Title of the manuscript:

Outcomes and Efficacy of Neuroendoscopic Resection of Intraventricular Tumors: A Systematic Review and Meta-Analysis

Journal: Neurosurgical Review

Authors:

Muhammad Talha Khan [1] mtalhakhan@kemu.edu.pk , Undergraduate medical student

Arham Khalid Farooq [1] arhamkhalid@kemu.edu.pk, Undergraduate medical student

Bardia Hajikarimloo [2] Bardii47@yahoo.com, Postdoctoral Research fellow

Shafin bin Amin [3] shafin10th@gmail.com, Postgraduate resident

Sara M. Darawish [4]drawyshsart@gmail.com, Undergraduate medical student

Mohammed Huzaifa Khalid [1] mhuzaifakhalid@kemu.edu.pk ,Undergraduate medical student

Tooba Adil [5] tooba.adil@jsmu.edu.pk , Postgraduate Student

Elaf Ahmed Basha [6] elafbasha44@gmail.com, Undergraduate medical student

Hamza Abid[1] hamzaabid@kemu.edu.pk , Undergraduate medical student

Affiliations:

[1] King Edward Medical University, Lahore, Pakistan

[2] Department of Neurosurgery, University of Virginia, Charlottesville, VA, USA

[3] Jinnah Postgraduate Medical Center, Karachi, Pakistan

[4]Al-Quds University, Faculty of Medicine, Jerusalem, Palestine

[5] Jinnah Sindh Medical University, Karachi, Pakistan

[6] Faculty of Medicine and Health Sciences, Omdorman Islamic University, Khartoum, Sudan

Corresponding Author:

Muhammad Talha Khan

King Edward Medical University, Lahore, Pakistan

mtalhakhan@kemu.edu.pk

ORCID:0009-0005-5375-4046

JBI Critical Appraisal Summary Table for all 27 studies

Author et al.	Q1: Clear Inclusion Criteria	Q2: Standard Measurement	Q3: Valid Methods	Q4: Consecutive Inclusion	Q5: Complete Inclusion	Q6: Clear Demographics	Q7: Clear Clinical Info	Q8: Clear Outcomes	Q9: Clear Site Info	Q10: Appropriate Statistics	Decision
Samadian et al. (2018)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	✅ Include
Nazari Maloumeh et al. (2021)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	✅ Include
Verducci et al. (2024)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Torres-Corzo et al. (2018)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	❌ No	☑ Yes	❌ No	✅ Include
Tawk et al. (2020)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❌ No	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❌ No	✅ Include
Shahrestani et al. (2020)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	❌ No	☑ Yes	❌ No	✅ Include
Arnaout & Elsamman (2021)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❌ No	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❌ No	✅ Include
Greco et al. (2022)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	☑ Yes	☑ Yes	✅ Include
Isaacs et al. (2020)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Boogaarts et al. (2011)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include

Sankhla et al. (2023)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	❌ No	❓ Unclear	☑ Yes	✅ Include
Eshra (2018)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	❌ No	❌ No	☑ Yes	✅ Include
Yan et al. (2023)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	❌ No	☑ Yes	☑ Yes	✅ Include
Vorbau et al. (2019)	❌ No	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	❌ No	❌ No	☑ Yes	☑ Yes	❓ Unclear	❌ Exclude
Dhandapani et al. (2021)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Ibáñez-Botella et al. (2024)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	✅ Include
Iacoangeli et al. (2014)	❌ No	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	❌ No	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Seek Further Info
Lara-Reyna et al. (2020) - Study 18	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Lara-Reyna et al. (2020) - Study 19	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Roth et al. (2022)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Ebel et al. (2021)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❌ No	✅ Include
Koutourousio	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include

u et al. (2013)											
Margetis et al. (2014)	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	❌ No	☑ Yes	✅ Include
Raouf & Zidan (2015)	❓ Unclear	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	❌ No	☑ Yes	☑ Yes	❌ No	N/A	❌ Exclude
Ibáñez-Botella et al. (2019)	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	❌ No	N/A	✅ Include
Qiao et al. (2025) - Study 26	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include
Qiao et al. (2025) - Study 27	☑ Yes	☑ Yes	☑ Yes	❓ Unclear	❓ Unclear	☑ Yes	☑ Yes	☑ Yes	☑ Yes	☑ Yes	✅ Include

Summary Statistics

Decision	Count	Percentage
✅ Include	24	88.9%
❌ Exclude	2	7.4%
❓ Seek Further Info	1	3.7%
Total	**27**	**100%**

JBI Critical Appraisal Checklist for Case Series

Study 1: Colloid Cyst of the Third Ventricle: Long-Term Results of Endoscopic Management in a Series of 112 Cases

Authors: Samadian M, Ebrahimzadeh K, Nazari Maloumeh E, et al.

Journal: World Neurosurgery 2018; 111:e440-e448

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: consecutive patients with third ventricular colloid cyst treated by endoscopic surgery between 2003-2015. All had CT, MRI, and histologic confirmation.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all patients had preoperative CT scan, MRI, and histologic confirmation of diagnosis. Standard endoscopic technique described.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods used: CT scan, MRI, and histologic confirmation for all cases. Diagnosis based on established imaging criteria and pathological verification.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Study explicitly states "112 consecutive patients" treated between 2003-2015 at single institution.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Authors indicate all consecutive patients with colloid cysts during study period were included. No mention of excluded cases.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographic data provided: age, sex, mean ages by gender (76 male, 36 female; ages 6 months to 87 years).

7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: presenting symptoms, neurological status, imaging findings, surgical approach, cyst characteristics (type 1 vs type 2 classification).
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting: complete vs partial resection rates (92% vs 8%), complications, mortality (1.7%), recurrence (3.5%), follow-up imaging results.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Study conducted at single center: Loghman Hakim Hospital, Tehran, Iran. Geographic and institutional context clearly described.
10. Was statistical analysis appropriate?	☐	☐	☑	☐	Limited statistical analysis. Mainly descriptive statistics (percentages, means). No inferential statistics or significance testing. Could have benefited from more robust analysis comparing outcomes by cyst type or patient characteristics.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 2: Fourth Ventricular Tumors using Telovelar Approach

Study: Surgical management of the fourth ventricular tumors using telovelar approach and the role of neuroendoscopy: Post-operative outcome and long-term results in a series of 52 cases

Authors: Nazari Maloumeh E, Jalili Khoshnoud R, Ebrahimzadeh K, et al.

Journal: Clinical Neurology and Neurosurgery 2021; 201:106419

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: consecutive patients with fourth ventricular tumors undergoing telovelar approach between 2012-2019. All had CT, MRI, and detailed clinical history.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized diagnostic approach: all patients had CT scan, MRI, and detailed clinical assessment. Diagnosis established based on clinical signs, symptoms, and imaging.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: CT, MRI, clinical examination, and surgical findings. Diagnosis based on established imaging criteria and intraoperative findings.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Study explicitly states "52 consecutive patients" treated between 2012-2019 at single institution.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Authors indicate all consecutive patients with fourth ventricular tumors during study period were included. No exclusions mentioned.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographic data: age, sex, mean ages by gender (32 male, 20 female; ages 4-76 years, mean 26.4 years).
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: tumor histology, extension patterns, surgical technique details, use of neuroendoscopy in rostral tumors.

