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Mapping influence in pediatric craniopharyngioma: the 50 most cited articles

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Abstract

Purpose: To identify the 50 most-cited articles on pediatric craniopharyngioma and examine how citation patterns reflect historical and contemporary shifts in clinical management.

Methods: A two-step literature search was conducted in Web of Science through 2024. Articles primarily focused on pediatric craniopharyngioma were included; non-English and non-human studies were excluded. The 50 most-cited articles from 1945 to 2024 were analyzed for citation metrics, topic distribution, authorship, and temporal trends. To better capture emerging clinical paradigms, a complementary analysis identified the Top 25 most-cited articles published between 2014 and 2024.

Results: The Top 50 articles accrued 86-464 citations each, with the most cited published by Bunin et al. (498 citations). Publications spanned 1977-2019, with the 2000-2010 decade most productive (19 articles) and the 2010s accruing the most total citations (6124); 2023 was the most cited year (589 citations). Articles appeared across 22 journals, with JCEM,Journal of Neurosurgery, IJROBP, and Child's Nervous System and being the most represented. H.L. Müller was the most prolific author, with nine first-author publications. Topic distribution emphasized epidemiology and classification updates, as well as outcomes (n = 23), surgical techniques (n = 18), adjuvant therapies (n = 8), and clinical trials (n = 8). Citation peaks co-occurred with practice changes, including the transition from routine gross-total resection to minimally invasive surgery with adjuvant therapies, and adoption of endoscopic endonasal approaches.

Conclusions: Citation trends align with the field's evolution from routine gross-total resection toward hypothalamus-sparing surgery and multidisciplinary long-term management. The recent literature demonstrates rapid growth in minimally invasive techniques, precision radiotherapy, and molecularly informed therapies, though these advances remain underrepresented in cumulative citation rankings due to their recency. Future priorities include prospective multicenter outcome studies, integration of molecular insights into pediatric frameworks, and long-term neurocognitive follow-up in the context of modern radiotherapy techniques.

Keywords: Bibliometrics; Citation analysis; Hypothalamic-pituitary axis; Neuro-oncology; Pediatric craniopharyngioma.