

INPLASY

Perinatal outcome of intrauterine interventions for fetal sacrococcygeal teratoma based on different surgical techniques – a systematic review

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ADMINISTRATIVE INFORMATION

Support - University of Miami Miller School of Medicine.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420102

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 February 2024 and was last updated on 23 February 2024.

INTRODUCTION

Review question / Objective This study aims to evaluate the outcomes of fetal sacrococcygeal teratoma (SCT) submitted to prenatal interventions.

Condition being studied We included cases with SCT who were prenatally diagnosed following fetal surgery or without fetal intervention. Types of fetal surgeries included were classified as open surgery or percutaneous interventions.

METHODS

Search strategy Sources used for data collection were PubMed and Google Scholar. Papers referencing sacrococcygeal teratomas were viewed from the inception of these database.

The search was conducted using the following terms: "sacrococcygeal teratoma" AND "fetal intervention" OR "fetal surgery" OR "open surgery" OR "in utero treatment" OR "fetal therapy" OR "RFA" OR "laser ablation" OR "ablation" OR "coagulation" OR "thermocoagulation" OR "radiofrequency" OR "embolization" OR "coiling" OR "sclerosis" OR "alcohol").

Cases without fetal intervention were located using the term "fetal sacrococcygeal teratoma," and the timeframe of papers included ranged from 2014 to 15 September 2023. The reference lists of relevant articles were reviewed manually, with duplicate cases excluded, and eligible studies were added to the results from the electronic literature search..

Participant or population We included cases with SCT who were prenatally diagnosed with no exclusions based on ethnicity or age.

Intervention Types of fetal surgeries included were classified as open surgery or percutaneous interventions; percutaneous interventions were defined as procedures to shrink the tumors, such as laser ablation, radiofrequency ablation, thermocoagulation, embolization, and sclerosis..

Comparator We reviewed the literature to compare the prognosis of SCT cases following open fetal surgery or percutaneous intervention to fetuses that did not have any fetal intervention.

Study designs to be included The literature we deemed eligible for inclusion included case reports, cohort or case-control studies.

Eligibility criteria Types of fetal surgeries included were classified as open surgery or percutaneous interventions; percutaneous interventions were defined as procedures to shrink the tumors, such as laser ablation, radiofrequency ablation, thermocoagulation, embolization, and sclerosis. Articles and studies that described procedures such as tumor cyst puncture, amnioreduction, and fetal transfusion during SCT management were excluded, as their intention was not to reduce tumor size.

Information sources Sources used for data collection were PubMed and Google Scholar. Papers referencing sacrococcygeal teratomas were viewed from the inception of these databases until September 15th, 2023.

Main outcome(s) The gestational weeks at delivery could affect the prognosis of sacrococcygeal teratoma cases regardless of the necessity of fetal intervention.

Additional outcome(s) We could consider percutaneous intervention in severe cases, including early diagnosis of large tumor size, fetal hydrops, or fetal cardiac failure detected early in the gestational period.

Quality assessment / Risk of bias analysis Two independent reviewers completed the screening process.

Strategy of data synthesis The chi-square test was used to analyze categorical variables, and the t-test or Mann-Whitney test was used to analyze continuous variables as required. Significance was defined as $p < 0.05$. Statistical analysis was performed using R Ver 4.1.0.

Subgroup analysis We have not done meta-analysis.

Sensitivity analysis We have not done meta-analysis.

Language restriction We included the literature in English.

Country(ies) involved the United States, Brazil, Italy, Japan.

Keywords Sacrococcygeal teratoma; fetal tumors; prenatal diagnosis; ultrasound; fetal surgery; fetal inter-vention.sacrococcygeal teratoma, fetal intervention, fetal open surgery, percutaneous intervention.

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