8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting: total vs subtotal resection rates (94% vs 6%), complications, mortality (2%), recurrence (4%), mean follow-up 3 years.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single center study: Loghman Hakim Hospital, Tehran, Iran. Institutional context clearly described.
10. Was statistical analysis appropriate?	☐	☐	☑	☐	Limited statistical analysis. Mainly descriptive statistics (percentages, means). No comparison of outcomes between different tumor types or surgical approaches.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 3: The surgical management of third ventricle region tumors

Authors: Verducci C, Sloane DC, Hand R, Choe S, Jusue-Torres I, et al.

Journal: Clinical Neurology and Neurosurgery 2024; 246:108564

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: all patients undergoing surgical intervention on tumors in or encroaching upon the third ventricle at single institution between 1986-2021. Excluded cases with incomplete data (absent operative reports, lack of imaging, unknown pathology).
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized measurement approach: extent of resection assessed by consistent team of 3 neuroradiologists/neurosurgeons through postoperative MRI review in blinded fashion. Primary outcome (KPS) systematically recorded.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: surgical intervention with histopathological confirmation where appropriate. Radiologic assessment by qualified specialists. Well-established imaging criteria for third ventricle region tumors.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Study states "all patients" during study period but doesn't explicitly use term "consecutive." Large timespan (1986-2021) raises questions about complete capture of all eligible cases.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Authors mention exclusions for incomplete data but don't provide specific numbers excluded or reasons why data was incomplete for those cases. Unclear if all eligible patients were captured.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographic reporting: 97 patients, 46 (47.4%) female, median age 39 years (Q1=22, Q3=51), follow-up averaging 41

					months. Well-detailed patient characteristics.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical information: presenting symptoms, tumor pathology, surgical approach, extent of resection, complications, repeat surgeries. Detailed breakdown of surgical techniques and approaches.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting: primary outcome KPS at pre-op and most recent follow-up. Secondary outcomes including complications, need for CSF diversion, mortality. Statistical analysis of outcomes by surgical technique and extent of resection.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single tertiary care center: Loyola University Medical Center. Academic medical center context clearly described. Long study period allows assessment of technique evolution.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	**Strength of this study:** Comprehensive statistical analysis including univariate and multivariate proportional odds and logistic regression. Appropriate adjustment for confounders (preoperative KPS, age, operation number). Proper handling of ordinal outcomes.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 4: Flexible Neuroendoscopic Diagnosis and Management of Ventricular Tumors: A Retrospective Cohort Study

Authors: Torres-Corzo JG, Islas-Aguilar MA, Cerecedo-López CD

Journal: World Neurosurgery 2018; 118:e707-e712

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: pediatric and adult patients with paraventricular or intraventricular tumors treated with flexible neuroendoscopy between 1999-2017. Excluded terminally ill patients and those with incomplete data.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all procedures performed by single neurosurgeon-in-chief using consistent flexible neuroendoscopy technique. Pathologic diagnosis obtained through standard tissue sampling (4-6 fragments).
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: MRI and CT for surgical planning, histopathologic analysis for tumor diagnosis. Well-established imaging and endoscopic visualization techniques.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Study doesn't explicitly state "consecutive" patients. States "48 patients who underwent flexible neuroendoscopy" during study period but unclear if all eligible patients were included consecutively.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Authors mention excluding patients with incomplete data and terminally ill patients but don't specify how many were excluded or provide denominator of all potential cases.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: 48 patients (52% male, 48% female), mean age 20.45 years (±18.65 SD), includes both pediatric and adult patients.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: tumor location, pathologic diagnosis, hydrocephalus status, endoscopic procedures performed, complications. Good breakdown of surgical techniques.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☑	☐	☐	**Major limitation:** Limited outcome reporting. Reports immediate diagnostic success (83.3%) and short-term hydrocephalus control (100% at 1 month) but acknowledges "shortcomings in follow-up compliance" - no long-term outcomes reported.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single center: Hospital Central Dr. Ignacio Morones Prieto, Mexico. Academic medical center context described. 18-year institutional experience.
10. Was statistical analysis appropriate?	☐	☑	☐	☐	**Major limitation:** Only descriptive statistics provided (frequencies, percentages, means). No inferential statistics, confidence intervals, or comparative analyses performed. Very basic statistical approach.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 5: Endoscopic Transforaminal Transchoroidal Approach to the Third Ventricle for Cystic and Solid Tumors

Authors: Tawk RG, Akinduro OO, Grewal SS, Brasiliense L, Grand W, Grotenhuis A

Journal: World Neurosurgery 2020; 134:e453-e459

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients who underwent endoscopic transcranial procedures using ETTC approach for third ventricle lesions between 2005-2018 at 3 tertiary academic facilities. All used rigid 6-mm working endoscope.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all procedures performed using ETTC technique by senior surgeons. All patients had preoperative thin-slice MRI. Consistent endoscopic technique described with step-by-step methodology.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: preoperative MRI imaging, intraoperative endoscopic visualization, histopathologic confirmation where appropriate. Well-established imaging and surgical criteria.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Study doesn't explicitly state "consecutive" patients. States they "included patients who underwent endoscopic transcranial procedures" but unclear if all eligible patients during study period were included.
5. Did the case series have complete inclusion of participants?	☐	☑	☐	☐	**Major limitation:** Authors explicitly state that 2 patients were excluded because procedures "could not be completed from a single burr hole" but don't provide total denominator of attempted cases

					or details about other potential exclusions.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: 13 patients (7 women, 6 men), mean age 44 years (SD 16), range of tumor pathologies clearly described. Detailed patient characteristics in table format.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical detail: tumor types, sizes, procedures performed, complications, follow-up outcomes. Comprehensive table with individual patient data. Two detailed illustrative cases provided.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting: extent of resection (complete in 7, near-complete in 4, biopsy in 2), complications, recurrence rates, follow-up data. Mean follow-up 44 months (SD 36, range 9-121 months).
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Multi-center study: 3 tertiary academic facilities described. Senior surgeon experience noted (A.G., R.G.T., W.G.). Academic medical center context clear.
10. Was statistical analysis appropriate?	☐	☑	☐	☐	**Major limitation:** Only descriptive statistics provided (means, standard deviations, percentages). No inferential statistics, confidence intervals, or comparative analyses. Very limited statistical approach for case series.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 6: Pure Endoscopic Supracerebellar Infratentorial Approach to the Pineal Region: A Case Series

Authors: Shahrestani S, Ravi V, Strickland B, Rutkowski M, Zada G

Journal: World Neurosurgery 2020; 137:e603-e609

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: adult patients (≥18 years) with pineal lesions who underwent pure endoscopic SCIT surgery between 2012-2019. All procedures performed by single senior author.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all procedures performed by single surgeon using consistent endoscopic SCIT technique. Extent of resection assessed by postoperative MRI on day 1 with standardized definitions (GTR, NTR, STR).
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: preoperative imaging, intraoperative endoscopic visualization, histopathologic confirmation. Well-established imaging criteria for pineal region lesions.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Study doesn't explicitly state "consecutive" patients. States "retrospective chart review was performed for all adult patients" but unclear if truly consecutive during study period.

