

# Endoscopic Versus Transcallosal Excision of Colloid Cysts: a Meta-Analysis of 962 patients in the Era of Complete Endoscopic Excision

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## Introduction

Colloid cysts are histologically benign epithelial-lined tumors typically found posterior to the foramen of Monro in the roof of the third ventricle. Transcallosal microscopic and endoscopic excision are both well established approaches for this lesion; however, there has been no clear consensus regarding the favored approach. Here, we performed a meta-analysis comparing the two approaches for colloid cyst excision.

## Methods

We performed a meta-analysis from 2000-2018 of patients undergoing colloid cyst excision via a microscopic transcallosal or endoscopic approach where complete excision of the cyst wall and its contents was the surgical intent. Studies that included head to head comparison of approaches were included if the reported results were stratified by approach.

## Results

Overall, the microsurgical transcallosal approach had a higher rate of gross total resection when compared to endoscopic excision (96% for transcallosal vs 80% endoscopic;  $p < 0.0001$ ). There was also a lower recurrence rate with the transcallosal approach (0.98% vs 2.16%;  $p = 0.0036$ ), however, there was no difference in reoperation rates with similar length of follow-up (0.33% transcallosal, 0.61% endoscopic;  $p = 1.000$ ). Endoscopy had lower overall morbidity rates when compared to transcallosal approaches (7.9% vs 16.3%;  $p = 0.0046$ ), including statistically significant lower rates of infection, infarct, and seizures in the endoscopic cohort. Rates of permanent memory deficit were similar (6.3% transcallosal vs 4.6% endoscopic;  $p = 0.244$ ). Finally, shunt dependency was 9.8% after transcallosal excision vs 3.5% after endoscopic excision, a difference that was statistically significant ( $p = 0.0002$ ).

## Conclusions

Modern series of colloid cyst excision continue to favor transcallosal approaches in achieving gross total resection. However, endoscopic techniques have significantly reduced morbidity compared to transcallosal approaches, including lower rates of infection, infarct and seizure. Endoscopic approaches also have a statistically significant decreased rate of shunt dependency, arguably the most important primary endpoint of surgery. With improving endoscopic technology and mastery of the technique, endoscopic excision is maturing into the standard first-line approach for colloid cyst excision.

## Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of approach to colloid cyst excision rate and morbidity, 2) Discuss the risks and benefits of various approaches for colloid cyst excision, and 3) Identify an effective treatment strategy for colloid cyst excision based on individual patient risk factors

## References

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