TABLE 36 Excluded studies

Reference	Reason for exclusion
Acikgoz B, Akkurt C, Erbengi A, Bertan V, Ozgen T, Ozcan O. Metastatic spinal cord tumours. *Paraplegia* 1989;**27**:359–63	Outcome measures did not meet inclusion criteria
Adib RS, Anderson JB, Ashken MH, Baumber CD, Bevis CRA, Beynon LL, *et al*. Immediate versus deferred treatment for advanced prostatic cancer: initial results of the Medical Research Council trial. *Br J Urol* 1997;**79**:235–46	Outcome measures did not meet inclusion criteria
Aguilar G, Moras JL, Franco V, Barousse R, Persico S, Blasi A. How to discriminate metastatic from osteoporotic compression spinal fractures. *Bone* 2007;**41**:S12	Abstract
Alafaci C, Salpietro FM, Grasso G, Passalacqua M, Lucerna S, Romano A, *et al*. Spinal cord compression by a metastasizing thymoma. *Acta Neurochirur* 1999;**141**:215–16	Case report
Alberico, RA. Balloon kyphoplasty for multilevel spinal metastases from breast cancer. *J Support Oncol* 2007;**5**:243–6	Case reports
Algra PR, Bloem JL, Tissing H, Falke THM, Arndt JW, Verboom LJ. Detection of vertebral metastases – comparison metween MR imaging and bone-scintigraphy. *Radiographics* 1991;**11**:219–32	Outcome measures did not meet inclusion criteria
Algra PR. Diagnostic-Imaging of Vertebral Metastases. *Rivist Neuroradiol* 1995;**8**:165–75	Review
Alvarez L, Perez-Higueras A, Quinones D, Calvo E, Rossi RE. Vertebroplasty in the treatment of vertebral tumors: postprocedural outcome and quality of life. *Eur Spine J* 2003;**12**:356–60	Outcome measures did not meet inclusion criteria
Ambrosanio G, Lavanga A, Vassallo P, Izzo R, Diano AA, Muto M. Vertebroplasty in the treatment of spine disease. *Intervent Neuroradiol* 2005;**11**:309–23	Outcome measures did not meet inclusion criteria
Amdur RJ, Bennett J, Olivier K, Wallace A, Morris CG, Liu CR, *et al*. A prospective, phase II study demonstrating the potential value and limitation of radiosurgery for spine metastases. *Am J Clin Oncol Cancer Clin Trial* 32.5 2009;**32**:515–20	Outcome measures did not meet inclusion criteria
Ampil F, Caldito G, Thibodeaux J, Sangster G, Baluna R. Radiotherapy for cervical spine metastases in breast cancer patients. *Eur J Orthop Surg Traumatol* 2010;**20**:527–31	Outcome measures did not meet inclusion criteria
Ampil FL, Mills GM, Burton GV. A retrospective study of metastatic lung cancer compression of the cauda equina. *Chest* 2001;**120**:1754–5	Editorial
Ampil FL, Burton GV, Mills GM, Jawahar A, Pelser R, Nanda A. Cauda equina compression in breast cancer--incidence and treatment outcome. *Eur J Gynaecol Oncol* 2001;**22**:257–9	Outcome measures did not meet inclusion criteria
Ampil FL, Nanda A, Willis BK. Metastatic gastrointestinal cancer compressing the spinal cord or cauda equina. *Am J Gastroenterol* 2000;**95**:848–9	Editorial
Ampil FL, Abreo F. Radiotherapeutic palliation of spinal epidural compression in small-cell lung-cancer. *Southern Med J* 1992;**85**:266–9	Outcome measures did not meet inclusion criteria
An HS, Andreshak TG, Nguyen C, Williams A, Daniels D. Can we distinguish between benign versus malignant compression fractures of the spine by magnetic resonance imaging? *Spine* 1995;**20**:1776–82	Outcome measures did not meet inclusion criteria
Appelgren L, Nordborg C, Sjoberg M, Karlsson PA, Nitescu P, Curelaru I. Spinal epidural metastasis: implications for spinal analgesia to treat 'refractory' cancer pain. *J Pain Symptom Manage* 1997;**13**:25–42	Outcome measures did not meet inclusion criteria
Apuzzo ML, Weiss MH, Minassian HV. Epidural spinal metastases: factors related to selection of cases for decompressive laminectomy. *Bull Los Angeles Neurol Soc* 1977;**42**:63–70	Outcome measures did not meet inclusion criteria

continued

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Arguello F, Baggs RB, Duerst RE, Johnstone L, Mcqueen K, Frantz CN. Pathogenesis of vertebral metastasis and epidural spinal-cord compression. *Cancer* 1990;**65**:98–106	Animal study
Bach F, Agerlin N, Sorensen JB, Rasmussen TB, Dombernowsky P, Sorensen PS, *et al*. Metastatic spinal cord compression secondary to lung cancer. *J Clin Oncol* 1992;**10**:1781–7	Outcome measures did not meet inclusion criteria
Baker LL, Goodman SB, Perkash I, Lane B, Enzmann DR. Benign versus pathologic compression fractures of vertebral bodies: assessment with conventional spin-echo, chemical-shift, and STIR MR imaging. *Radiology* 1990;**174**:495–502	Outcome measures did not meet inclusion criteria
Baldini M, Tonnarelli GP, Princi L, Vivenza C, Nizzoli V. Neurological results in spinal cord metastases. *Neurochirurgia* 1979;**22**:159–65	Outcome measures did not meet inclusion criteria
Barr JD, Barr MS, Lemley TJ, McCann RM. Percutaneous vertebroplasty for pain relief and spinal stabilization. *Spine* 2000;**25**:923–8	Outcome measures did not meet inclusion criteria
Bartels RH, Feuth T, Rades D, Hedlund R, Villas C, van der Linden Y, *et al*. External validation of a model to predict the survival of patients presenting with a spinal epidural metastasis. *Cancer Metast Rev* 2011;**30**:153–9	Outcome measures did not meet inclusion criteria
Bartels RHMA, Feuth T, van der Maazen R, Verbeek ALM, Kappelle AC, Grotenhuis JA, *et al*. Development of a model with which to predict the life expectancy of patients with spinal epidural metastasis. *Cancer* 2007;**110**:2042–9	Outcome measures did not meet inclusion criteria
Bauer HC. Posterior decompression and stabilization for spinal metastases. Analysis of sixty-seven consecutive patients. *J Bone Joint Surg Am* 1997;**79:**514–22	Outcome measures did not meet inclusion criteria
Bhalla SK. Metastatic disease of the spine. *Clin Orthop Relat Res* 1970;**73**:52–60	Case report
Bhugaloo AA, Abdullah BJJ, Siow YS, Ng KH. Diffusion weighted MR imaging in acute vertebral compression fractures: Differentiation between malignant and benign causes. *Biomed Imaging Intervent J* 2006;**2**:e12	Outcome measures did not meet inclusion criteria
Bilsky MH, Shannon FJ, Sheppard S, Prabhu V, Boland PJ. Diagnosis and management of a metastatic tumor in the atlantoaxial spine. *Spine* 2002;**27**:1062–9	Outcome measures did not meet inclusion criteria
Bilsky MH, Sonntag VKH, Musleh W, Baig MN, Mendel E, Fehlings MG. Predictors of ambulatory function after decompressive surgery for metastatic epidural spinal cord compression. *Neurosurgery* 2008;**62**:691–2	Outcome measures did not meet inclusion criteria
Bilsky MH, Laufer I, Fourney DR, Groff M, Schmidt MH, Varga PP, *et al*. Reliability analysis of the epidural spinal cord compression scale clinical article. *J Neurosurg Spine* 2010;**13**:324–8	Outcome measures did not meet inclusion criteria
Bilsky MH, Boland P, Lis E, Raizer JJ, Healey JH. Single-stage posterolateral transpedicle approach for spondylectomy, epidural decompression, and circumferential fusion of spinal metastases. *Spine* 2000;**25**:2240–9	Outcome measures did not meet inclusion criteria
Body JJ. Effectiveness and cost of bisphosphonate therapy in tumor bone disease. *Cancer* 2003;**97**:859–65	Review
Bono B, Cazzaniga P, Pini V, Zurrida SM, Spagnolo R, Torelli L, *et al*. Palliative surgery of metastatic bone-disease – a review of 83 cases. *Eur J Cancer* 1991;**27**:556–8	Outcome measures did not meet inclusion criteria
Boogerd W, Vandersande JJ. Diagnosis and treatment of spinal-cord compression in malignant disease. *Cancer Treat Rev* 1993;**19**:129–50	Review
Boogerd W, Vandersande JJ, Kroger R. Early diagnosis and treatment of spinal epidural metastasis in breast cancer – a prospective study. *J Neurol Neurosurg Psychiatry* 1992;**55**:1188–93	Outcome measures did not meet inclusion criteria
Bouza C, Lopez-Cuadrado T, Cediel P, Saz-Parkinson Z, Amate JM. Balloon kyphoplasty in malignant spinal fractures: a systematic review and meta-analysis. *BMC Palliat Care* 2009;**8**:12	Review
Brennan RP, Altstadt TJ, Rodgers RB, Horn EM. Multi-level corpectomies and reconstruction via a single posterolateral approach. *J Clin Neuroscience* 2010;**17**:1399–404	Outcome measures did not meet inclusion criteria
Brodner RA, Berman AJ, Wisniewski M, Nakagawa H. Thyroid carcinoma presenting as epidural metastasis with spinal cord compression. *Mount Sinai J Med* 1975;**4**2:207–15	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Brown PD, Stafford SL, Schild SE, Martenson JA, Schiff D. Metastatic spinal cord compression in patients with colorectal cancer. *J Neurooncol* 1999;**44**:175–80	Outcome measures did not meet inclusion criteria
Byrne MJ, Scheinberg MA, Mavligit G, Dawkins RL. Hepatocellular carcinoma: presentation with vertebral metastases and radicular compression. *Cancer* 1972;**30**:202–5	Outcome measures did not meet inclusion criteria