5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Authors don't provide information about excluded patients or total number of pineal region surgeries performed. Only states "Six patients were identified" without denominator.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: 6 patients (4 female, 2 male), age range 26-65 years, mean age 50.5±14.5 years. Individual patient characteristics detailed in comprehensive tables.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical detail: tumor pathology, presenting symptoms, neurological status, surgical duration, complications, follow-up outcomes. Comprehensive individual patient data with pre/post-operative imaging.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☑	☐	☐	**Major limitation:** Limited follow-up reporting. Mean follow-up only 5.75 months. No standardized assessment tools. Limited outcome measures beyond immediate surgical results. Short-term follow-up inadequate for meaningful conclusions.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single academic institution clearly identified: Keck School of Medicine of USC. Academic medical center context described. Single senior surgeon experience (G.Z.).
10. Was statistical analysis appropriate?	☐	☑	☐	☐	**Major limitation:** Authors explicitly state "we were unable to include a statistical analysis for our small case series." Only descriptive statistics provided. No confidence intervals or comparative analyses.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 7: Perspectives on Endoscopic Transseptal Interforniceal Approach for Retroforaminal Colloid Cysts

Authors: Arnaout MM, Elsamman AK

Journal: World Neurosurgery 2021; 152:e71-e80

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: 12 patients with third ventricular colloid cysts with retroforaminal extensions (primarily behind foramen of Monro). Cysts not well visualized through foramen of Monro requiring transseptal approach. All symptomatic patients with ventricular dilation.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all procedures performed using endoscopic transseptal interforniceal approach. Rigid endoscope used in all cases. Memory function evaluated using verbal fluency, naming, and visual memory tests. Consistent surgical technique described.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: preoperative MRI, intraoperative endoscopic visualization, histopathologic confirmation of colloid cyst diagnosis. Standard imaging criteria used for retroforaminal location assessment.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Study doesn't explicitly state "consecutive" patients. States "included all symptomatic patients with colloid cysts" but unclear if these represent all eligible cases during the study period or if there was selection.

5. Did the case series have complete inclusion of participants?	☐	☑	☐	☐	**Major limitation:** Authors explicitly exclude patients with previous shunt surgery or recurrent cysts but don't provide information about how many were excluded or the total denominator of potentially eligible cases.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: 12 patients (10 male, 2 female), age range 17-39 years, median 28.5 years. Individual patient data provided in comprehensive table format with detailed characteristics.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical detail: presenting symptoms, preoperative cyst sizes (mean 22mm), surgical approach details, memory function assessment, complications, follow-up outcomes. Detailed surgical technique with step-by-step description and images.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting: extent of resection using both Barrow and Isaac's grading scales, memory function at multiple timepoints, complications, recurrence rates. Good follow-up duration (median 59 months, range 9-68 months).
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Two academic institutions clearly identified: Zagazig University and Cairo University, Egypt. Academic medical center context described.
10. Was statistical analysis appropriate?	☐	☑	☐	☐	**Major limitation:** Only descriptive statistics provided (percentages, means, medians). No inferential statistics, confidence intervals, or comparative analyses. Very limited statistical approach for case series of this size.

Overall Appraisal

Include: ☑ Exclude: ☐ Seek further info: ☐

Study 8: Combined Neuroendoscopic Techniques in the Management of Pediatric Brain and Skull Base Tumors: A Single-Institutional Case Series

Authors: Greco et al. (2022)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria stated: pediatric patients (≤18 years) who underwent management of brain tumor or related diseases with neuroendoscopy between 2007-2017.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized data collection using electronic patient records and standardized forms. Consistent use of MRI imaging and established diagnostic criteria.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods used including MRI imaging, histopathological confirmation (95.8% diagnostic success rate for biopsies), and established tumor classification systems.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Study states "all consecutive pediatric patients" who met inclusion criteria during the specified time period (2007-2017).
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	All 47 patients who met inclusion criteria during the study period were included, with no exclusions mentioned.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographic data provided: age (mean 9.8±4.6 years), gender (65.9% male), ethnicity, and geographic origin clearly reported in Table 1.

7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information including tumor types, locations, disease status, hydrocephalus presence (68.1% of cases), and specific surgical indications clearly documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☐	☑	☐	**LIMITATION:** Follow-up was limited (mean 16.5 months, range 0.2-105.2) due to many patients (55.3%) residing outside primary referral area. Outcomes reported but follow-up incomplete.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Study conducted at Wolfson Children's Hospital with clear institutional context. Patient origins documented (44.7% local, 38.3% other US cities, 17.0% other countries).
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate descriptive statistics used for case series design. Data presented as means ± SD, medians with IQR, and percentages. No inappropriate inferential statistics applied.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 9: Long-Term Outcomes of Endoscopic Third Ventricle Colloid Cyst Resection: Case Series With a Proposed Grading System

Authors: Isaacs et al. (2020)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: symptomatic third ventricle colloid cysts that underwent endoscopic resection (1995-2018). Excluded patients with <6-week follow-up. Hydrocephalus defined by Evans index ≥0.30.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized measurements using MRI imaging for cyst size and characteristics. Standardized surgical technique by single surgeon. Clear definition of hydrocephalus and outcome measures.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: MRI imaging, clinical presentation consistent with colloid cyst symptoms, histopathological confirmation, standardized radiological assessments by neuroradiologists.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Study explicitly states "retrospective review of consecutive patients" who underwent endoscopic resection by the senior author between 1995-2018.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion of all 74 consecutive patients meeting criteria. Only exclusion was patients with <6-week follow-up. Initial review identified 110 patients with colloid cysts, but 36 asymptomatic cases managed conservatively.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographics: median age 48.0 years (range 13.0-80.0), gender distribution (51.4% male, 48.6% female), cyst size median 12.0mm (5.0-27.0mm).
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: presenting symptoms (headaches, cognitive issues, gait disturbances), cyst characteristics, evidence of bleeding in 8.1%, acute presentation requiring EVD in 6.8% of cases.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	**EXCELLENT:** Exceptional long-term follow-up with median 10.3 years (range 0.3-23.7 years). Clear outcome reporting: 87.8% symptomatic improvement, 8.1% recurrence rate, detailed complication rates.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Study conducted at 2 centers by single experienced surgeon (25 years neuroendoscopy experience). Quality control measures implemented including independent radiological review.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate statistical methods: Kaplan-Meier survival analysis, ROC analysis, Fisher's exact test, Spearman correlation. Well-suited for case series with time-to-event outcomes.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 10: Long-term Results of the Neuroendoscopic Management of Colloid Cysts of the Third Ventricle: A Series of 90 Cases

Authors: Boogaarts et al. (2011)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: all patients with third ventricular colloid cyst resection at two centers (1994-2007). Excluded patients with <1 year follow-up unless contacted for assessment.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized MR assessment with clear grading system (Groups A, B, C). Evans Index used for ventricular measurement. Standardized surgical approach by experienced neuroendoscopists.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: MRI assessment with T1/T2 sequences, clinical presentation, surgical confirmation. Clear radiological classification system established.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Study states "all patients admitted for resection of a colloid cyst" at both centers during specified period, indicating consecutive inclusion.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	All 90 patients meeting criteria included. Clear accounting for follow-up losses: 85/90 had clinical follow-up, 80/90 had imaging follow-up. Reasons for missing data provided.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographics: 52 male/38 female, age range 16-77 years (average 43), symptom duration, presenting symptoms detailed in Table 2.

