

# **Lethal Colloid Cyst: A Systematic Review**

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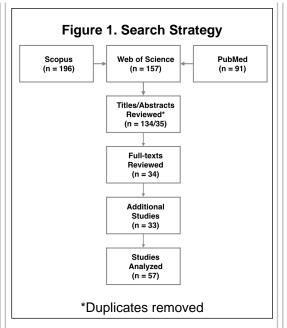
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## Introduction

Colloid cysts are histologically benign, congenital malformations and are a rare cause of sudden death. In 1858, Wallmann described a 57-year-old man who presented with urinary incontinence, memory disturbance, and ataxic gait [1]. It is unclear if the patient had undergone a lumbar puncture, but the patient died suddenly. Post-mortem examination identified a colloid cyst in the third ventricle. To our knowledge, that was the earliest report of a lethal colloid cyst. To date, the literature has not been systematically surveyed, so the clinical picture of impending death remains obscure.

## **Methods**

A systematic literature search of three popular databases was performed. Inclusion criteria were individuals with sudden-onset death and colloid cysts identified on imaging and/or autopsy. The cause of death must have been ascribed to the colloid cyst. Deaths precipitated by lumbar puncture were excluded. Subgroup analyses were performed for multiple patient populations.



### **Results**

A total of 107 patients were included. The mean age was 28.13 years (SD 13.26, range 6-79 years). Males and females were equally affected. Headache was the most frequent symptom (n = 86, 80.37%). There were 6 patients (5 adults and 1 child) that reported positional headaches. The mean duration of signs and symptoms was shorter in adults versus pediatric patients (2.10 days vs 6.50 days, p = 0.02) and more adults presented with signs and symptoms for less than 24 hours than did pediatric patients (37.50% vs 5.56%, p = 0.01). Colloid cyst mean diameter was 2.00 cm (SD 1.07, range 0.50-7.90 cm) and 95.71% measured 1 cm or larger.

## Table 2. Baseline Characteristics

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Variable	All Pts	Adult	PEDS
Age, yrs			
No. of Pts	103	85	18
Mean	28.53	32.65	12.17
SD, range	13.26, 6-79	11.80, 18-79	3.47, 6-17
Sex			
No. of Pts	105	86	19
M/F	53/52	43/43	10/9
Duration of symptoms, days			
No. of Pts	66	48	18
Mean	3.30	2.10	6.50
SD, range	5.64, 0-30	2.79, 0-11	9.22, 0-30
Less than 24 hours	19 (28.57)	18 (37.50)	1 (5.56)
Greater than 24 hours	47 (71.21)	30 (62.50)	17 (94.44)
Symptoms, n (%)			
No. of Pts	107	88	19
Headache	86 (80.37)	69 (78.41)	17 (89.47)
Nausea and vomiting	59 (55.14)	45 (51.14)	14 (73.68)
Loss of consciousness	21 (19.63)	16 (18.18)	5 (26.32)
Dead on arrival	17 (15.89)	14 (15.91)	3 (15.79)
Non-specific	14 (13.08)	13 (14.77)	1 (5.26)
Lethargy	12 (11.21)	8 (9.09)	4 (21.05)
Seizure	12 (11.21)	7 (7.95)	5 (26.32)
Cardiac	12 (11.21)	9 (10.23)	3 (15.79)
Cognitive	11 (10.28)	9 (10.23)	2 (10.53)
Coma	10 (9.35)	9 (10.23)	1 (5.26)
Visual	9 (8.41)	6 (6.82)	3 (15.79)
Gait	3 (2.80)	2 (2.27)	1 (5.26)
Colloid cyst size, cm			
No. of Pts	70	58	12
Mean	2.00	2.02	1.88
SD, Range	1.07, 0.5-7.9	1.06, 0.50-7.90	1.14, 1.00-5.00
External ventricular drainage	12 (27.27)	7 (22.58)	5 (38.46)
Autopsy			
No. of Pts	36	27	9
Ventriculomegaly	30 (83.33)	22 (81.48)	8 (88.89)
Edema	26 (72.22)	19 (70.37)	7 (77.78)
Herniation	22 (61.11)	17 (62.96)	5 (55.56)
Gyri/sulci effaced	20 (55.56)	14 (51.85)	6 (66.67)

Age missing for 4 patients

## **Conclusions**

Our data suggests that the prodrome preceding sudden death appears shorter in adults with more adults presenting with symptoms for less than a day, and most colloid cysts measured one centimeter or larger.

## **Learning Objectives**

To accurately characterize the patient characteristics and the clinical presentation of lethal colloid cysts.

## References

1. Wallmann H. Eine Colloidcyste im dritten Hirnventrikel und ein Lipom im Plexus choriodes. Virchows Arch. 1858;14:385-8.