



Review article

Top 50 most cited articles on primary tumors of the spine



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ABSTRACT

Citation analysis was performed in order to identify the top 50 most cited articles pertaining to the field of primary spinal tumors. This collection of articles highlights important trends in the neurosurgical literature.

We searched the Thomson Reuters Web of Knowledge in order to identify articles pertaining to primary tumors of the spine. Impertinent articles were removed. The top 50 most cited articles were identified. Thereafter, article characteristics were determined including article type, article topic, level of evidence, and citation rate.

The selected articles were published between 1951 and 2008. The most productive year was 1997 with 6 publications. The top 50 articles were published in twenty-two different journals, most commonly in *Neurosurgery* (12), *Journal of Neurosurgery* (8), and *Spine* (6). The most frequently cited article was by Tomita et al. written in 1997 which described total en bloc spondylectomy as a novel surgical technique in management of primary tumors of the vertebral column.

We identified the 50 most-cited articles in the field of primary spinal tumors. This collection of articles serves as a reference for recognizing impactful studies in the field.

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1. Introduction

Citation analysis allows the identification of studies that have influenced a given field. Although this methodology has been applied to spinal oncology in general [1], no previous study has specifically investigated the field of primary tumors of the spine. Given that primary and metastatic tumors of the spine are distinct pathologies with different management schemes, we aimed to perform a citation analysis of the primary tumors of the spine only. In this study, we identify and discuss the most cited articles published in the field.

2. Methods

We searched all databases within Thomson Reuters's Web of Science for articles pertaining to primary tumors of the spine. The search was limited to articles published in English, and between 2016 and 1945, which was the earliest date available in

the search engine. The search command was entered under the "topic" category as follows:

(spine or spinal or vertebral or column or canal) and (primary* or tumor*).

Impertinent articles were excluded. Total citation count was determined after accounting for self-citation. To eliminate self-citations, we performed two independent searches. First, a "cited reference search" was used to generate a list of all articles citing the article of interest. We next performed an "author" search including all authors of the article of interest in order to identify all articles published by these authors. The results of these searches were then cross-matched so as to determine how many times any author from a given article self-cited that article. The number of self-citations was subtracted from the initial number of citations obtained from the search so as to determine true total citation count. The articles were then sorted based on decreasing citation count. From this list, the top 50 most cited articles were chosen for final analysis.

3. Results

The results of the search included 4,571 articles. The 50 most cited articles relevant to primary spine tumors were included in the final list. Information collected on each article including their

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Table 1
List of 50 most cited articles on primary tumors of the spine. Information is provided on rank based on total number of citations, article title, first author's name, journal, article summary, article type, level of evidence, total number of citations, citation rate, defined as number of citations per year since publication and rank based on citation rate.