7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: presenting symptoms (headache 81%, memory deficit 53%), cyst characteristics, preoperative imaging findings, surgical details comprehensively documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	**GOOD:** Mean follow-up 4 years 3 months (range 46 days to 12 years). Clear outcome reporting including complications, recurrence rates (6.7%), reoperation details. Sequential imaging analysis provided.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Two experienced tertiary neuroendoscopy centers specified: Radboud University Nijmegen and Hôpital Henri Mondor. Three experienced surgeons identified. Different surgical techniques between centers described.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate descriptive statistics for case series. Life table analysis for recurrence-free survival. Chi-square analysis for categorical variables. Survival analysis methodology appropriate for this study design.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 11: Endoport-Assisted Endoscopic Surgery for Removal of Lateral Ventricular Tumors: Our Experience and Review of the Literature

Authors: Sankhla et al. (2023)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients with lateral ventricular tumors who underwent endoport-assisted endoscopic surgery (2016-2019). All patients had tumors primarily in one lateral ventricle.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized surgical technique using flexible 11-mm endoport. Consistent MRI assessment, tumor size measurements, and KPS scoring system used for all patients.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: MRI imaging, clinical presentation, histopathological confirmation in all cases. Clear radiological assessment of tumor location and characteristics.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** Study states patients underwent surgery "between 2016 and 2019" but does not explicitly state consecutive inclusion. No mention of excluded patients or selection criteria.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** No information provided about excluded patients or complete capture of all eligible cases. Study presents 26 patients but doesn't confirm all eligible patients were included.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: age range, gender distribution, presenting symptoms (headaches in all, visual impairment 46%, memory/incontinence/seizures 38%), tumor locations and sizes detailed.

7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical information: detailed tumor histology (central neurocytoma 8, high-grade glioma 5, ependymoma 5, etc.), tumor locations, ventricular involvement, hydrocephalus status clearly documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☑	☐	☐	**MAJOR LIMITATION:** Very short follow-up period (mean 4.6 months, range 3-18 months). Insufficient for assessment of long-term outcomes, especially tumor recurrence and late complications.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☐	☑	☐	**LIMITED:** Single institution (Global Hospital, Mumbai) but insufficient detail about institutional characteristics, surgeon experience, or case volume. No information about center expertise level.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate descriptive statistics for case series design. KPS scores compared pre- and post-operatively. No inappropriate inferential statistics attempted.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 12: Endoscopic management of third ventricular colloid cysts in mildly dilated lateral ventricles

Authors: Eshra (2018)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: third ventricular colloid cysts with mildly dilated ventricles (Evans ratio 30-42%) operated between 2008-2016. Specific definition of ventricular size provided.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized measurements: Evans ratio 30-42% with high interobserver reliability. Consistent cyst size measurements (5-15mm), standardized rigid endoscopic system (GAAB) used for all cases.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: CT/MRI imaging, clinical presentation, standardized radiological assessment. Clear identification of cyst location and characteristics.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** Study states cases operated "between June 2008 and December 2016" but does not explicitly confirm consecutive inclusion of all eligible patients during this period.

5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** No information about excluded patients or complete capture of eligible cases. Single author series may have selection bias. No mention of cases that failed inclusion criteria.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographics: 16 patients (12 female, 4 male), age range 17-40 years, presenting symptoms clearly documented (headaches 13 cases, epilepsy 2 cases, asymptomatic 1 case).
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Detailed clinical information: cyst sizes (5-15mm), presenting symptoms, Evans ratios, operative times, complications, and outcomes clearly documented in comprehensive table.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☑	☐	☐	**MAJOR LIMITATION:** Short follow-up period (1-4 years) with limited detail. No specific recurrence assessment described. Four partial removal cases followed only by MRI at 6 months, 1 and 2 years - insufficient for colloid cyst recurrence evaluation.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☑	☐	☐	**INSUFFICIENT:** Single author from Alexandria University. No information about institutional experience, case volume, surgeon training level, or center characteristics. Limited context about expertise level.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate descriptive statistics for case series design. Simple frequency analysis and means reported. No inappropriate statistical testing attempted.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 13: Application of endoport-assisted neuroendoscopic techniques in lateral ventricular tumor surgery

Authors: Yan et al. (2023)

Critical Appraisal Table

Appraisal Criteria	Yes	No	Unclear	Not Applicable	Comments/Justification
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients with lateral ventricular tumors who underwent endoport-assisted neuroendoscopic surgery at single institution (January 2018-September 2020).
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized surgical technique using Karl Storz neuroendoscopy with 21mm diameter endoport. Consistent MRI assessment, neuronavigation used in all cases, Glasgow Outcome Scale for outcome measurement.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: preoperative MRI, intraoperative neuronavigation, histopathological confirmation in all cases. Clear radiological tumor localization and characterization.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** Study states patients operated "between January 2018 and September 2020" but does not explicitly confirm consecutive inclusion of all eligible patients during this time period.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	**UNCLEAR:** No information about excluded patients or confirmation that all eligible cases were included. Single institution series may have selection bias without explicit consecutive enrollment statement.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographics: 16 patients (5 male, 11 female), mean age 43.2 years (18-70), presenting symptoms, tumor locations, and hydrocephalus status (56.25%) clearly documented.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical documentation: detailed histopathology (central neurocytoma, meningioma, astrocytoma variants, etc.), tumor locations by ventricle segment, surgical approaches, and complications comprehensively reported.
8. Were the outcomes or follow-up results of cases clearly reported?	☐	☑	☐	☐	**SIGNIFICANT LIMITATION:** Follow-up period highly variable (6-38 months, mean 19.56 months). Too short for adequate assessment of tumor recurrence, especially for low-grade tumors. One death limits survival analysis.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Good institutional context: Nanjing Drum Tower Hospital, affiliated with Nanjing University Medical School. Multiple authors suggest team experience. Equipment details provided (Karl Storz, Vycor Medical).
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate descriptive statistics for case series design. No inappropriate inferential statistics. Appropriate use of percentages, means, and ranges. Includes comparison table with literature.

Overall Appraisal

Decision: ☑ Include ☐ Exclude ☐ Seek further info

Study 14 Article

Long-Term Results After Endoscopic Resection of Colloid Cysts

Author(s) Vorbau C, Baldauf J, Oertel J, Gaab MR, Schroeder HWS

Year 2019

Journal World Neurosurgery

Record Number DOI: 10.1016/j.wneu.2018.09.190

Critical Appraisal Items

Item	Checklist Question	Assessment	Comments/Rationale
1	Were there clear criteria for inclusion in the case series?	☐ Yes ☑ No ☐ Unclear ☐ Not Applicable	**No clear inclusion/exclusion criteria stated.** The study mentions "20 patients underwent endoscopic treatment in our department" but does not specify patient selection criteria, disease characteristics, or eligibility requirements for endoscopic treatment.
2	Was the condition measured in a standard, reliable way for all participants included in the case series?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Standard measurement methods used.** The study used MRI for diagnosis and follow-up assessment in 17 patients, which is a standard, reliable imaging method for colloid cysts. Consistent imaging modality was used throughout.

3	Were valid methods used for identification of the condition for all participants included in the case series?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Valid identification methods used.** MRI is a validated, objective method for diagnosing and monitoring colloid cysts. The study used established imaging criteria for colloid cyst identification and assessment of surgical outcomes.
4	Did the case series have consecutive inclusion of participants?	☐ Yes ☐ No ☑ Unclear ☐ Not Applicable	**Unclear consecutive inclusion.** While the study mentions a timeframe (data from prospectively maintained database, follow-up Sept 2009-Nov 2011), it does not explicitly state that all consecutive patients with colloid cysts during a specific period were included.
5	Did the case series have complete inclusion of participants?	☐ Yes ☐ No ☑ Unclear ☐ Not Applicable	**Unclear complete inclusion.** The study does not specify whether all patients who underwent endoscopic colloid cyst resection during the study period were included. No information about excluded patients or reasons for exclusion is provided.
6	Was there clear reporting of the demographics of the participants in the study?	☐ Yes ☑ No ☐ Unclear ☐ Not Applicable	**Poor demographic reporting.** The abstract only mentions "20 patients" with no demographic information provided (age, sex, geographic location, etc.). This is a significant limitation for assessing generalizability.
7	Was there clear reporting of clinical information of the participants?	☐ Yes ☑ No ☐ Unclear ☐ Not Applicable	**Limited clinical information.** While the study mentions preoperative symptoms and surgical outcomes, there is insufficient detail about disease characteristics, symptom duration, cyst size, comorbidities, or detailed clinical presentations in the abstract.