Byrne TN, Borges LF, Loeffler JS. Metastatic epidural spinal cord compression: Update on management. *Semin Oncol* 2006;**33**: 307–11	Review
Byrne, TN. Spinal cord compression from epidural metastases. *New Engl J Med* 1992;**327**:614–19	Review
Carmody RF, Yang PJ, Seeley GW, Seeger JF, Unger EC, Johnson JE. Spinal cord compression due to metastatic disease: diagnosis with MR imaging versus myelography. *Radiology* 1989;**173**:225–9	Outcome measures did not meet inclusion criteria
Carteni G, Bordonaro R, Giotta F, Lorusso V, Scalone S, Vinaccia V, *et al*. Efficacy and safety of zoledronic acid in patients with breast cancer metastatic to bone: a multicenter clinical trial. *Oncologist* 2006;**11**:841–8	Outcome measures did not meet inclusion criteria
Chadwick DJ, Gingell JC, Gillatt DA, Mukerjee A, Penry JB. Magnetic resonance imaging of spinal metastases. *J R Soc Med* 1991;**84**:196–200	Outcome measures did not meet inclusion criteria
Chaichana KL, Pendleton C, Sciubba DM, Wolinsky JP, Gokaslan ZL. Outcome following decompressive surgery for different histological types of metastatic tumors causing epidural spinal cord compression. Clinical article. *J Neurosurg Spine* 2009;**11**:56–63	Outcome measures did not meet inclusion criteria
Chaichana KL, Woodworth GF, Sciubba DM, McGirt MJ, Witham TJ, Bydon A, *et al*. Predictors of ambulatory function after decompressive surgery for metastatic epidural spinal cord compression. *Neurosurgery* 2008;**62**:683–92	Outcome measures did not meet inclusion criteria
Chamberlain MC, Sloan A, Vrionis F. Systematic review of the diagnosis and management of malignant extradural spine cord compression: the cancer care Ontario practice guidelines initiative's neuro-oncology disease site group. *J Clin Oncol* 2005;**23**:7750–1	Editorial
Chataigner H, Onimus M. Surgery in spinal metastasis without spinal cord compression: indications and strategy related to the risk of recurrence. *Eur Spine J* 2000;**9**:523–7	Outcome measures did not meet inclusion criteria
Chen WT, Shih TT, Chen RC, Lo HY, Chou CT, Lee JM, *et al*. Blood perfusion of vertebral lesions evaluated with gadolinium-enhanced dynamic MRI: in comparison with compression fracture and metastasis. *J Magn Reson Imaging* 2002;**15**:308–14	Outcome measures did not meet inclusion criteria
Chi JH, Gokaslan Z, McCormick P, Tibbs PA, Kryscio RJ, Patchell RA. Selecting treatment for patients with malignant epidural spinal cord compression – does age matter?: results from a randomized clinical trial. *Spine* 2009;**34**:431–5	Outcome measures did not meet inclusion criteria
Chiewvit P, Danchaivijitr N, Sirivitmaitrie K, Chiewvit S, Thephamongkhol K. Does magnetic resonance imaging give value-added than bone scintigraphy in the detection of vertebral metastasis? *J Med Assoc Thai* 2009;**92**:818–29	Outcome measures did not meet inclusion criteria
Cho WI, Chang UK. Comparison of MR imaging and FDG-PET/CT in the differential diagnosis of benign and malignant vertebral compression fractures Clinical article. *J Neurosurg Spine* 2011;**14**:177–83	Outcome measures did not meet inclusion criteria
Cohen JI. Clinical conferences at the Johns Hopkins Hospital. Clinical – pathologic conference. *Johns Hopkins Med J* 1979;**144**:138–44	Case reports
Colletti PM, Dang HT, Deseran MW, Kerr RM, Boswell WD, Ralls PW. Spinal MR imaging in suspected metastases: correlation with skeletal scintigraphy. *Magn Reson Imaging* 1991;**9**:349–55	Outcome measures did not meet inclusion criteria
Colletti PM, Siegel HJ, Woo MY, Young HY, Terk MR. The impact on treatment planning of MRI of the spine in patients suspected of vertebral metastasis: an efficacy study. *Comput Med Imaging Graph* 1996;**20**:159–62	Outcome measures did not meet inclusion criteria
de Medicis E, de Leon-Casasola OA. Reversible paraplegia associated with lumbar epidural analgesia and thoracic vertebral metastasis. *Anesth Analg* 2001;**92**:1316–18	Case reports

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Deb HK, Sengupta P. Spinal cord compression by metastatic testicular embryonal carcinoma. *J Indian Med Assoc* 1983;**81**:168–70	Case reports
Delichtenberg MH, Kvist E, Hjortberg P, Karle A. Adenocarcinoma of the prostate and metastatic medullary compression – a retrospective study of 22 patients. *Scand J Urol Nephrol* 1992;**26**:25–8	Outcome measures did not meet inclusion criteria
Denaro V, Di Martino A, Papalia R, Denaro L. Patients with cervical metastasis and neoplastic pachymeningitis are less likely to Improve neurologically after surgery. *Clin Orthop Relat Res* 2011;**469**:708–14	Outcome measures did not meet inclusion criteria
Dewald RL, Bridwell KH, Prodromas C, Rodts MF. Reconstructive spinal surgery as palliation for metastatic malignancies of the spine. *Spine* 1985;**10**:21–6	Outcome measures did not meet inclusion criteria
Di Martino A, Vincenzi B, Denaro L, Barnaba SA, Papalia R, Santini D, *et al*. 'Internal bracing' surgery in the management of solid tumor metastases of the thoracic and lumbar spine. *Oncol Rep* 2009;**21**:431–5	Outcome measures did not meet inclusion criteria
Donato V, Bonfili P, Bulzonetti N, Santarelli M, Osti MF, Tombolini V, *et al*. Radiation therapy for oncological emergencies. *Anticancer Res* 2001;**21**:2219–24	Outcome measures did not meet inclusion criteria
Eriks IE, Angenot EL, Lankhorst GJ. Epidural metastatic spinal cord compression: functional outcome and survival after inpatient rehabilitation. *Spinal Cord* 2004;**42**:235–9	Outcome measures did not meet inclusion criteria
Ernstberger T, Kogel M, Konig F, Schultz W. Expandable vertebral body replacement in patients with thoracolumbar spine tumors. *Arch Orthop Trauma Surg* 2005;**125**:660–9	Outcome measures did not meet inclusion criteria
Fager CA. Management of malignant intraspinal disease. *Surg Clin North Am* 1967;**47**:743–50	Review
Fattal C, Fabbro M, Rouays-Mabit H, Verollet C, Bauchet L. Metastatic paraplegia and functional outcomes: perspectives and limitations for rehabilitation care. Part 2. *Arch Phys Med Rehabil* 2011;**92**:134–45	Review
Fattal C, Fabbro M, Gelis A, Bauchet L. Metastatic paraplegia and vital prognosis: perspectives and limitations for rehabilitation care. Part 1. *Arch Phys Med Rehabil* 2011;**92**:125–33	Review
Findlay GF. The role of vertebral body collapse in the management of malignant spinal cord compression. *J Neurol Neurosurg Psychiatry* 1987;**50**:151–4	Outcome measures did not meet inclusion criteria
Findlay GFG, Sandeman DR, Buxton P. The role of needle biopsy in the management of malignant spinal compression. *Br J Neurosurg* 1988;**2**:479–84	Outcome measures did not meet inclusion criteria
Flors L, Lonjedo E, Leiva-Salinas C, Marti-Bonmati L, Martinez-Rodrigo JJ, Lopez-Perez E, *et al*. Vesselplasty: a new technical approach to treat symptomatic vertebral compression fractures. *AJR* 2009;**193**:218–26	Outcome measures did not meet inclusion criteria
Flynn DF, Shipley WU. Management of spinal-cord compression secondary to metastatic prostatic-carcinoma. *Urol Clin North Am* 1991;**18**:145–52	Review
Fontana M, Pompili A, Cattani F, Mastrostefano R. Metastatic spinal cord compression. Follow-up study. *J Neurosurg Sci* 1980;**24**:141–6	Outcome measures did not meet inclusion criteria
Francken AB, Hong AM, Fulham MJ, Millward MJ, McCarthy WH, Thompson JF. Detection of unsuspected spinal cord compression in melanoma patients by 18F-fluorodeoxyglucose-positron emission tomography. *Eu J Surg Oncol* 2005;**31**:197–204	Outcome measures did not meet inclusion criteria
Freundt K, Meyners T, Bajrovic A, Basic H, Karstens JH, Adamietz IA, *et al*. Radiotherapy for oligometastatic disease in patients with spinal cord compression (MSCC) from relatively radioresistant tumors. Strahlenther Onkol 2010;**186**:218–23	Outcome measures did not meet inclusion criteria
Fu T-S, Chen L-H, Liao J-C, Lai P-L, Niu C-C, Chen W-J. Magnetic resonance imaging characteristics of benign and malignant vertebral fractures. *Chang Gung Med J* 2004;27:808–15	Outcome measures did not meet inclusion criteria
Fujii M, Abe K, Hayashi K, Kosuda S, Yano F, Watanabe S, *et al*. Honda sign and variants in patients suspected of having a sacral insufficiency fracture. *Clin Nuclear Med* 2005;**30**:165–9	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Fujii Y, Higashi Y, Owada F, Okuno T, Mizuno H, Mizuno H. Magnetic-resonance-imaging for the diagnosis of prostate-cancer metastatic to bone. *Br J Urol* 1995;**75**:54–8	Outcome measures did not meet inclusion criteria
Fukushige T, Sano T, Yamada S, Kaneko S, Ooish Y, Kano T. Spinal paralysis due to spinal metastasis or cancerous invasion. Proceedings of the 12th International Pain Clinic: World Society of Pain Clinicians 2006:131–3	Outcome measures did not meet inclusion criteria
