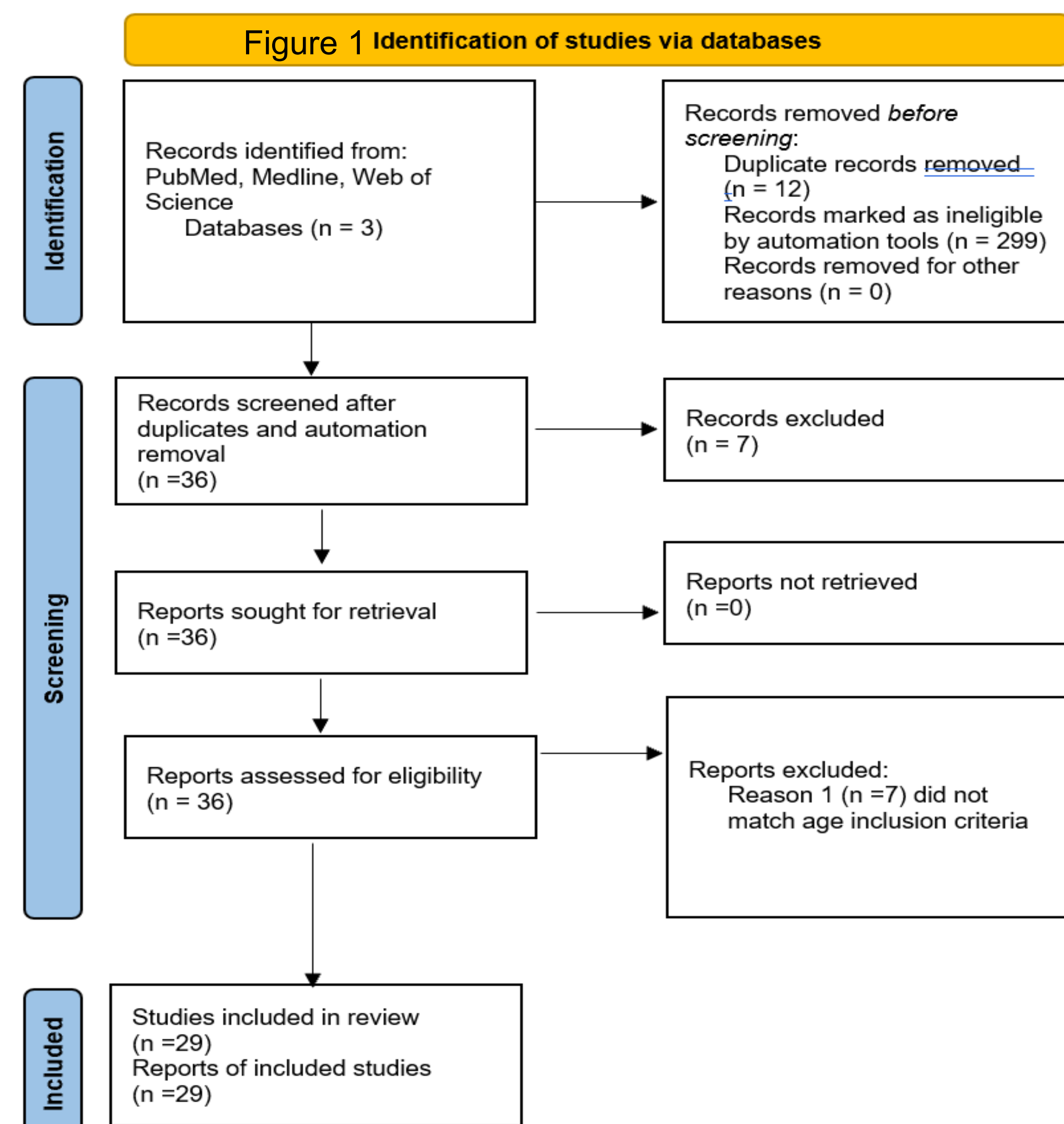
Rationale

Despite numerous studies on ovarian teratomas, there is limited synthesis focused on benign cases in females aged 5–21 years. This review aims to evaluate incidence, management, complications, and outcomes in this population.

Objectives

1. Identify and synthesize existing literature on benign ovarian teratomas in females aged 5-21.
2. Identify existing evidence of incidence, management, complications, follow-up and recurrence.
3. Highlight gaps in the current evidence to inform future studies and guideline development.

Methods



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi:10.1136/bmj.n71

Study Design & Framework:

Scoping review conducted in accordance with **PRISMA-ScR guidelines** and the Arksey & O'Malley framework, with refinements by Levac and Tricco.