8	Were the outcomes or follow up results of cases clearly reported?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Clear outcome reporting.** The study clearly reports surgical outcomes (total resection in 16/20, complications in 6 patients, symptom resolution in 16 patients), long-term follow-up results (average 188 months), and recurrence data (2/3 patients with remnants had recurrence).
9	Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Adequate site information.** The study clearly identifies the institutional setting (Department of Neurosurgery, University Medicine Greifswald, Germany) and mentions data from a prospectively maintained endoscopy database, providing context for the clinical setting.
10	Was statistical analysis appropriate?	☐ Yes ☐ No ☑ Unclear ☐ Not Applicable	**Statistical analysis unclear.** The abstract does not mention statistical methods used. Given the descriptive nature and small sample size (n=20), statistical analysis may be limited, but this cannot be assessed from the provided information.

Overall Appraisal

Decision: ☐ **Include** - Study meets quality criteria for inclusion ☑ **Exclude** - Study does not meet quality criteria ☐ **Seek further info** - Additional information needed before decision

Study 15 Article

Title	Colloid cysts: Neuropsychological outcome, quality of life and long-term control after endoscopic gross total resection
Author(s)	Dhandapani S, Verma R, Mohanty M, Sharma A, Vyas S, Dhandapani M, Gupta SK
Year	2021
Journal	Clinical Neurology and Neurosurgery
Record Number	DOI: 10.1016/j.clineuro.2021.106951

Critical Appraisal Items

Item	Checklist Question	Assessment	Comments/Rationale
1	Were there clear criteria for inclusion in the case series?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Clear inclusion criteria provided.** The study clearly states inclusion criteria: "Patients with colloid cysts larger than 7 mm, undergoing endoscopy were prospectively studied." This provides specific size criteria and treatment modality requirements.
2	Was the condition measured in a standard, reliable way for all participants included in the case series?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Standard measurement methods used.** The study used radiological assessment for cyst size measurement (mean diameter 19 mm mentioned),

			suggesting consistent imaging-based measurement across all participants.
3	Were valid methods used for identification of the condition for all participants included in the case series?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Valid identification methods used.** Colloid cysts were identified using standard radiological criteria. The study mentions "clinico-radiology" assessment and specific size measurements, indicating use of validated imaging methods for diagnosis.
4	Did the case series have consecutive inclusion of participants?	☐ Yes ☐ No ☑ Unclear ☐ Not Applicable	**Unclear consecutive inclusion.** While the study is described as "prospectively studied," it does not explicitly state whether all consecutive patients meeting inclusion criteria during a specific time period were included.
5	Did the case series have complete inclusion of participants?	☐ Yes ☐ No ☑ Unclear ☐ Not Applicable	**Unclear complete inclusion.** The study doesn't specify whether all eligible patients were included or if any patients meeting inclusion criteria were excluded and for what reasons.
6	Was there clear reporting of the demographics of the participants in the study?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Good demographic reporting.** The study provides mean age (34 years), sample size (22 patients), and cyst characteristics (mean diameter 19 mm). This provides adequate demographic information for assessment.
7	Was there clear reporting of clinical information of the participants?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Excellent clinical information.** The study provides detailed clinical information including neuropsychological parameters, cognitive scores, cyst sizes, and mentions assessment of symptomatic status. Clinical presentation appears well-documented.

8	Were the outcomes or follow up results of cases clearly reported?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Comprehensive outcome reporting.** Clear reporting of: GTR achieved in all cases, mean follow-up of 53.4 months, no recurrences, cognitive improvement scores (40.63±10.4 to 50.25±5.8), and QOL outcomes with statistical analysis.
9	Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Clear institutional information.** The study clearly identifies the setting: Department of Neurosurgery, Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh, India - a tertiary care academic medical center.
10	Was statistical analysis appropriate?	☑ Yes ☐ No ☐ Unclear ☐ Not Applicable	**Appropriate statistical analysis.** The study reports correlation analysis (R=0.9, P=0.01) for cyst size vs. cognitive outcomes, and comparative analysis with control groups for QOL assessment with p-values (P=0.02), indicating appropriate statistical methods.

Overall Appraisal

Decision: ☑ **Include** - Study meets quality criteria for inclusion ☐ **Exclude** - Study does not meet quality criteria ☐ **Seek further info** - Additional information needed before decision

Article 16: Endoscopic resection of third ventricle colloid cysts using an ultrasonic aspirator

Authors: G. Ibáñez-Botella, I. F. Narváez, B. Pugliese, B. Ros, M. A. Arráez

Year: 2024

Journal: Neurosurgical Review

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria stated: patients with colloid cysts of third ventricle undergoing neuroendoscopic resection using ultrasonic aspirator between 2016-2023
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standard diagnostic approach using CT and MRI imaging. Consistent surgical technique described. All procedures video recorded.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods using established imaging criteria (CT and MRI). Diagnosis based on recognized radiological characteristics of colloid cysts.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	All patients with colloid cysts treated with ultrasonic aspirator between 2016-2023 were included consecutively.

5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion of all 11 patients meeting criteria during the study period. No exclusions mentioned.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Demographics clearly reported: age (mean 44 years, range 27-69), sex distribution (6 males, 5 females).
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Comprehensive clinical information: presenting symptoms, hydrocephalus status, cyst dimensions, radiological characteristics, comorbidities.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear reporting of surgical outcomes, complications, degree of resection, symptom improvement, and follow-up data (median 16 months, range 1-65).
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single center study clearly identified: Neurosurgery Department, Regional University Hospital of Málaga, Spain.
10. Was statistical analysis appropriate?	☐	☐	☑	☐	Limited statistical analysis. Descriptive statistics only (means, medians, ranges, percentages). No comparative analysis or significance testing, which may be appropriate for a case series but limits analytical depth.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Article 17: Combined endoscopic transforaminal-transchoroidal approach for the treatment of third ventricle colloid cysts

Authors: Maurizio Iacoangeli, Lucia Giovanna Maria di Somma, Alessandro Di Rienzo, Lorenzo Alvaro, Davide Nasi, Massimo Scerrati

Year: 2014

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☐	☑	☐	☐	Inclusion criteria not clearly defined. Study mentions "symptomatic colloid cyst of third ventricle" but lacks specific diagnostic criteria, symptom thresholds, or detailed selection parameters.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standard diagnostic approach using CT and MRI. Consistent use of Evans ratio (≥0.30) for ventriculomegaly. Surgical technique well-described with clear anatomical landmarks.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid imaging methods (CT and MRI) used for diagnosis. Standard radiological criteria applied for colloid cyst identification.