Rank	Article	Article topic/ Tumor type	Article summary	Article type	Level of evidence	Citations	Citation rate (rank)
1	Tomita, K., Kawahara, N., Baba, H., Tsuchiya, H., Fujita, T., Toribatake, Y. Total en bloc spondylectomy – A new surgical technique for primary malignant vertebral tumors. <i>Spine</i> , 1997. 22(3): p. 324–333 [9].	Surgical technique- Vertebral tumors	Authors describe a new surgical technique, “total en bloc spondylectomy”, consisting of en bloc laminectomy and en bloc corpectomy followed by anterior instrumentation with spacer grafting and posterior spinal instrumentation in patients with primary malignant vertebral tumors	Case Series	IV	199	12.9 (1st)
2	Cooper, P.R., Epstein, F.J. Radical resection of intramedullary spinal-cord tumors in adults- Recent experience in 29 patients. <i>J Neurosurg</i> .1985. 63(4): p. 492–499 [6].	Outcome- Intramedullary	Neurological outcome of 29 patients with primary intramedullary tumors who underwent radical resection	Case Series	IV	167	6.2 (9th)
3	Cooper P.R. Outcome after operative treatment of intramedullary spinal-cord tumors in adults- intermediate and long-term results in 51 patients. <i>Neurosurgery</i> , 1989. 25(6): p. 855–859 [10].	Outcome- Intramedullary	Neurological and functional outcome of 51 patients who underwent operative management of intramedullary spinal cord tumors at mean follow up time of 38 months	Case Series	IV	152	5.9 (13th)
4	Constantini, S., Miller, D. C., Allen, J. C., Rorke, L.B., Freed, D., Epstein, F. J., Radical excision of intramedullary spinal cord tumors: surgical morbidity and long-term follow-up evaluation in 164 children and young adults. <i>J Neurosurg</i> . 2000. 93(2): p. 183–193 [5].	Outcome- Intramedullary	Neurological, functional outcome and survival of 164 patients 21 years old or younger who underwent surgical management of intramedullary spinal cord tumors at 5 years of follow up	Case Series	IV	145	10.3 (3rd)
5	Cristante L., Herrmann H.D. Surgical management of intramedullary spinal-cord tumors- Functional outcome and sources of morbidity. <i>Neurosurgery</i> , 1994. 35(1): p. 69–74 [22].	Outcome- Intramedullary	Functional outcome of 69 patients with intramedullary spinal cord tumor who underwent surgical resection at mean follow up time of 54 months	Case Series	IV	125	6 (11th)
6	Tefft M., Vawter G.F., Mitus A., Paravertebral round cell tumors in children. <i>Radiology</i> , 1969. 92(7): p. 1501–1509 [53].	Radiology- extramedullary	Radiographic appearance of paravertebral tumors in 5 patients	Case Series	IV	114	2.5 (36th)
7	Roelvink N.C.A., Kamphorst W., Vanalphen H. A. M., Rao B. R. Pregnancy-related primary brain and spinal tumors. <i>Arch Neurol</i> , 1987. 44 (2): p. 209–215 [51].	Natural history- Other	Case report of 4 patients with primary spinal vascular tumors and their clinical presentation during pregnancy	Case Series	V	113	4.1 (20th)
8	Murphey M.D., Andrews C. I., Flemming D. J., Temple H.T., Smith W. S., Smirniotopoulos J. G. From the archives of the FIP - Primary tumors of the spine: Radiologic-pathologic correlation. <i>Radiographics</i> , 1996. 16(5): p. 1131–1158 [43].	Radiology- Mixed	Review of radiological appearance of various primary tumors of the spine	Review	V	110	6 (12th)
9	Morota, N., Deletis, V., Constantini, S., Kofler, M., Cohen, H., Epstein, F. J. The role of motor evoked potentials during surgery for intramedullary spinal cord tumors. <i>Neurosurgery</i> , 1997. 41(6): p. 1327–1336 [8].	Electrophysiology- Intramedullary	Methodology and utility of evoked potential in surgery for patients with intramedullary spinal cord tumors	Prospective cohort series	II	106	7.2 (7th)
10	Constantini S., Houten J., Miller D. C., et al. Intramedullary spinal cord tumors in children under the age of 3 years. <i>J Neurosurg</i> , 1996. 85(6): p. 1036–1043 [4].	Outcome- Intramedullary	Neurological and functional outcome and survival rate of 13 patients under 3 years old who underwent operative management of intramedullary spinal cord tumors	Case Series	IV	105	6.2 (10th)
11	Sala, F., Palandri, G., Basso, E., et al., Motor evoked potential monitoring improves outcome after surgery for intramedullary spinal cord tumors: A historical control study. <i>Neurosurgery</i> , 2006. 58(6): p. 1129–1141 [11].	Electrophysiology- Intramedullary	Utility of intraoperative neurophysiological monitoring during surgical resection of intramedullary spinal cord tumors	Case Control	III	103	12.8 (2nd)
12	Riggs H.E., Clary W.U. A case of intramedullary sheath cell tumor of the spinal cord – Consideration of vascular nerves as a source of origin. <i>J Neuropathol Exp Neurol</i> , 1957. 16(3): p. 332–336 [50].	Pathology- Intramedullary	A case report of a “sheath cell tumor” originating from the parenchyma of the spinal cord	Case report	IV	102	1.8 (41st)

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