Eligibility Criteria:

Inclusion: Primary research studies, Female patients ages 5–21 years, Benign ovarian teratomas, Clinical settings, English language

Exclusion: Malignant teratomas, Non-ovarian or male patients, Case reports without review, Studies with significant comorbidities or trauma, Non-primary research (reviews, editorials)

Information Sources & Search Strategy

Databases: **PubMed, Ovid MEDLINE, Web of Science** (figure 1)

Search terms included: *ovarian teratoma, adolescents, clinical trial, randomized control trial*

No restriction on publication year or geographic location.

Grey literature excluded.

Study Selection Process: Records uploaded into **Rayyan**. Duplicates removed (automated + manual). **Two independent reviewers** screened titles/abstracts and full texts. Discrepancies resolved by discussion or **third reviewer** (figure 1)

Data Charting: A standardized extraction form was used to collect: Study characteristics (design, sample size), Patient presentation, Diagnostic methods, Surgical management, Fertility preservation, Outcomes and follow-up, Limitations and knowledge gaps (figures 1,2,3,4)

Data Synthesis: Data summarized in **tabular format by study type and outcomes- Full data extraction available above** (figure 4)

Narrative synthesis: To identify patterns in presentation, management, and outcomes (figure 4)

Study Yield:

335 records identified

36 studies met inclusion criteria after abstract screening

29 studies (1983–2024) included in final analysis

Figure 2 Reporting of Fertility Preservation (n=33)

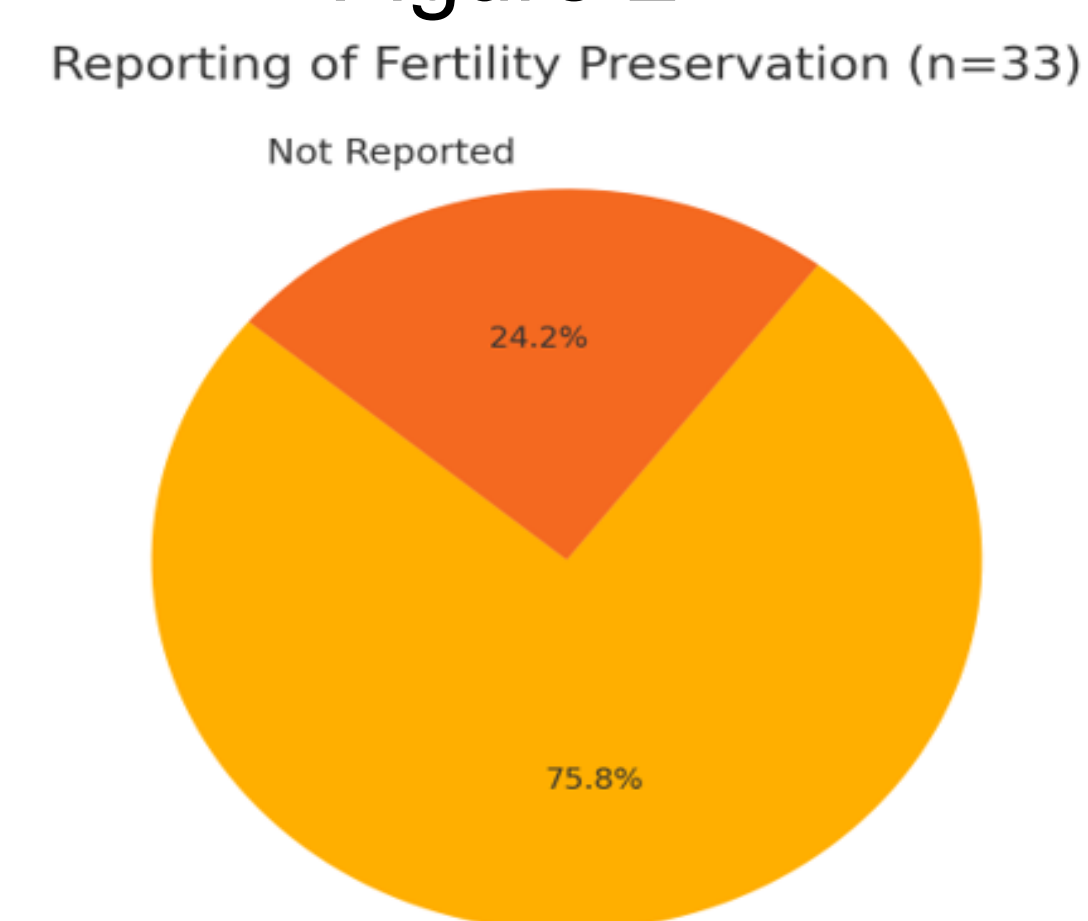


Figure 3 Reporting of Surgical Management (n=33)

