



Endoscopic versus Microsurgical Resection of Colloid Cysts: A Systematic Review

Ahmed Sheikh; Zachary S. Mendelson BS; James K. Liu MD
Rutgers University, New Jersey Medical School



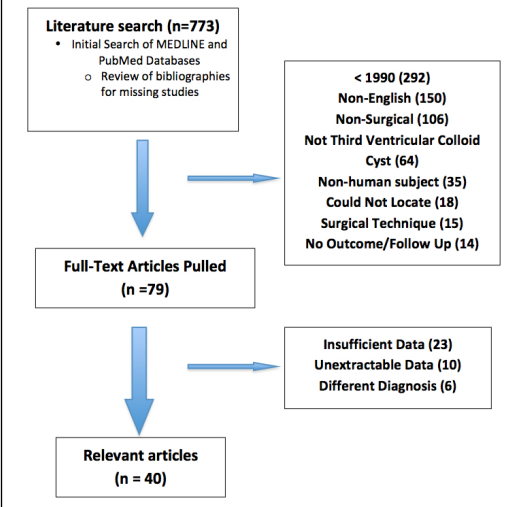
Introduction

Colloid cysts of the third ventricle are benign tumors that have been successfully treated via transcranial microsurgical approaches for decades. The advent of the endoscope has recently allowed for a newer, less invasive approach, however, the literature has yet to show which of the two approaches is more superior. The aim of this study was to better delineate the differences between the two treatments, by investigating short and long-term outcomes of both endoscopic and open microsurgical approaches via a systematic review.

Methods

The authors conducted a systematic review of published studies on colloid cyst resection from 1990 to 2013. Cases were selected using a MEDLINE/PubMED search, as well as, from subsequent inspection of the references from articles found in the initial search. Relevant articles reporting management of colloid cysts with detailed short and long-term outcomes were identified. Data were extracted concerning patient demographics, presenting symptoms, cyst characteristics, surgical treatment, extent of resection, and outcomes.

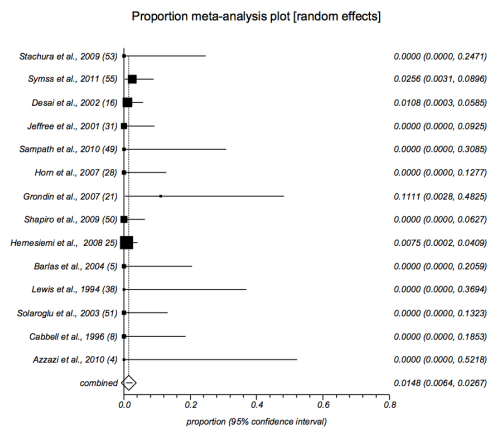
PRISMA Flow diagram of identified, excluded, and included studies used in the systemic review



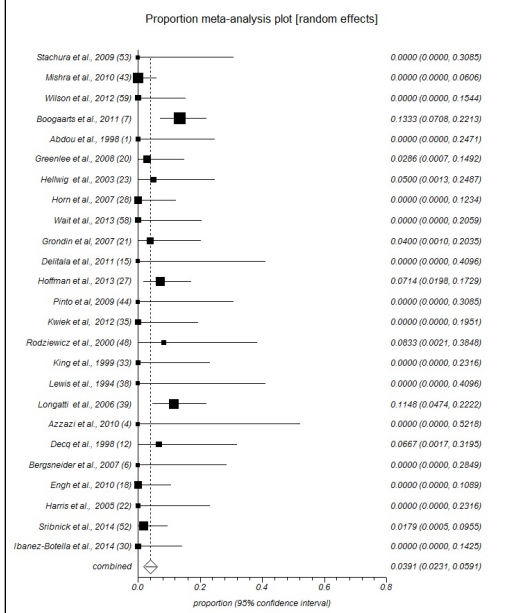
Results

A meta-analysis was performed for recurrence rates based on treatment. Seventeen articles with a total of 590 patients were included in the microsurgical group with a recurrence rate of 1.45%, 20 articles with a total of 520 patients were included in the endoscopic group with a recurrence rate of 4.82%. The microsurgical approach was found to have a significantly higher gross-total resection rate (93.96% versus 60.7%, $P < 0.0001$) and lower recurrence rate (1.45% versus 4.82% $P < 0.0001$). The microsurgical group also had a significantly lower reoperation rate (0.4% vs. 3.9%, $P < 0.0001$) with no significant difference in mortality rate (1.2% vs. 0.4%) or shunt dependency (4.9% vs. 3.5%).

Forrest Plot of Microsurgical Recurrence Rates



Forrest Plot of Endoscopic Recurrence Rates



Conclusions

Overall, microsurgical resection of colloid cysts remains the most effective treatment due to a higher rate of resection, decreased rate of recurrence, and fewer reoperations than with endoscopic removal. The rate of mortality and shunt dependency is similar between both groups.

Learning Objectives

By the conclusion of this session, participants should be able to:

- 1) Describe the differences in the microsurgical versus endoscopic technique for resection of colloid cysts
- 2) Determine the differences in rates of gross total resection and recurrence for both surgical techniques
- 3) Discuss the rate of mortality and shunt dependency after colloid cyst resection for both modalities.

References

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2. Bergsneider M: Complete microsurgical resection of colloid cysts with a dual-port endoscopic technique. *Neurosurgery* 60:ONS33-42; discussion ONS42-33, 2007
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