4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Unclear - states 5 patients from 19 total cases but doesn't specify if these 5 represent all consecutive cases meeting ETTA criteria during the study period. Selection process not well explained.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Unclear - no information about potential exclusions or whether all eligible patients were included. No mention of patients lost to follow-up during case selection.
6. Was there clear reporting of the demographics of the participants in the study?	☐	☑	☐	☐	Limited demographic reporting. Age range (25-65 years, mean 48.6) and male preponderance (80%) reported, but lacks detail on other relevant demographics such as ethnicity, education, geographic factors.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Good clinical information provided including presenting symptoms, neurological status, cyst dimensions, ventriculomegaly status, and specific surgical indications for ETTA approach.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Clear outcome reporting including operative time, hospital stay, complications, degree of resection, symptom improvement, and follow-up results (range 42-84 months, average 68.4 months).
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single center clearly identified: Department of Neurosurgery, Università Politecnica delle Marche, Umberto I General Hospital, Ancona, Italy.

10. Was statistical analysis appropriate?	☐	☐	☑	☐	Very limited statistical analysis. Only basic descriptive statistics provided (means, ranges). No formal statistical testing or confidence intervals. Given small sample size (n=5), more sophisticated analysis may not be feasible, but this limits evidence quality.

Overall Appraisal Decision

☐ Include ☑ Seek further info ☐ Exclude

Article 18: Endoscopic removal of recurrent colloid cysts

Authors: Jacques J. Lara-Reyna, Rafael Uribe-Cardenas, Imali Perera, Nicholas Szerlip, Anastasios Giamouriadis, Nicole Savage, Therese Haussner, Mark M. Souweidane

Year: 2020

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients undergoing purely endoscopic removal of recurrent colloid cysts from prospective database over 19-year period (1999-2018). Recurrent cases compared to primary cases.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach using frameless stereotaxy, consistent endoscopic technique, and systematic MRI assessment within 48 hours post-surgery. Complete vs incomplete removal clearly defined.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid identification methods using MRI studies and established radiological criteria for colloid cyst diagnosis and recurrence assessment.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	All patients with recurrent colloid cysts from prospective database during study period were included consecutively. Data managed using REDCap system.

5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion from prospective database. Authors acknowledge potential for some recurrences not diagnosed due to loss to follow-up from primary surgery registry.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting including age distribution, sex (60% female, 40% male), and detailed patient characteristics in both recurrent and primary groups.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical information including symptomatology, hydrocephalus status, cyst diameter, frontal occipital horn ratio (FOR), previous surgery details, and presenting symptoms.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: complete removal rates, complications, length of stay, follow-up duration (average 49 months), recurrence rates, and detailed case illustrations provided.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single-center study clearly identified: Department of Neurological Surgery, NewYork-Presbyterian Hospital, Weill Cornell Medical College. All procedures by same surgeon.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate statistical analysis for study design: Fisher's exact test for categorical variables, Mann-Whitney U-test for continuous variables. Comparative analysis between primary and recurrent

					groups. Sample size limitations acknowledged.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Article 19: Endoscopic removal of recurrent colloid cysts

Authors: Jacques J. Lara-Reyna, Rafael Uribe-Cardenas, Imali Perera, Nicholas Szerlip, Anastasios Giamouriadis, Nicole Savage, Therese Haussner, Mark M. Souweidane

Year: 2020

Journal: Journal of Neurosurgery

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients undergoing purely endoscopic removal of recurrent colloid cysts from prospective database over 19-year period (1999-2018). Recurrent cases compared to primary cases.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach using frameless stereotaxy, consistent endoscopic technique, and systematic MRI assessment within 48 hours post-surgery. Complete vs incomplete removal clearly defined.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid identification methods using MRI studies and established radiological criteria for colloid cyst diagnosis and recurrence assessment.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	All patients with recurrent colloid cysts from prospective database during study period were included

					consecutively. Data managed using REDCap system.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion from prospective database. Authors acknowledge potential for some recurrences not diagnosed due to loss to follow-up from primary surgery registry.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting including age distribution, sex (60% female, 40% male), and detailed patient characteristics in both recurrent and primary groups.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical information including symptomatology, hydrocephalus status, cyst diameter, frontal occipital horn ratio (FOR), previous surgery details, and presenting symptoms.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: complete removal rates, complications, length of stay, follow-up duration (average 49 months), recurrence rates, and detailed case illustrations provided.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single-center study clearly identified: Department of Neurological Surgery, NewYork-Presbyterian Hospital, Weill Cornell Medical College. All procedures by same surgeon.

10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate statistical analysis for study design: Fisher's exact test for categorical variables, Mann-Whitney U-test for continuous variables. Comparative analysis between primary and recurrent groups. Sample size limitations acknowledged.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Article 20: Pediatric colloid cysts: a multinational, multicenter study. An IFNE-ISPN-ESPN collaboration

Authors: Jonathan Roth, Yurii Perekopaiko, Danil A. Kozyrev, Shlomi Constantini, on behalf of the Pediatric Colloid Cyst Study Group (PCCSG)

Year: 2022

Journal: Journal of Neurosurgery: Pediatrics

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criterion: children younger than 18 years diagnosed with colloid cyst based on MRI findings, intraoperative findings, or pathological confirmation. Multinational recruitment from professional societies.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized diagnostic criteria: typical MRI findings, intraoperative findings, or pathological confirmation. Consistent data collection protocol across all participating centers.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid identification methods using established imaging criteria (MRI), surgical findings, and histopathological confirmation. Multi-modal diagnostic approach ensures accuracy.

4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Unclear - states retrospective collection from multiple centers since 2010, but doesn't specify if all eligible patients were included consecutively or if there was selection bias at individual centers.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Unclear - acknowledges potential underreporting of non-operated cases if not followed by neurosurgical teams. No information about exclusions or loss to follow-up during case identification.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Excellent demographic reporting: detailed age distribution (mean 12.8±3.4 years, median 13.2 years, IQR 10.3-15.4 years), sex distribution (74 boys, 60 girls), and age-stratified analysis provided.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Comprehensive clinical information: presenting symptoms, symptom acuteness, neurological status, MRI characteristics, hydrocephalus status, treatment details, and outcomes well documented with detailed tables.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Excellent outcome reporting: surgical techniques, complications, recurrence rates, functional outcomes, follow-up duration (mean 49.5±45.8 months), and detailed analysis of treatment vs. conservative management.
9. Was there clear reporting of the presenting site(s)/clinic(s)	☑	☐	☐	☐	Excellent reporting: 134 cases from 33 centers across 5 continents, each contributing 1-20 cases (mean 4±4). Geographic

demographic information?					distribution clearly documented with breakdown by country/region.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Comprehensive and appropriate statistical analysis: descriptive statistics, correlations (Spearman's), associations (Fisher's exact, Mann-Whitney, Kruskal-Wallis tests), two-tailed tests with $p<0.05$ significance. Well-powered for main analyses.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Article 21: Endoscopic and Endoscopically-Assisted Resection of Intraventricular Lesions Using a Neuroendoscopic Ultrasonic Aspirator

Authors: Florian Ebel, Ladina Greuter, Maria Licci, Raphael Guzman, Jehuda Soleman

Year: 2021

Journal: Journal of Clinical Medicine

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: consecutive patients undergoing resection of intraventricular lesion with NUA between January 2019-April 2020 at University Hospital of Basel. Both adult and pediatric patients included.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized surgical technique using NUA (Endoscopic Neurosurgical Pen, Söring GmbH) with consistent equipment and approach. All surgeries by senior authors. Standardized neuronavigation used.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods using MRI imaging and histopathological confirmation post-resection. Board-certified neuroradiologist assessed extent of resection on postoperative MRI within 48h.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Clearly states "consecutive retrospective single-center case series" and "All patients with intraventricular lesions referred to us in the period mentioned above were treated with the newly introduced NUA."

