

Is 4-Duct Ligation Better than 2-Duct Ligation for Anterior Drooling? A Systematic Review

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INTRODUCTION

- **Chronic sialorrhea:** prevalent and disabling condition leading to serious psychosocial and health ramifications in affected individuals.
- **Anterior drooling:** visible spillage of saliva from the oral cavity, wetting the mouth and chin and soiling clothing.
- **Anterior sialorrhea:** common in young children
- **Surgical procedures** to correct sialorrhea: tympanic neurectomy, salivary gland excision, duct relocation, and duct ligation.
- **Duct ligation:** simple, effective, and minimally invasive treatment modality for the management of sialorrhea

OBJECTIVE

- Assess the efficacy of 2-duct ligations (2-DL) and 4-duct ligations (4-DL) in treating anterior drooling, as well as report on potential complications of the two procedures.

METHODS

- **Literature Search:**
 - **Systematic Review:** CINAHL, Pubmed, and Embase databases from inception to December 13, 2022.
 - **Screening** by three independent reviewers
- **Inclusion criteria:** analysis of both the success rate and associated complications of 2-DL or 4-DL as an independent treatment strategy for anterior drooling.
- **Data collection:** success rate, complication rate, and reported complications.
- **Descriptive statistics and quantitative analysis**

RESULTS

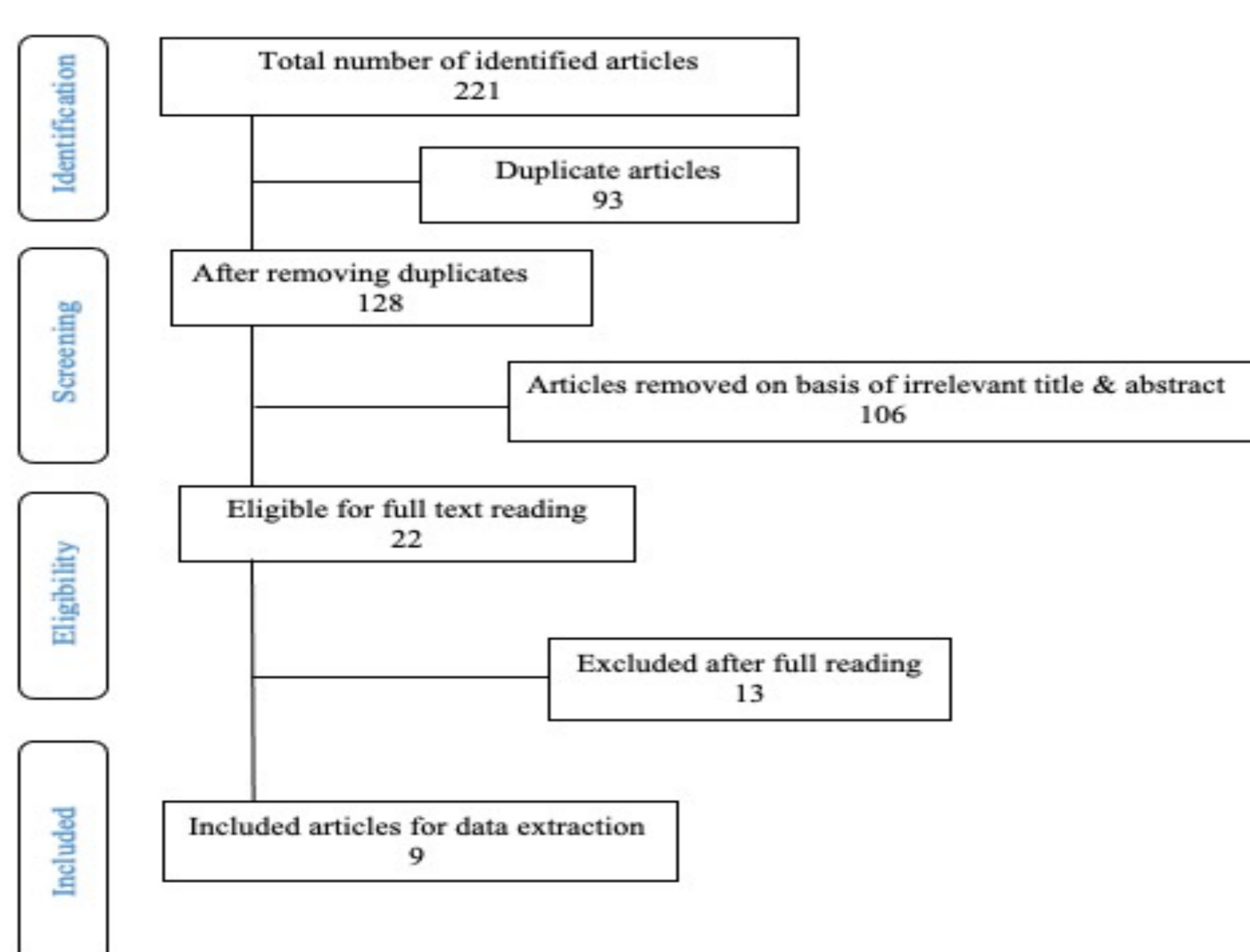


Figure 1: PRISMA flow chart for included and excluded studies

RESULTS (continued)

- 221 articles screened, 9 studies fulfilled inclusion criteria
 - 4 studies investigated 2-DL in 138 patients
 - 5 studies addressed 4-DL in 117 cases.

Table 1. Adverse Events Rate of Occurrence

Adverse Events Rate of Occurrence	2-Duct Ligation (N=138)	4-Duct Ligation (N=117)
Ranula	11%	10%
Infection	30%	38%
Bleeding	4%	3%
Dryness	15%	3%
Pain and Swelling	20%	31%
Anesthesia Complications	17%	15%
Other	2%	0%

Table 2. Success and Complication Rates

	2-Duct Ligation (N=138)	4-Duct Ligation (N=117)
Success rates	61%	74%
Complication rates	29%	25%

MAIN FINDINGS

- Each approach offers distinct advantages and disadvantages:
 - 4-DL requires only one anesthetic procedure.
 - 2-DL might need an extra ligation procedure if initial relief is lacking.
 - 4-DL reports a higher infection rate.
 - 2-DL causes less pain and swelling, but has increased dryness risk compared to 4-DL.

CONCLUSION

- Duct ligation is an effective and safe intervention for patients with chronic anterior drooling.
- There are advantages and disadvantages to both 4 and 2 duct ligations.
- Overall, choosing a surgical approach is specific to a patient's condition and preferences.
- More research needs to be conducted to definitively compare the two interventions.

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REFERENCES