Furstenberg CH, Wiedenhofer B, Gerner HJ, Putz C. The effect of early surgical treatment on recovery in patients with metastatic compression of the spinal cord. *J Bone Joint Surg Br* 2009;**91**:240–4	Outcome measures did not meet inclusion criteria
Gaitanis IN, Hadjipavlou AG, Katonis PG, Tzermiadianos MN, Pasku DS, Patwardhan AG. Balloon kyphoplasty for the treatment of pathological vertebral compressive fractures. *Eur Spine J* 2005;**14**:250–60	Outcome measures did not meet inclusion criteria
Galasko CSB. Spinal instability secondary to metastatic cancer. *J Bone Joint Surg Br* 1991;**73**:104–8	Outcome measures did not meet inclusion criteria
Garcia-Picazo A, Capilla RP, Pulido RP, Garcia de SR. Utility of surgery in the treatment of epidural vertebral metastases. *Acta Neurochirur* 1990;**103**:131–8	Outcome measures did not meet inclusion criteria
Gasbarrini A, Li HM, Cappuccio M, Mirabile L, Paderni S, Terzi S, *et al*. Efficacy evaluation of a new treatment algorithm for spinal metastases. *Spine* 2010;**35**:1466–70	Outcome measures did not meet inclusion criteria
George R, Jeba J, Ramkumar G, Chacko AG, Leng M, Tharyan P. Interventions for the treatment of metastatic extradural spinal cord compression in adults. *Cochrane Database Syst Rev* 2008;**4**:CD006716	Review
Georgy BA, Wong W. Plasma-mediated radiofrequency ablation assisted percutaneous cement injection for treating advanced malignant vertebral compression fractures. *AJNR Am J Neuroradiol* 2007;**28**:700–5	Outcome measures did not meet inclusion criteria
Gerszten PC, Mendel E, Yamada Y. Radiotherapy and radiosurgery for metastatic spine disease: what are the options, indications, and outcomes? *Spine* 2009;**34**:S78–92	Review
Ghelman B, Lospinuso MF, Levine DB, Oleary PF, Burke SW. Percutaneous computed-tomography-guided biopsy of the thoracic and lumbar spine. *Spine* 1991;**16**:736–9	Outcome measures did not meet inclusion criteria
Gibbs IC, Kamnerdsupaphon P, Ryu MR, Dodd R, Kiernan M, Change SD, *et al*. Image-guided robotic radiosurgery for spinal metastases. *Radiother Oncol* 2007;**82**:185–90	Outcome measures did not meet inclusion criteria
Gilbert R, Posner JB. Extradural spinal-cord compression from metastatic cancer – diagnosis and treatment. *Neurology* 1977;**27**:366	Abstract
Gilbert RW, Kim JH, Posner JB. Epidural spinal cord compression from metastatic tumor: diagnosis and treatment. *Ann Neurol* 1978;**3**:40–51	Outcome measures did not meet inclusion criteria
Godersky JC, Smoker WR, Knutzon R. Use of magnetic resonance imaging in the evaluation of metastatic spinal disease. *Neurosurgery* 1987;**21**:676–80	Outcome measures did not meet inclusion criteria
Gonzalez-Barcena D, Vadillo-Buenfil M, Cortez-Morales A, Fuentes-Garcia M, Cardenas-Cornejo I, Comaru-Schally AM, *et al*. Luteinizing hormone-releasing hormone antagonist cetrorelix as primary single therapy in patients with advanced prostatic cancer and paraplegia due to metastatic invasion of spinal cord. *Urology* 1995;**45**:275–81	Outcome measures did not meet inclusion criteria
Gorter K. Results of laminectomy in spinal cord compression due to tumours. *Acta Neurochirur* 1978;**42**:177–87	Outcome measures did not meet inclusion criteria
Grant R, Papadopoulos SM, Greenberg HS. Metastatic epidural spinal-cord compression. *Neurol Clin* 1991;**9**:825–41	Review
Greenberger JS. The pathophysiology and management of spine metastasis from lung-cancer. *J Neuroncol* 1995;**23**:109–20	Review
Grem JL, Burgess J, Trump DL. Clinical features and natural history of intramedullary spinal cord metastasis. *Cancer* 1985;**56**:2305–14	Outcome measures did not meet inclusion criteria

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Grommes C, Bosl GJ, DeAngelis LM. Treatment of epidural spinal cord involvement from germ cell tumors with chemotherapy. *Cancer* 2011;**117**:1911–16	Outcome measures did not meet inclusion criteria
Grosh W, Greco FA. Spinal cord compression: comparison of extradural and intramedullary metastases. *Tenn Med* 1981;**74**:821–4	Outcome measures did not meet inclusion criteria
Guo Y, Palmer JL, Bianty J, Konzen B, Shin K, Bruera E. Advance directives and do-not-resuscitate orders in patients with cancer with metastatic spinal cord compression: advanced care planning implications. *J Palliat Med* 2010;**13**:513–17	Outcome measures did not meet inclusion criteria
Guo Y, Young B, Palmer JL, Mun Y, Bruera E. Prognostic factors for survival in metastatic spinal cord compression: a retrospective study in a rehabilitation setting. *Am J Phys Med Rehabil* 2003;**82**:665–8	Outcome measures did not meet inclusion criteria
Ha'Eri GB, Amirpour V. Surgical treatment of spinal metastases. *J Orthop Surg Tech* 1987;**3**:175–81	Outcome measures did not meet inclusion criteria
Haerer AF, Smith RR. Neoplasms involving the spinal cord: an analysis of 85 consecutive cases. *Southern Med J* 1968;**61**:801–7	Outcome measures did not meet inclusion criteria
Hall AJ, Mackay NN. The results of laminectomy for compression of the cord or cauda equina by extradural malignant tumour. *J Bone Joint Surg Br* 1973;**55**:497–505	Outcome measures did not meet inclusion criteria
Hamamoto Y, Kataoka M, Senba T, Uwatsu K, Sugawara Y, Inoue T, *et al*. Vertebral metastases with high risk of symptomatic malignant spinal cord compression. *Jpn J Clin Oncol* 2009;**39**:431–4	Outcome measures did not meet inclusion criteria
Harrington KD. The use of methylmethacrylate for vertebral-body replacement and anterior stabilization of pathological fracture-dislocations of the spine due to metastatic malignant disease. *J Bone Joint Surg Am* 1981;**63**:36–46	Outcome measures did not meet inclusion criteria
Harrington KD. Vertebral compression fractures: differentiation between benign and malignant causes. *Iowa Orthop J* 1993;**13**:85–96	Outcome measures did not meet inclusion criteria
Hatrick NC, Lucas JD, Timothy AR, Smith MA. The surgical treatment of metastatic disease of the spine. *Radiother Oncol* 2000;**56**:335–9	Outcome measures did not meet inclusion criteria
Helweg-Larsen S, Laursen H. Clinical and autopsy findings in spinal cord compression due to metastatic disease. *Eur J Neurol* 1998;**5**:587–92	Outcome measures did not meet inclusion criteria
Helweg-Larsen S. Clinical outcome in metastatic spinal cord compression. A prospective study of 153 patients. *Acta Neurol Scand* 1996;**94**:269–75	Outcome measures did not meet inclusion criteria
Helweg-Larsen S, Wagner A, Kjaer L, Johnsen A, Boesen J, Palner T, *et al*. Comparison of myelography combined with postmyelographic spinal CT and MRI in suspected metastatic disease of the spinal canal. *J Neurooncol* 1992;**13**:231–7	Outcome measures did not meet inclusion criteria
Helweg-Larsen S, Johnsen A, Boesen J, Sorensen PS. Radiologic features compared to clinical findings in a prospective study of 153 patients with metastatic spinal cord compression treated by radiotherapy. *Acta Neurochirur* 1997;**139**:105–11	Outcome measures did not meet inclusion criteria
Helweg-Larsen S, Sorensen PS. Symptoms and signs in metastatic spinal cord compression: a study of progression from first symptom until diagnosis in 153 patients. *Eur J Cancer* 1994;**30**:396–8	Outcome measures did not meet inclusion criteria
Helyar V, Mohan HK, Barwick T, Livieratos L, Gnanasegaran G, Clarke SE, *et al*. The added value of multislice SPECT/CT in patients with equivocal bony metastasis from carcinoma of the prostate. *Eur J Nucl Med Mol Imaging* 2010;**37**:706–13	Outcome measures did not meet inclusion criteria
Herneth AM, Philipp MO, Naude J, Funovics M, Beichel RR, Bammer R, *et al*. Vertebral metastases: assessment with apparent diffusion coefficient. *Radiology* 2002;**225**:889–94	Outcome measures did not meet inclusion criteria
Hessler C, Vettorazzi E, Madert J, Bokemeyer C, Panse J. Actual and predicted survival time of patients with spinal metastases of lung cancer evaluation of the robustness of the Tokuhashi Score. *Spine* 2011;**36**:983–9	Outcome measures did not meet inclusion criteria
Hessler C, Vettorazzi E, Madert J, Bokemeyer C, Panse J. Dynamics of neurological deficit after surgical decompression of symptomatic vertebral metastases. *Spine* 2009;**34**:566–71	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Hill ME, Richards MA, Gregory WM, Smith P, Rubens RD. Spinal cord compression in breast cancer: a review of 70 cases. *Br J Cancer* 1993;**68**:969–73	Outcome measures did not meet inclusion criteria
Hirabayashi H, Ebara S, Kinoshita T, Yuzawa Y, Nakamura I, Takahashi J, *et al*. Clinical outcome and survival after palliative surgery for spinal metastases – palliative surgery in spinal metastases. *Cancer* 2003;**97**:476–84	Outcome measures did not meet inclusion criteria