5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion confirmed: "There were no purely intraventricular lesions treated primarily by conventional open microsurgery during this period." All eligible patients included.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Good demographic reporting: 8 patients, 5 males (62.5%), mean age 41.7±28.2 years (range 0.5-73 years), 3 pediatric (37.5%) and 5 adult patients (62.5%). Age ranges clearly specified.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical information: presenting symptoms, papilledema status, hydrocephalus presence, lesion location, size (diameter and volume), histological diagnosis, surgical approach details comprehensively documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: extent of resection, surgery time, blood loss, complications (intraoperative/postoperative), neuropsychological evaluation (MOCA scores), mRS, symptom improvement, follow-up time (15.9±6.3 months), recurrence data.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single center clearly identified: Department of Neurosurgery and Division of Pediatric Neurosurgery, University Hospital of Basel, Switzerland. Academic tertiary center with specialized expertise.
10. Was statistical analysis appropriate?	☐	☑	☐	☐	Limited statistical analysis - mainly descriptive statistics (mean, SD, range). Some comparative analysis mentioned (blood loss PE vs EA, p=0.114) but very small sample size limits meaningful statistical testing. No power analysis or confidence intervals provided.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Article 22: Endoscopic endonasal surgery for craniopharyngiomas: surgical outcome in 64 patients

Authors: Maria Koutourousiou, Paul A. Gardner, Juan C. Fernandez-Miranda, Elizabeth C. Tyler-Kabara, Eric W. Wang, Carl H. Snyderman

Year: 2013

Journal: Journal of Neurosurgery

Critical Appraisal Results

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: patients with craniopharyngioma treated via EES at University of Pittsburgh Medical Center from June 1999 to April 2011, with histologically confirmed diagnosis. Excludes purely intraventricular tumors.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized diagnostic approach with preoperative MRI and CT scanning. Consistent surgical technique using EES. Volumetric analysis for tumor resection assessment. Board-certified neuroradiologist evaluation of outcomes.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: histological confirmation in all cases, preoperative imaging with MRI and CT, established tumor volume calculation using modified ellipsoid formula.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Unclear - states all patients treated with EES during study period were included, suggesting consecutive enrollment, but doesn't explicitly confirm this or address potential selection bias in surgical approach choice.

5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Complete inclusion appears achieved - states "all patients with craniopharyngioma, with the rare exception of those with purely intraventricular tumors, are subjected to EES at our institution." Clear exclusion criteria specified.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Excellent demographic reporting: 64 patients (47 adults, 17 children), mean age 40 years (range 4-82), male/female ratio 1.6:1, detailed age-specific characteristics, primary vs recurrent tumor status clearly documented.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Comprehensive clinical documentation: presenting symptoms, imaging findings, tumor characteristics (location, size, extension), previous treatments, endocrine status, visual function - all systematically reported in detailed tables.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Excellent outcome reporting: degree of resection (volumetric analysis), visual outcomes, endocrine function, complications, recurrence rates, adjuvant treatments, follow-up duration (mean 38 months), survival data.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Single tertiary center clearly identified: University of Pittsburgh Medical Center. Multidisciplinary team approach specified. Academic medical center with specialized skull base program.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate statistical analysis: chi-square and Fisher exact tests for comparing resection and recurrence rates, $p<0.05$ significance level, separate analysis for adult and pediatric populations, multiple parameter comparisons performed.

Overall Appraisal Decision

☑ **Include** ☐ Exclude ☐ Seek further info

Study 23: Margetis, K., Christos, P. J., & Souweidane, M. (2014). Endoscopic resection of incidental colloid cysts. *Journal of Neurosurgery*, 120(6), 1259-1267.

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: primary endoscopic colloid cyst resection (1996-2012). Explicit exclusion criteria: secondary resections, microsurgical resections, missing preoperative symptom data.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Colloid cysts consistently diagnosed via neuroimaging (MRI/CT). Standardized endoscopic technique described. Clear definition of "incidental" vs "symptomatic" provided.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Neuroimaging-based diagnosis is the gold standard for colloid cysts. Well-established diagnostic criteria used.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Not explicitly stated whether all eligible patients during the time period were included or if there was any selection process beyond the stated exclusion criteria.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	While inclusion/exclusion criteria are clear, it's unclear if all eligible patients from the time period were included. 10 cases were excluded but completeness of inclusion not explicitly confirmed.
6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Age, sex, and imaging indications clearly reported for both groups. Detailed patient characteristics provided in Table 2.

7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Comprehensive clinical data: cyst diameter, ventricular measurements (Evans ratio, FOR), hydrocephalus status, symptoms clearly documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Detailed reporting of: surgical outcomes, complications, hospital stay, resection completeness, recurrence rates, follow-up duration. All patients accounted for.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☑	☐	☐	Limited information about the institution demographics. Single center study at Weill Cornell Medical College, but broader institutional/population context not described.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Appropriate statistical methods: t-tests, Wilcoxon rank-sum, chi-square, Fisher's exact test. Proper significance level ($p<0.05$). Confidence intervals provided.

Overall Appraisal

Decision: ☑ **Include** ☐ Exclude ☐ Seek further info

Study 24: Raouf, A., & Zidan, I. (2015). Endoscopic removal of third ventricular colloid cyst: Experience of 90 cases. *Neurosurgery Quarterly*, 25(1), 46-50.

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☐	☐	☑	☐	Basic inclusion criteria stated (third ventricular colloid cyst, endoscopic removal 2001-2011), but limited detail on specific inclusion/exclusion criteria. Some exclusions mentioned (recurrent, posteriorly located cysts) but not comprehensively defined.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Colloid cysts diagnosed via CT/MRI imaging. Standardized endoscopic technique described (Gaab rigid scope system). Consistent surgical approach documented.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Standard neuroimaging (CT/MRI) used for diagnosis, which is the accepted gold standard for colloid cyst identification. Valid diagnostic approach.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Not explicitly stated whether consecutive patients were included. Time period specified (June 2001-October 2011) but unclear if all eligible patients during this period were included.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	Completeness of inclusion not explicitly confirmed. Mentions excluding recurrent and posteriorly located cysts, but unclear if all other eligible patients were included.

6. Was there clear reporting of the demographics of the participants in the study?	☐	☑	☐	☐	Limited demographic reporting. Age range (16-67 years, mean 40.3), sex distribution (58 females out of 90), but lacks detail on other demographic characteristics.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Good clinical information: cyst size (8-35mm), CT appearance (hyperdense vs isodense), ventricular status, presenting symptoms clearly documented.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: operative time, resection extent, complications, follow-up duration (6-120 months, mean 62), imaging follow-up clearly documented.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☑	☐	☐	Limited institutional information. Study from Alexandria University, Egypt, but no broader demographic context about the population served or institutional characteristics.
10. Was statistical analysis appropriate?	☐	☐	☐	☑	No formal statistical analysis performed. This is a descriptive case series without comparative analysis or hypothesis testing, so formal statistics may not be applicable.

Overall Appraisal

Decision: ☐ Include ☑ **Exclude** ☐ Seek further info

Study 25: Ibáñez-Botella, G., Segura, M., De Miguel, L., Ros, B., & Arráez, M. A. (2019). Purely neuroendoscopic resection of intraventricular tumors with an endoscopic ultrasonic aspirator. *Neurosurgical Review*, 42(4), 973-982.