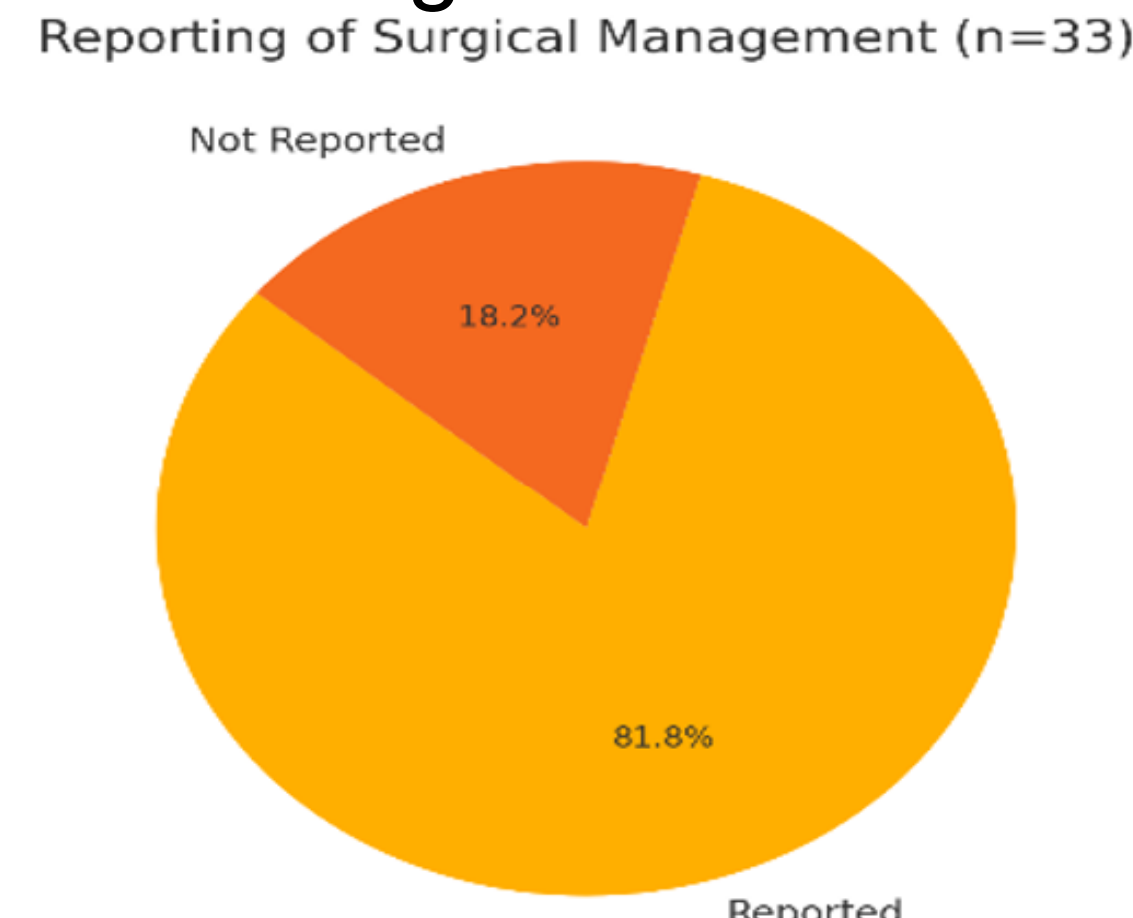


Figure 4



Discussion

Study Characteristics

Most studies were retrospective cohorts, with additional case series and observational studies. Study designs and clinical approaches were heterogeneous.

Presentation & Diagnosis

Common presentations included abdominal pain, palpable masses, and incidental imaging findings. Ultrasound was the primary diagnostic modality, with CT/MRI and tumor markers used adjunctively.

Management

Surgical intervention was the primary treatment. Laparoscopic ovarian cystectomy was most common. Oophorectomy was performed in more extensive cases.

There was a strong trend toward ovarian-sparing approaches.

Fertility Preservation

Fertility outcomes were discussed in **75.8% of studies**.

Ovarian-sparing procedures were associated with preserved ovarian function, return of menstruation, and documented pregnancies.

Outcomes

Overall outcomes were favorable, with low complication and recurrence rates.

Key Findings & Limitations

KEY FINDINGS

Ovarian-sparing surgery is safe and effective. Minimally invasive techniques preserve fertility. Conservative surgical management is increasingly favored.

Recurrence rates are low.

LIMITATIONS

Predominantly retrospective study designs. Small sample sizes. Limited long-term follow-up. Lack of standardized diagnostic criteria.

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