Hitchins RN, Philip PA, Wignall B, Newlands ES, Begent RH, Rustin GJ, *et al*. Bone disease in testicular and extragonadal germ cell tumours. *Br J Cancer* 1988;**58**:793–6	Outcome measures did not meet inclusion criteria
Hodler J, Peck D, Gilula LA. Midterm outcome after vertebroplasty: predictive value of technical and patient-related factors. *Radiology* 2003;**227**:662–8	Outcome measures did not meet inclusion criteria
Holodny AI, Vaicys C, Hinrichs CR. Masking of metastases to the spine by gadolinium enhancement. *J Emerg Med* 2002;**23**:279–81	Outcome measures did not meet inclusion criteria
Holoye P, Libnoch J, Cox J, Kun L, Byhardt R, Almagro U, *et al*. Spinal cord metastasis in small cell carcinoma of the lung. *Int J Radiat Oncol Biol Phys* 1984;**10**:349–56	Outcome measures did not meet inclusion criteria
Hoskin PJ, Grover A, Bhana R. Metastatic spinal cord compression: radiotherapy outcome and dose fractionation. *Radiother Oncol* 2003;**68**:175–80	Outcome measures did not meet inclusion criteria
Hosono N, Ueda T, Tamura D, Aoki Y, Yoshikawa H. Prognostic relevance of clinical symptoms in patients with spinal metastases. *Clin Orthop Relat Res* 2005;**436**:196–201	Outcome measures did not meet inclusion criteria
Jame JM, Chen CN, Chen KY. Importance of early diagnosis and radiotherapy in spinal cord compression by metastatic neoplasms. *Taiwan i Hsueh Hui Tsa Chih – J Formosan Med Assoc* 1981;**80**:1178–85	Outcome measures did not meet inclusion criteria
Jang JS, Lee SH. Efficacy of percutaneous vertebroplasty combined with radiotherapy in osteolytic metastatic spinal tumors. *J Neurosurg Spine* 2005;**2**:243–8	Outcome measures did not meet inclusion criteria
Jankowski R, Nowak S, Zukiel R, Blok T, Paprzycki W, Szymas J. Application of internal stabilisation in the surgical treatment of spinal metastases. *Neurol Neurochirurg Polska* 2008;**42**:323–31	Outcome measures did not meet inclusion criteria
Jansson KA, Bauer HC. Survival, complications and outcome in 282 patients operated for neurological deficit due to thoracic or lumbar spinal metastases. *Eur Spine J* 2006;**15**:196–202	Outcome measures did not meet inclusion criteria
Jawahar A, Ampil F, Reddy PK, Hartman GH, Sathyanarayana S, Nanda A. Analysis of outcome and prognostic factors in metastatic cauda equina compression: A 20-year single institution experience. *Neurosurg Q* 2002;**12**:108–13	Outcome measures did not meet inclusion criteria
Jensen AO, Jacobsen JB, Norgaard M, Yong M, Fryzek JP, Sorensen HT. Incidence of bone metastases and skeletal-related events in breast cancer patients: a population-based cohort study in Denmark. *BMC Cancer* 2011;**11**.	Outcome measures did not meet inclusion criteria
Jha RM, Hirsch AE, Yoo AJ, Ozonoff A, Growney M, Hirsch JA. Palliation of compression fractures in cancer patients by vertebral augmentation: a retrospective analysis. *J Neurointerventional Surg* 2010;**2**:221–8	Outcome measures did not meet inclusion criteria
Johnson AJ, Ying J, El GT, Timmerman RD, Kim RY, Littenberg B. Which MR imaging sequences are necessary in determining the need for radiation therapy for cord compression? A prospective study. *AJNR* 2007;**28**:32–7	Outcome measures did not meet inclusion criteria
Jordan E, Choe D, Miller T, Chamarthy M, Brook A, Freeman LM. Utility of bone scintigraphy to determine the appropriate vertebral augmentation levels. *Clin Nucl Med* 2010;**35**:687–91	Outcome measures did not meet inclusion criteria
Jung HS, Jee WH, McCauley TR, Ha KY, Choi KH. Discrimination of metastatic from acute osteoporotic compression spinal fractures with MR imaging. *Radiographics* 2003;**23**:179–87	Outcome measures did not meet inclusion criteria
Kakulas BA, Harper CG, Shibasaki K, Bedbrook GM. Vertebral metastases and spinal cord compression. *Clin Exp Neurol* 1978;**15**:98–113	Outcome measures did not meet inclusion criteria
Kamholtz R, Sze G. Current imaging in spinal metastatic disease. *Semin Oncol* 1991;**18**:158–69	Review

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Kaminski HJ, Diwan VG, Ruff RL. 2nd occurrence of spinal epidural metastases. *Neurology* 1991;**41**:744–6	Outcome measures did not meet inclusion criteria
Kanis JA, McCloskey E V, Powles T, Paterson A H G, Ashley S, Spector T. A high incidence of vertebral fracture in women with breast cancer. *Br J Cancer* 1999;**79**:1179–81	Outcome measures did not meet inclusion criteria
Karchevsky M, Babb JS, Schweitzer ME. Can diffusion-weighted imaging be used to differentiate benign from pathologic fractures? A meta-analysis. *Skeletal Radiol* 2008;**37**:791–5	Review
Karikari IO, Powers CJ, Isaacs RE. Simple method for determining the need for sternotomy/manubriotomy with the anterior approach to the cervicothoracic junction. *Neurosurgery* 2009;**65**(Suppl. 1):E165–6	Outcome measures did not meet inclusion criteria
Kasai Y, Kawakita E, Uchida A. Clinical profile of long-term survivors of breast or thyroid cancer with metastatic spinal tumours. *Int Orthop* 2007;**31**:171–5	Outcome measures did not meet inclusion criteria
Katagiri H, Takahashi M, Inagaki J, Kobayashi H, Sugiura H, Yamamura S, *et al*. Clinical results of nonsurgical treatment for spinal metastases. *Int J Radiat Oncol Biol Phys* 1998;**42**:1127–32	Outcome measures did not meet inclusion criteria
Khaw FM, Worthy SA, Gibson MJ, Gholkar A. The appearance on MRI of vertebrae in acute compression of the spinal cord due to metastases. *J Bone Joint Surg Br* 1999;**81**:830–4	Outcome measures did not meet inclusion criteria
Kienstra GE, Terwee CB, Dekker FW, Canta LR, Borstlap AC, Tijssen CC, *et al*. Prediction of spinal epidural metastases. *Arch Neurol* 2000;**57**:690–5	Outcome measures did not meet inclusion criteria
Kim CH, Chung CK, Jahng TA, Kim HJ. Surgical outcome of spinal hepatocellular carcinoma metastases. *Neurosurgery* 2011;**68**:888–96	Outcome measures did not meet inclusion criteria
Kim DS, Hong SH, Choi JY, Paeng JC, Kim NR, Jun WS, *et al*. Magnetic resonance imaging diagnoses of bone scan abnormalities in breast cancer patients. *Nucl Med Comm* 2009;**30**:736–41	Outcome measures did not meet inclusion criteria
Kim HJ, Kim YJ, Seo MD, Yi HG, Lee SH, Lee SM, *et al*. Patterns of palliative procedures and clinical outcomes in patients with advanced non-small cell lung cancer. *Lung Cancer* 2009;**65**:242–6	Outcome measures did not meet inclusion criteria
Kim HJ, Ryu KN, Choi WS, Choi BK, Choi JM, Yoon Y. Spinal involvement of hematopoietic malignancies and metastasis: differentiation using MR imaging. *Clin Imaging* 1999;**23**:125–33	Outcome measures did not meet inclusion criteria
Kim JK, Learch TJ, Colletti PM, Lee JW, Tran SD, Terk MR. Diagnosis of vertebral metastasis, epidural metastasis, and malignant spinal cord compression: are T(1)-weighted sagittal images sufficient? *Magn Reson Imaging* 2000;**18**:819–24	Outcome measures did not meet inclusion criteria
Kim MK, Lee KH, Hyun MS, Bae SH, Ryoo HM. Metastatic spinal cord compression in patients with hepatocellular carcinoma. *J Clin Oncol* 2005;**23**:367S	Abstract
Kim RY. Extradural spinal cord compression from metastatic tumor. *Alabama Med* 1990;**60**:10–15	Outcome measures did not meet inclusion criteria
Kim RY, Spencer SA, Meredith RF, Weppelmann B, Lee JY, Smith JW, *et al*. Extradural spinal cord compression: analysis of factors determining functional prognosis – prospective study. *Radiology* 1990;**176**:279–82	Outcome measures did not meet inclusion criteria
King GJ, Kostuik JP, McBroom RJ, Richardson W. Surgical management of metastatic renal carcinoma of the spine. *Spine* 1991;**16**:265–71	Outcome measures did not meet inclusion criteria
Kocialkowski A, Webb JK. Metastatic spinal tumours: survival after surgery. *Eur Spine J* 1992;**1**:43–8	Outcome measures did not meet inclusion criteria
Kondo T, Hozumi T, Goto T, Seichi A, Nakamura K. Intraoperative radiotherapy combined with posterior decompression and stabilization for non-ambulant paralytic patients due to spinal metastasis. *Spine* 2008;**33**:1898–904	Outcome measures did not meet inclusion criteria
Kovner F, Spigel S, Rider I, Otremsky I, Ron I, Shohat E, *et al.* Radiation therapy of metastatic spinal cord compression. Multidisciplinary team diagnosis and treatment. *J Neurooncol* 1999;**42**:85–92	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Kraiwattanapong C, Buranapanitkit B, Kiriratnikom T. Results of radiotherapy in non round cell spinal metastasis. *J Med Assoc Thai* 2004;**87**:239–45	Outcome measures did not meet inclusion criteria
Kubota T, Yamada K, Ito H, Kizu O, Nishimura T. High-resolution imaging of the spine using multidetector-row computed tomography: differentiation between benign and malignant vertebral compression fractures. *J Comput Assist Tomogr* 2005;**29**:712–19	Outcome measures did not meet inclusion criteria