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Clear inclusion criteria: adult patients with supratentorial intraventricular tumors (lateral ventricle or third ventricle) with radiological signs of benignity, single-portal endoscopic approach between March 2015-January 2018.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: all patients diagnosed by MRI, uniform surgical technique with same equipment (Gaab rigid endoscope, SONOCA ultrasonic aspirator), consistent methodology described.
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: MRI used for all cases, which is gold standard for intraventricular tumors. Histological confirmation obtained in all cases.
4. Did the case series have consecutive inclusion of participants?	☑	☐	☐	☐	Explicitly stated: "nine consecutive cases" during specified time period (March 2015 to January 2018), suggesting consecutive inclusion.
5. Did the case series have complete inclusion of participants?	☑	☐	☐	☐	Appears complete for the defined criteria during the specified time period. Clear patient selection criteria with no mention of excluded eligible patients.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Comprehensive demographic reporting: age (18-74 years, mean 43.7), sex (5M, 4F), detailed clinical symptoms, tumor location, size, hydrocephalus status clearly documented in Table 1.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Excellent clinical documentation: tumor location, size (mean 20.5mm), hydrocephalus characteristics, symptoms, surgical approach details, histological diagnoses all clearly reported.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: degree of resection, operative time, complications, follow-up duration (mean 15.1 months), recurrence status. Individual patient data provided in detailed table.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☑	☐	☐	Limited institutional information. Single center at Regional University Hospital, Málaga, Spain, but no broader demographic context about population served or institutional characteristics.
10. Was statistical analysis appropriate?	☐	☐	☐	☑	No formal statistical analysis performed. This is appropriate for a small descriptive case series (n=9) focused on technique description and feasibility assessment.

Overall Appraisal

Decision: ☑ **Include** ☐ Exclude ☐ Seek further info

Study 26: Qiao, N., Li, C., Liu, X., Song, Y., Liang, L., Zou, Y., Lu, P., Zhang, Y., & Gui, S. (2025). Extended endoscopic endonasal approach for solid or predominantly solid third ventricle craniopharyngiomas complicated with obstructive hydrocephalus: a single-center experience of 27 patients. *Neurosurgical Review*, 48(1), 325.

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Very clear inclusion criteria: (1) newly diagnosed craniopharyngioma, (2) TVCs confirmed by Pascual et al. criteria, (3) purely solid or predominantly solid tumors with hydrocephalus, (4) available 3D MRI, (5) complete medical records. Clear exclusion criteria also provided.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: enhanced MRI for TVC definition, CT for calcification assessment, standardized surgical technique (EEEA), validated measurement tools (Evans index, simplified callosal angle).
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: enhanced MRI using established Pascual et al. criteria for TVC classification, histological confirmation in all cases, standardized tumor volume calculations.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Not explicitly stated whether consecutive patients were included. Study mentions screening 516 patients but doesn't clarify if these represent all consecutive patients during the time period.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	While clear inclusion/exclusion criteria are provided, it's unclear if all eligible patients during the study period were included. Only 27 of 516 patients (5.2%) met criteria, but completeness of inclusion not explicitly confirmed.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Excellent demographic reporting: detailed age (mean 51.3±12.9 years), sex (77.8% male), BMI, symptoms, tumor characteristics. Comprehensive Table 1 with individual patient data by subgroups.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Outstanding clinical documentation: tumor location, size, consistency, hydrocephalus measurements, surgical approach details, pathology (all PCPs with BRAFV600E mutations), comprehensive outcome measures.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: resection extent (88.9% GTR), visual outcomes with detailed scoring, endocrinological status, hydrocephalus relief measures, complications, follow-up duration (mean 38.9 months), recurrence rates.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Good institutional information: Beijing Tiantan Hospital, Capital Medical University. Large volume center with 516 craniopharyngioma cases treated during study period, providing context about institutional experience.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Excellent statistical analysis: SPSS version 23, appropriate tests for data distribution (Shapiro-Wilk test), paired and unpaired analyses, correlation analysis, significance set at $p<0.05$. Detailed statistical methodology described.

Overall Appraisal

Decision: ☑ **Include** ☐ Exclude ☐ Seek further info

Study 27: Qiao, N., Li, C., Liu, X., Song, Y., Liang, L., Zou, Y., Lu, P., Zhang, Y., & Gui, S. (2025). Extended endoscopic endonasal approach for solid or predominantly solid third ventricle craniopharyngiomas complicated with obstructive hydrocephalus: a single-center experience of 27 patients. *Neurosurgical Review*, 48(1), 325.

Criteria	Yes	No	Unclear	Not Applicable	Comments
1. Were there clear criteria for inclusion in the case series?	☑	☐	☐	☐	Very clear inclusion criteria: (1) newly diagnosed craniopharyngioma, (2) TVCs confirmed by Pascual et al. criteria, (3) purely solid or predominantly solid tumors with hydrocephalus, (4) available 3D MRI, (5) complete medical records. Clear exclusion criteria also provided.
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☑	☐	☐	☐	Standardized approach: enhanced MRI for TVC definition, CT for calcification assessment, standardized surgical technique (EEEA), validated measurement tools (Evans index, simplified callosal angle).
3. Were valid methods used for identification of the condition for all participants included in the case series?	☑	☐	☐	☐	Valid diagnostic methods: enhanced MRI using established Pascual et al. criteria for TVC classification, histological confirmation in all cases, standardized tumor volume calculations.
4. Did the case series have consecutive inclusion of participants?	☐	☐	☑	☐	Not explicitly stated whether consecutive patients were included. Study mentions screening 516 patients but doesn't clarify if these represent all consecutive patients during the time period.
5. Did the case series have complete inclusion of participants?	☐	☐	☑	☐	While clear inclusion/exclusion criteria are provided, it's unclear if all eligible patients during the study period were included. Only 27 of 516 patients (5.2%) met criteria, but completeness of inclusion not explicitly confirmed.

6. Was there clear reporting of the demographics of the participants in the study?	☑	☐	☐	☐	Excellent demographic reporting: detailed age (mean 51.3±12.9 years), sex (77.8% male), BMI, symptoms, tumor characteristics. Comprehensive Table 1 with individual patient data by subgroups.
7. Was there clear reporting of clinical information of the participants?	☑	☐	☐	☐	Outstanding clinical documentation: tumor location, size, consistency, hydrocephalus measurements, surgical approach details, pathology (all PCPs with BRAFV600E mutations), comprehensive outcome measures.
8. Were the outcomes or follow-up results of cases clearly reported?	☑	☐	☐	☐	Comprehensive outcome reporting: resection extent (88.9% GTR), visual outcomes with detailed scoring, endocrinological status, hydrocephalus relief measures, complications, follow-up duration (mean 38.9 months), recurrence rates.
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☑	☐	☐	☐	Good institutional information: Beijing Tiantan Hospital, Capital Medical University. Large volume center with 516 craniopharyngioma cases treated during study period, providing context about institutional experience.
10. Was statistical analysis appropriate?	☑	☐	☐	☐	Excellent statistical analysis: SPSS version 23, appropriate tests for data distribution (Shapiro-Wilk test), paired and unpaired analyses, correlation analysis, significance set at $p<0.05$. Detailed statistical methodology described.

Overall Appraisal

Decision: ☑ **Include** ☐ Exclude ☐ Seek further info