Kwon YM, Kim KS, Kuh SU, Chin DK, Jin BH, Cho YE. Survival rate and neurological outcome after operation for advanced spinal metastasis (Tomita's classification ≥Type 4). *Yonsei Medi J* 2009;**50**:689–96	Outcome measures did not meet inclusion criteria
Lafforgue PF, Chagnaud CJ, Daver LMH, Daumenlegre VMS, Peragut JC, Kasbarian MJ, *et al*. Intervertebral-disk vacuum phenomenon secondary to vertebral collapse – prevalence and significance. *Radiology* 1994;**193**:853–8	Outcome measures did not meet inclusion criteria
Laredo JD, Lakhdari K, Bellaiche L, Hamze B, Janklewicz P, Tubiana JM. Acute vertebral collapse: CT findings in benign and malignant nontraumatic cases. *Radiology* 1995;**194**:41–8	Outcome measures did not meet inclusion criteria
Latini P, Maranzano E, Ricci S, Aristei C, Checcaglini F, Panizza BM, *et al*. Role of radiotherapy in metastatic spinal cord compression: preliminary results from a prospective trial. *Radiother Oncol* 1989;**15**:227–33	Outcome measures did not meet inclusion criteria
Laufer I, Rose P, Lis E, Bilsky MH, Yamada Y. An analysis of risk factors for vertebral body fracture following high-dose single-fraction image guided intensity modulated radiotherapy (IG IMRT) of spine metastases. *Int J Radiat Oncol Biol Phys* 2008;**72**:S52	Abstract
Lavdas E, Vlychou M, Arikidis N, Kapsalaki E, Roka V, Fezoulidis IV. Comparison of T1-weighted fast spin-echo and T1-weighted fluid-attenuated inversion recovery images of the lumbar spine at 3.0 Tesla. *Acta Radiol* 2010;**51**:290–5	Outcome measures did not meet inclusion criteria
Leithner A, Radl R, Gruber G, Hochegger M, Leithner K, Welkerling H, *et al*. Predictive value of seven preoperative prognostic scoring systems for spinal metastases. *Eur Spine J* 2008;**17**:1488–95	Outcome measures did not meet inclusion criteria
Leviov M, Dale J, Stein M, Ben-Shahar M, Ben-Arush M, Milstein D, *et al*. The management of metastatic spinal cord compression: a radiotherapeutic success ceiling. *Int J Radiat Oncol Biol Phys* 1993;**27**:231–4	Outcome measures did not meet inclusion criteria
Li MH, Holtas S, Larsson EM. MR-imaging of spinal lymphoma. *Acta Radiol* 1992;**33**:338–42	Outcome measures did not meet inclusion criteria
Li MH, Holtas S, Larsson EM. MRI of extradural spinal tumours at 0.3 T. *Neuroradiology* 1993;**35**:370–4	Outcome measures did not meet inclusion criteria
Liao S-H, Yang Z-X, Tang Z. Factors affecting the recovery of spinal functions in patients with spinal metastatic carcinoma. *Chinese J Clin Rehab* 2006;**10**:66-167	Outcome measures did not meet inclusion criteria
Liauw W, Segelov E, Lih A, Dunleavy R, Links M, Ward R. Off-trial evaluation of bisphosphonates in patients with metastatic breast cancer. *BMC Cancer* 2005;**5**:89	Outcome measures did not meet inclusion criteria
Liaw CC, Leung W, Ng KT, Shih LY, Chen MS, Tang SG, *et al*. Malignant lesions causing spinal compression: review of 139 cases. *Taiwan yi xue hui za zhi. J Formosan Med Assoc* 1988;**87**:310–16	Outcome measures did not meet inclusion criteria
Lien HH, Blomlie V, Heimdal K. Magnetic resonance imaging of malignant extradural tumors with acute spinal cord compression. *Acta Radiol* 1990;**31**:187–90	Outcome measures did not meet inclusion criteria
Lin F, Lei Y, Li YB. Influence of lesion ratio on diagnostic performance of in-phase/opposed-phase imaging and apparent diffusion coefficient for differentiating acute benign vertebral fractures and metastases. *Chinese Med J* 2009;**122**:1293–9	Outcome measures did not meet inclusion criteria
Liskow A, Chang CH, DeSanctis P, Benson M, Fetell M, Housepian E. Epidural cord compression in association with genitourinary neoplasms. *Cancer* 1986;**58**:949–54	Outcome measures did not meet inclusion criteria
Loughrey GJ, Collins CD, Todd SM, Brown NM, Johnson RJ. Magnetic resonance imaging in the management of suspected spinal canal disease in patients with known malignancy. *Clin Radiol* 2000;**55**:849–55	Outcome measures did not meet inclusion criteria

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Lovelock DM, Zhang ZG, Jackson A, Keam J, Bekelman J, Bilsky M, *et al*. Correlation of local failure with measures of dose insufficiency in the high-dose single-fraction treatment of bony metastases. *Int J Radiat Oncol Biol Phys* 2010;**77**:1282–7	Outcome measures did not meet inclusion criteria
Maeda M, Sakuma H, Maier SE, Takeda K. Quantitative assessment of diffusion abnormalities in benign and malignant vertebral compression fractures by line scan diffusion-weighted imaging. *AJR Am J Roentgenol* 2003;**181**:1203–9	Outcome measures did not meet inclusion criteria
Maranzano E, Latini P, Beneventi S, Marafioti L, Piro F, Perrucci E, *et al*. Comparison of two different radiotherapy schedules for spinal cord compression in prostate cancer. *Tumori* 1998;**84**:472–7	Outcome measures did not meet inclusion criteria
Maranzano E, Latini P. Effectiveness of radiation therapy without surgery in metastatic spinal cord compression: final results from a prospective trial. *Int J Radiat Oncol Biol Phys* 1995;**32**:959–67	Outcome measures did not meet inclusion criteria
Maranzano E, Latini P, Checcaglini F, Ricci S, Panizza BM, Aristei C, *et al*. Radiation therapy in metastatic spinal cord compression. A prospective analysis of 105 consecutive patients. *Cancer* 1991;**67**:1311–17	Outcome measures did not meet inclusion criteria
Maranzano E, Trippa F, Casale M, Anselmo P, Rossi R. Reirradiation of metastatic spinal cord compression: definitive results of two randomized trials. *Radiother Oncol* 2011;**98**:234–7	Outcome measures did not meet inclusion criteria
Maranzano E, Latini P, Perrucci E, Beneventi S, Lupattelli M, Corgna E. Short-course radiotherapy (8 Gy x 2) in metastatic spinal cord compression: an effective and feasible treatment. *Int J Radiat Oncol Biol Phys* 1997;**38**:1037–44	Review
Marquardt G, Setzer M, Seifert V. Protein S-100b as serum marker for prediction of functional outcome in metastatic spinal cord compression. *Acta Neurochir* 2004;**146**:449–52	Outcome measures did not meet inclusion criteria
Masala S, Mastrangeli R, Petrella MC, Massari F, Ursone A, Simonetti G. Percutaneous vertebroplasty in 1,253 levels: results and long-term effectiveness in a single centre. *Eur Radiol* 2009;**19**:165–71	Outcome measures did not meet inclusion criteria
Mavrogenis AF, Pneumaticos S, Sapkas GS, Papagelopoulos PJ. Metastatic epidural spinal cord compression. *Orthopedics* 2009;**32**:431–9	Review
Mazurkiewicz T, Godlewski P, Mazurkiewicz M. Radiological assessment of indications for surgical treatment of spinal metastases. *Ortoped Traumatol Rehab* 2003;**5**:167–71	Abstract
Metser U, Lerman H, Blank A, Lievshitz G, Bokstein F, Even-Sapir E. Malignant involvement of the spine: assessment by 18F-FDG PET/CT. *J Nucl Med* 2004;**45**:279–84	Outcome measures did not meet inclusion criteria
Mikami Y, Numaguchi Y, Kobayashi N, Fuwa S, Hoshikawa Y, Saida Y. Therapeutic effects of percutaneous vertebroplasty for vertebral metastases. *Jpn J Radiol* 2011;**29**:202–6	Outcome measures did not meet inclusion criteria
Milross CG, Davies MA, Fisher R, Mameghan J, Mameghan H. The efficacy of treatment for malignant epidural spinal cord compression. *Australas Radiol* 1997;**41**:137–42	Outcome measures did not meet inclusion criteria
Minart D, Vallee JN, Cormier E, Chiras J. Percutaneous coaxial transpedicular biopsy of vertebral body lesions during vertebroplasty. *Neuroradiology* 2001;**43**:409–12	Outcome measures did not meet inclusion criteria
Mizumoto M, Harada H, Asakura H, Hashimoto T, Furutani K, Hashii H, *et al*. Prognostic Factors and a Scoring System for Survival After Radiotherapy for Metastases to the Spinal Column A Review of 544 Patients at Shizuoka Cancer Center Hospital. *Cancer* 2008;**113**:2816–22	Outcome measures did not meet inclusion criteria
Mizumoto M, Harada H, Asakura H, Hashimoto T, Furutani K, Hashii H, *et al*. Radiotherapy for patients with metastases to the spinal column: a review of 603 patients at shizuoka cancer center hospital. *Int J Radiat Oncol Biol Phys* 2011;**79**:208–13	Outcome measures did not meet inclusion criteria
Moulding HD, Elder JB, Lis E, Lovelock DM, Zhang Z, Yamada Y, *et al*. Local disease control after decompressive surgery and adjuvant high-dose single-fraction radiosurgery for spine metastases. *J Neurosurg Spine* 2010;**13**:87–93	Outcome measures did not meet inclusion criteria
Mulkern RV, Schwartz RB. In re: Characterization of benign and metastatic vertebral compression fractures with quantitative diffusion MR imaging. *Am J Neuroradiol* 2003;**24**:1489–90	Letter

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Murakami H, Kawahara N, Demura S, Kato S, Yoshioka K, Tomita K. Total en bloc spondylectomy for lung cancer metastasis to the spine. *J Neurosurg Spine* 2010;**13**:414–17	Outcome measures did not meet inclusion criteria
Muresan MM, Olivier P, Leclere J, Sirveaux F, Brunaud L, Klein M, *et al*. Bone metastases from differentiated thyroid carcinoma. *Endocr Relat Cancer* 2008;**15**:37–49	Review
Nagata M, Ueda T, Komiya A, Suzuki H, Akakura K, Ishihara M, *et al*. Treatment and prognosis of patients with paraplegia or quadriplegia because of metastatic spinal cord compression in prostate cancer. *Prostate Cancer Prostatic Dis* 2003;**6**:169–73	Outcome measures did not meet inclusion criteria
Nanassis K, AlexiadouRudolf C, Rudolf J, Frowein RA. Surgical indications and prognosis in spinal metastases. *Neurosurg Rev* 1997;**20**:99–103	Outcome measures did not meet inclusion criteria
Nieder C, Haukland E, Pawinski A, Dalhaug A. Pathologic fracture and metastatic spinal cord compression in patients with prostate cancer and bone metastases. *BMC Urol* 2010;**10**:23	Outcome measures did not meet inclusion criteria
Nieder C, Haukland E, Pawinski A, Dalhaug A. Validation of new prognostic and predictive scores by sequential testing approach. *Strahlenther Onkol* 2010;**186**:169–73	Outcome measures did not meet inclusion criteria
North RB, LaRocca VR, Schwartz J, North CA, Zahurak M, Davis RF, *et al*. Surgical management of spinal metastases: analysis of prognostic factors during a 10-year experience. *J Neurosurg Spine* 2005;**2**:564–73	Outcome measures did not meet inclusion criteria
Ogihara S, Seichi A, Hozumi T, Oka H, Ieki R, Nakamura K, *et al*. Prognostic factors for patients with spinal metastases from lung cancer. *Spine* 2006;**31**:1585–90	Outcome measures did not meet inclusion criteria
Oztekin O, Ozan E, Hilal AZ, Unal G, Abali Y. SSH-EPI diffusion-weighted MR imaging of the spine with low b values: is it useful in differentiating malignant metastatic tumor infiltration from benign fracture edema? *Skeletal Radiol* 2009;**38**:651–8	Outcome measures did not meet inclusion criteria
Papagelopoulos PJ, Mavrogenis AF, Kelekis AD, Katonis P, Galanis EC, Wenger DE, *et al*. Percutaneous osteoplasty for pelvic and spine metastases. *Orthopedics* 2006;**29**:316–23	Review
Parizel PM, Baleriaux D, Rodesch G, Segebarth C, Lalmand B, Christophe C, *et al.* Gd-DTPA-enhanced MR imaging of spinal tumors. *Am J Neuroradiol* 1989;**10**:249–58	Outcome measures did not meet inclusion criteria
Park SW, Lee JH, Ehara S, Park YB, Sung SO, Choi JA, *et al*. Single shot fast spin echo diffusion-weighted MR imaging of the spine; Is it useful in differentiating malignant metastatic tumor infiltration from benign fracture edema? *Clin Imaging* 2004;**28**:102–8	Outcome measures did not meet inclusion criteria
Petren-Mallmin M. Clinical and experimental imaging of breast cancer metastases in the spine. *Acta Radiol Suppl* 1994;**391**:1–23	Outcome measures did not meet inclusion criteria
Pigott KH, Baddeley H, Maher EJ. Pattern of disease in spinal cord compression on MRI scan and implications for treatment. *Clin Oncol* 1994;**6**:7–10	Outcome measures did not meet inclusion criteria
Piper KJ, Buscall KL. MRI reporting by radiographers: the construction of an objective structured examination. *Radiography* 2008;**14**:78–89	Outcome measures did not meet inclusion criteria
Plank C, Koller A, Mueller-Mang C, Bammer R, Thurnher MM. Diffusion-weighted MR imaging (DWI) in the evaluation of epidural spinal lesions. *Neuroradiology* 2007;**49**:977–85	Outcome measures did not meet inclusion criteria
Pneumaticos SG, Chatziioannou SN, Savvidou C, Pilichou A, Rontogianni D, Korres DS. Routine needle biopsy during vertebral augmentation procedures. Is it necessary? *Eur Spine J* 2010;**19**:1894–8	Outcome measures did not meet inclusion criteria
Podd TJ, Carpenter DS, Baughan CA, Percival D, Dyson P. Spinal cord compression: prognosis and implications for treatment fractionation. *Clin Oncol* 1992;**4**:341–4	Outcome measures did not meet inclusion criteria
Pointillart V, Vital JM, Salmi R, Diallo A, Quan GM. Survival prognostic factors and clinical outcomes in patients with spinal metastases. *J Cancer Res Clin Oncol* 2011;**137**:849–56	Outcome measures did not meet inclusion criteria
Pollono D, Tomarchia S, Drut R, Ibanez O, Ferreyra M, Cedol J. Spinal cord compression: a review of 70 pediatric patients. *Pediatr Hematol Oncol* 2003;**20**:457–66	Outcome measures did not meet inclusion criteria

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Pongpornsup S, Wajanawichakorn P, Danchaivijitr N. Benign versus malignant compression fracture: a diagnostic accuracy of magnetic resonance imaging. *J Med Assoc Thai* 2009;**92**:64–72	Outcome measures did not meet inclusion criteria
Portenoy RK, Galer BS, Salamon O, Freilich M, Finkel JE, Milstein D, *et al*. Identification of epidural neoplasm. Radiography and bone scintigraphy in the symptomatic and asymptomatic spine. *Cancer* 1989;**64**:2207–13	Outcome measures did not meet inclusion criteria
Preciado DA, Sebring LA, Adams GL. Treatment of patients with spinal metastases from head and neck neoplasms. *Arch Otolaryngol Head Neck Surg* 2002;**128**:539–43	Outcome measures did not meet inclusion criteria
Prentice WB, Kieffer SA, Gold LH, Bjornson RG. Myelographic characteristics of metastasis to the spinal cord and cauda equina. *Am J Roentgenol Radium Ther Nucl Med* 1973;**118**:682–9	Outcome measures did not meet inclusion criteria
Puisto V, Rissanen H, Heliovaara M, Knekt P, Helenius I. Mortality in the presence of a vertebral fracture, scoliosis, or Scheuermann's disease in the thoracic spine. *Ann Epidemiol* 2008;**18**:595–601	Outcome measures did not meet inclusion criteria
Putz C, van Middendorp JJ, Pouw MH, Moradi B, Rupp R, Weidner N, *et al*. Malignant cord compression: a critical appraisal of prognostic factors predicting functional outcome after surgical treatment. *J Craniovert Junct Spine* 2010;**1**:67–73	Outcome measures did not meet inclusion criteria
Putz C, Wiedenhofer B, Gerner HJ, Furstenberg CH. Tokuhashi prognosis score: an important tool in prediction of the neurological outcome in metastatic spinal cord compression: a retrospective clinical study. *Spine* 2008;**33**:2669–74	Outcome measures did not meet inclusion criteria
Rades D, Karstens JH. A comparison of two different radiation schedules for metastatic spinal cord compression considering a new prognostic factor. *Strahlenther Onkol* 2002;**178**:556–61	Outcome measures did not meet inclusion criteria
Rades D, Fehlauer F, Stalpers LJ, Wildfang I, Zschenker O, Schild SE, *et al*. A prospective evaluation of two radiotherapy schedules with 10 versus 20 fractions for the treatment of metastatic spinal cord compression: final results of a multicenter study. *Cancer* 2004;**101**:2687–92	Outcome measures did not meet inclusion criteria
Rades D, Rudat V, Veninga T, Stalpers LJA, Basic H, Karstens JH, *et al*. A score predicting posttreatment ambulatory status in patients irradiated for metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2008;**72**:905–8	Outcome measures did not meet inclusion criteria
Rades D, Stalpers LJ, Hulshof MC, Borgmann K, Karstens JH, Koning CC, *et al*. Comparison of 1 $\times$ 8 Gy and 10 $\times$ 3 Gy for functional outcome in patients with metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2005;**62**:514–18	Outcome measures did not meet inclusion criteria
Rades D, Stalpers LJ, Schulte R, Veninga T, Basic H, Engenhart-Cabilic R, *et al*. Defining the appropriate radiotherapy regimen for metastatic spinal cord compression in non-small cell lung cancer patients. *Eur J Cancer* 2006;**42**:1052–6	Outcome measures did not meet inclusion criteria
Rades D, Walz J, Schild SE, Veninga T, Dunst J. Do bladder cancer patients with metastatic spinal cord compression benefit from radiotherapy alone? *Urology* 2007;**69**:1081–5	Outcome measures did not meet inclusion criteria
Rades D, Stalpers LJ, Veninga T, Schulte R, Hoskin PJ, Obralic N, *et al*. Evaluation of five radiation schedules and prognostic factors for metastatic spinal cord compression. *J Clin Oncol* 2005;23:3366–75	Outcome measures did not meet inclusion criteria
Rades D, Stalpers LJ, Veninga T, Rudat V, Schulte R, Hoskin PJ. Evaluation of functional outcome and local control after radiotherapy for metastatic spinal cord compression in patients with prostate cancer. *J Urol* 2006;**175**:552–6	Outcome measures did not meet inclusion criteria
Rades D, Lange M, Veninga T, Stalpers LJ, Bajrovic A, Adamietz IA, *et al*. Final results of a prospective study comparing the local control of short-course and long-course radiotherapy for metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2011;**79**:524–30	Outcome measures did not meet inclusion criteria
Rades D, Heidenreich F, Karstens JH. Final results of a prospective study of the prognostic value of the time to develop motor deficits before irradiation in metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2002;**53**:975–9	Outcome measures did not meet inclusion criteria
Rades D, Fehlauer F, Veninga T, Stalpers LJ, Basic H, Hoskin PJ, *et al*. Functional outcome and survival after radiotherapy of metastatic spinal cord compression in patients with cancer of unknown primary. *Int J Radiat Oncol Biol Phys* 2007;**67**:532–7	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Rades D, Veninga T, Stalpers LJ, Basic H, Hoskin PJ, Karstens JH, *et al*. Improved posttreatment functional outcome is associated with better survival in patients irradiated for metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2007;**67**:1506–9	Outcome measures did not meet inclusion criteria
Rades D, Huttenlocher S, Dunst J, Bajrovic A, Karstens JH, Rudat V, *et al*. Matched pair analysis comparing surgery followed by radiotherapy and radiotherapy alone for metastatic spinal cord compression. *J Clin Oncol* 2010;**28**:3597–604	Outcome measures did not meet inclusion criteria
Rades D, Blach M, Nerreter V, Bremer M, Karstens JH. Metastatic spinal cord compression. Influence of time between onset of motoric deficits and start of irradiation on therapeutic effect. *Strahlenther Onkol* 1999;**175**:378–81	Outcome measures did not meet inclusion criteria
Rades D, Lange M, Veninga T, Rudat V, Bajrovic A, Stalpers LJ, *et al*. Preliminary results of spinal cord compression recurrence evaluation (score-1) study comparing short-course versus long-course radiotherapy for local control of malignant epidural spinal cord compression. *Int J Radiat Oncol Biol Phys* 2009;**73**:228–34	Outcome measures did not meet inclusion criteria
Rades D, Rudat V, Veninga T, Stalpers LJ, Hoskin PJ, Schild SE. Prognostic factors for functional outcome and survival after reirradiation for in-field recurrences of metastatic spinal cord compression. *Cancer* 2008;113:1090–6	Outcome measures did not meet inclusion criteria
Rades D, Fehlauer F, Schulte R, Veninga T, Stalpers LJ, Basic H, *et al*. Prognostic factors for local control and survival after radiotherapy of metastatic spinal cord compression. *J Clin Oncol* 2006;**24**:3388–93	Outcome measures did not meet inclusion criteria
Rades D, Veninga T, Stalpers LJ, Schulte R, Hoskin PJ, Poortmans P, *et al*. Prognostic factors predicting functional outcomes, recurrence-free survival, and overall survival after radiotherapy for metastatic spinal cord compression in breast cancer patients. *Int J Radiat Oncol Biol Phys* 2006;**64**:182–8	Outcome measures did not meet inclusion criteria
Rades D, Blach M, Bremer M, Wildfang I, Karstens JH, Heidenreich F. Prognostic significance of the time of developing motor deficits before radiation therapy in metastatic spinal cord compression: one-year results of a prospective trial. *Int J Radiat Oncol Biol Phys* 2000;**48**:1403–8	Outcome measures did not meet inclusion criteria
Rades D, Hoskin PJ, Karstens JH, Rudat V, Veninga T, Stalpers LJ, *et al*. Radiotherapy of metastatic spinal cord compression in very elderly patients. *Int J Radiat Oncol Biol Phys* 2007;**67**:256–63	Outcome measures did not meet inclusion criteria
Rades D, Fehlauer F, Hartmann A, Wildfang I, Karstens JH, Alberti W. Reducing the overall treatment time for radiotherapy of metastatic spinal cord compression (MSCC): 3-year results of a prospective observational multi-center study. *J Neurooncol* 2004;**70**:77–82	Outcome measures did not meet inclusion criteria
Rades D, Stalpers LJ, Veninga T, Hoskin PJ. Spinal reirradiation after short-course RT for metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2005;**63**:872–5	Outcome measures did not meet inclusion criteria
Rades D, Bremer M, Goehde S, Joergensen M, Karstens JH. Spondylodiscitis in patients with spinal cord compression: a possible pitfall in radiation oncology. *Radiother Oncol* 2001;**59**:307–9	Outcome measures did not meet inclusion criteria
Rades D, Dunst J, Schild SE. The first score predicting overall survival in patients with metastatic spinal cord compression. *Cancer* 2008;**112**:157–61	Outcome measures did not meet inclusion criteria
Rades D, Heidenreich F, Bremer M, Karstens JH. Time of developing motor deficits before radiotherapy as a new and relevant prognostic factor in metastatic spinal cord compression: final results of a retrospective analysis. *Eur Neurol* 2001;**45**:266–9	Outcome measures did not meet inclusion criteria
Rades D, Douglas S, Veninga T, Stalpers LJA, Hoskin PJ, Bajrovic A, *et al*. Validation and simplification of a score predicting survival in patients irradiated for metastatic spinal cord compression. *Cancer* 2010;**116**:3670–3	Outcome measures did not meet inclusion criteria
Rades D, Douglas S, Huttenlocher S, Rudat V, Veninga T, Stalpers LJA, *et al*. Validation of a score predicting post-treatment ambulatory status after radiotherapy for metastatic spinal cord compression. *Int J Radiat Oncol Biol Phys* 2011;**79**:1503–6	Outcome measures did not meet inclusion criteria

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Rao SB, Dinakar I. Spinal compression. (Analysis of 200 cases.) *J Assoc Physicians Ind* 1970;**18**:1009–13	Outcome measures did not meet inclusion criteria
Rodriguez M, Dinapoli RP. Spinal-cord compression with special reference to metastatic epidural tumors. *Mayo Clin Proc* 1980;**55**:442–8	Review
Rogers CL, Theodore N, Dickman CA, Sonntag VKH, Thomas T, Lam S, *et al*. Surgery and permanent I-125 seed paraspinal bracaytherapy for malignant tumors with spinal cord compression. *Int J Radiat Oncol Biol Phys* 2002;**54**:505–13	Outcome measures did not meet inclusion criteria
Sahin M, Basoglu T, Bernay I, Yapici O, Canbaz F, Yalin T. Evaluation of metastatic bone disease with pentavalent Tc-99(m)-dimercaptosuccinic acid: a comparison with whole-body scanning and 4/24 hour quantitation of vertebral lesions. *Nucl Med Commun* 2000;**21**:251–8	Outcome measures did not meet inclusion criteria
Sakaura H, Hosono N, Mukai Y, Fujii R, Iwasaki M, Yoshikawa H. Persistent local pain after posterior spine surgery for thoracic lesions. *J Spinal Dis Tech* 2007;**20**:226–8	Outcome measures did not meet inclusion criteria
Sanguinetti C, Aulisa L, Valassina A, D'Arienzo M. The surgical treatment of spinal cord compression caused by tumorous metastases. A review of 91 cases. *Chir Organi Mov* 1998;**83**:113–25	Outcome measures did not meet inclusion criteria
Schiff D, O'Neill BP, Wang CH, O'Fallon JR. Neuroimaging and treatment implications of patients with multiple epidural spinal metastases. *Cancer* 1998;**83**:1593–601	Outcome measures did not meet inclusion criteria
Schiff D, O'Neill BP, Suman VJ. Spinal epidural metastasis as the initial manifestation of malignancy: Clinical features and diagnostic approach. *Neurology* 1997;**49**:452–6	Outcome measures did not meet inclusion criteria
Schoenfeld AJ, Dinicola NJ, Ehrler DM, Koerber A, Paxos M, Shorten SD, *et al*. Retrospective review of biopsy results following percutaneous fixation of vertebral compression fractures. *Injury* 2008;**39**:327–33	Outcome measures did not meet inclusion criteria
Schwab JH, Boland PJ, Antonescu C, Bilsky MH, Healey JH. Spinal metastases from myxoid liposarcoma warrant screening with magnetic resonance imaging. *Cancer* 2007;**110**:1815–22	Outcome measures did not meet inclusion criteria
Sciubba DM, Gokaslan ZL. Diagnosis and management of metastatic spine disease. *Surg Oncol* 2006;**15**:141–51	Review
Sciubba DM, Gokaslan ZL, Suk I, Suki D, Maldaun MVC, McCutcheon IE, *et al*. Positive and negative prognostic variables for patients undergoing spine surgery for metastatic breast disease. *Eur Spine J* 2007;**16**:1659–67	Outcome measures did not meet inclusion criteria
Shaheen H, Abubakar S, Malik I, Altafullah I, Alam F, Khan A. Epidural spinal cord compression from metastatic cancer: clinical features and management. *J Pak Med Assoc* 1991;**41**:60–2	Outcome measures did not meet inclusion criteria
Sharr MM. Diagnosis of Spinal-Cord and Cauda-Equina Metastases. *Prog Exp Tumor Res* 1985;**29**:93–104	Outcome measures did not meet inclusion criteria
Shaw MD, Rose JE, Paterson A. Metastatic extradural malignancy of the spine. *Acta Neurochirur* 1980;**52**:113–20	Outcome measures did not meet inclusion criteria
Shih TTF, Huang K-M, Li Y-W. Solitary vertebral collapse: distinction between benign and malignant causes using MR patterns. *J Magn Reson Imaging* 1999;**9**:635–42	Outcome measures did not meet inclusion criteria
Sioutos PJ, Arbit E, Meshulam CF, Galicich JH. Spinal metastases from solid tumors. Analysis of factors affecting survival. *Cancer* 1995;**76**:1453–59.	Outcome measures did not meet inclusion criteria
Smith EM, Hampel N, Ruff RL, Bodner DR, Resnick MI. Spinal cord compression secondary to prostate carcinoma: treatment and prognosis. *J Urol* 1993;**149**:330–3	Outcome measures did not meet inclusion criteria
Smoker WR, Godersky JC, Knutzon RK, Keyes WD, Norman D, Bergman W. The role of MR imaging in evaluating metastatic spinal disease. *AJR Am J Roentgenol* 1987;**149**:1241–8	Outcome measures did not meet inclusion criteria
Soderlund V. Radiological diagnosis of skeletal metastases. *Eur Radiol* 1996;**6**:587–95	Outcome measures did not meet inclusion criteria

TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Soerdjbalie-Maikoe V, Pelger RC, Nijeholt GA, Arndt JW, Zwinderman AH, Papapoulos SE, *et al*. Strontium-89 (Metastron) and the bisphosphonate olpadronate reduce the incidence of spinal cord compression in patients with hormone-refractory prostate cancer metastatic to the skeleton. *Eur Jo Nucl Med Mol Imaging* 2002;**29**:494–8	Outcome measures did not meet inclusion criteria
Solberg A, Bremnes RM. Metastatic spinal cord compression: diagnostic delay, treatment, and outcome. *Anticancer Res* 1999;**19**:677–84	Outcome measures did not meet inclusion criteria
Souchon R, Wenz F, Sedlmayer F, Budach W, Dunst J, Feyer P, *et al*. DEGRO practice guidelines for palliative radiotherapy of metastatic breast cancer bne metastases and metastatic spinal cord compression (MSCC). *Strahlenther Onkol* 2009;**185**:417–24	Outcome measures did not meet inclusion criteria
Souchon R, Wenz F, Sedlmayer F, Budach W, Dunst J, Feyer P, *et al*. Risk of skeletal-related events in patients with advanced prostate cancer treated with pamidronate or zoledronic acid. *Ann Pharmacother* 2010;**44**:1384–8	Outcome measures did not meet inclusion criteria
Sucher E, Margulies JY, Floman Y, Robin GC. Prognostic factors in anterior decompression for metastatic cord compression. An analysis of results. *Eur Spine J* 1994;**3**:70–5	Outcome measures did not meet inclusion criteria
Sundaresan N, Rothman A, Manhart K, Kelliher K. Surgery for solitary metastases of the spine: rationale and results of treatment. *Spine* 2002;**27**:1802–6	Outcome measures did not meet inclusion criteria
Sundaresan N, Rothman A, Manhart K, Kelliher K. Differentiation of malignant vertebral collapse from osteoporotic and other benign causes using magnetic resonance imaging. *Ann Acad Med Singapore* 2002;**31**:8–14	Outcome measures did not meet inclusion criteria
Tan SB, Kozak JA, Mawad ME. The limitations of magnetic resonance imaging in the diagnosis of pathologic vertebral fractures. *Spine* 1991;**16**:919–23	Outcome measures did not meet inclusion criteria
Tang SG, Byfield JE, Sharp TR, Utley JF, Quinol L, Seagren SL. Prognostic factors in the management of metastatic epidural spinal cord compression. *J Neurooncol* 1983;**1**:21–8	Outcome measures did not meet inclusion criteria
Tang V, Harvey D, Park DJ, Jiang S, Rathbone MP. Prognostic indicators in metastatic spinal cord compression: using functional independence measure and Tokuhashi scale to optimize rehabilitation planning. *Spinal Cord* 2007;**45**:671–7	Outcome measures did not meet inclusion criteria
Tazi H, Manunta A, Rodriguez A, Patard JJ, Lobel B, Guille F. Spinal cord compression in metastatic prostate cancer. *Euro Urol* 2003;**44**:527–32	Outcome measures did not meet inclusion criteria
Thariat J, Toubeau M, Ornetti P, Coudert B, Berrielo-Riedinger A, Fargeot P, *et al*. Sensitivity and specificity of thallium-201 scintigraphy for the diagnosis of malignant vertebral fractures. *Eur J Radiol* 2004;**51**:274–8	Outcome measures did not meet inclusion criteria
Tohtz SW, Rogalla P, Taupitz M, Perka C, Winkler T, Putzier M. Inter- and intraobserver variability in the postoperative evaluation of transpedicular stabilization: computed tomography versus magnetic resonance imaging. *Spine J* 2010;**10**:285–90	Outcome measures did not meet inclusion criteria
Tokuda O, Harada Y, Ueda T, Ohishi Y, Matsunaga N. Malignant versus benign vertebral compression fractures: can we use bone SPECT as a substitute for MR imaging? *Nucl Med Commun* 2011;**32**:192–8	Outcome measures did not meet inclusion criteria
Tokuhashi Y, Ajiro Y, Umezawa N. Outcome of treatment for spinal metastases using scoring system for preoperative evaluation of prognosis. *Spine* 2009;**34**:69–73	Outcome measures did not meet inclusion criteria
Tomita K, Kawahara N, Kobayashi T, Yoshida A, Murakami H, Akamaru T. Surgical strategy for spinal metastases. *Spine* 2001;**26**:298–306	Outcome measures did not meet inclusion criteria
Traill ZC, Talbot D, Golding S, Gleeson FV. Magnetic resonance imaging versus radionuclide scintigraphy in screening for bone metastases. *Clin Radiol* 1999;**54**:448–51	Outcome measures did not meet inclusion criteria
Tschirhart CE, Nagpurkar A, Whyne CM. Effects of tumor location, shape and surface serration on burst fracture risk in the metastatic spine. *J Biomechanics* 2004;**37**:653–60	Outcome measures did not meet inclusion criteria
Turgut M, Gul B, Girgin O, Taskin Y. Role of surgical treatment in 70 patients with vertebral metastasis causing cord or root compression. *Arch Orthop Trauma Surg* 1997;**116**:415–19	Outcome measures did not meet inclusion criteria

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TABLE 36 Excluded studies (*continued*)

Reference	Reason for exclusion
Ulmar B, Reichel H, Catalkaya S, Naumann U, Schmidt R, Gerstner S, *et al*. Evaluation and modification of the tomita score in 217 patients with vertebral metastases. *Onkologie* 2007;**30**:414–18	Outcome measures did not meet inclusion criteria
Ulmar B, Naumann U, Catalkaya S, Muche R, Cakir B, Schmidt R, *et al*. Prognosis scores of Tokuhashi and Tomita for patients with spinal metastases of renal cancer. *Ann Surg Oncol* 2007;**14**:998–1004	Outcome measures did not meet inclusion criteria
Ulmar B, Richter M, Cakir B, Muche R, Puhl W, Huch K. The Tokuhashi score: Significant predictive value for the life expectancy of patients with breast cancer with spinal metastases. *Spine* 2005;**30**:2222–6	Outcome measures did not meet inclusion criteria
van der Linden YM, Dijkstra SP, Vonk EJ, Marijnen CA, Leer JW, Dutch Bone Metastasis Study Group. Prediction of survival in patients with metastases in the spinal column: results based on a randomized trial of radiotherapy. *Cancer* 2005;**103**:320–8	Outcome measures did not meet inclusion criteria
Weber MH, Burch S, Buckley J, Schmidt MH, Fehlings MG, Vrionis FD, *et al*. Instability and impending instability of the thoracolumbar spine in patients with spinal metastases: a systematic review. *Int J Oncol* 2011;**38**:5–12	Outcome measures did not meet inclusion criteria
Weiss RJ, Wedin R. Surgery for skeletal metastases in lung cancer. *Acta Orthopaed* 2011;**82**:96–101	Outcome measures did not meet inclusion criteria
Williams BJ, Fox BD, Sciubba DM, Suki D, Tu SM, Kuban D, *et al*. Surgical management of prostate cancer metastatic to the spine. *J Neurosurg Spine* 2009;**10**:414–22	Outcome measures did not meet inclusion criteria
Williams MP, Cherryman GR, Husband JE. Magnetic resonance imaging in suspected metastatic spinal cord compression. *Clin Radiol* 1989;**40**:286–90	Outcome measures did not meet inclusion criteria
Wong CS, Chu YC, Ma KF, Cheng LF. An appraisal of timely magnetic resonance imaging in diagnosing spinal cord compression. *Singapore Med J* 2009;**50**:894–6	Outcome measures did not meet inclusion criteria
Yamashita T, Siemionow KB, Mroz TE, Podichetty V, Lieberman IH. A prospective analysis of prognostic factors in patients with spinal metastases: use of the revised Tokuhashi score. *Spine* 2011;**36**:910–17	Abstract
Yamashita T, Aota Y, Kushida K, Murayama H, Hiruma T, Takeyama M, *et al*. Changes in physical function after palliative surgery for metastatic spinal tumor: Association of the revised tokuhashi score with neurologic recovery. *Spine* 2008;**33**:2341–6	Outcome measures did not meet inclusion criteria
Yao WW, Li MH, Yang SX, Zhu LL. Use of diffusion-weighted magnetic resonance imaging to differentiate between acute benign and pathological vertebral fractures: prospective study. *J Hong Kong Coll Radiol* 2005;**8**:4–8	Outcome measures did not meet inclusion criteria
Yilmazlar S, Dogan S, Caner B, Turkkan A, Bekar A, Korfali E. Comparison of prognostic scores and surgical approaches to treat spinal metastatic tumors: a review of 57 cases. *J Orthop Surg Res* 2008;**3**:37	Outcome measures did not meet inclusion criteria
Zajick DC, Morrison WB, Schweitzer ME, Parellada JA, Carrino JA. Benign and malignant processes: Normal values and differentiation with chemical shift MR imaging in vertebral marrow. *Radiology* 2005;**237**:590–6	Outcome measures did not meet inclusion criteria
Zevallos M, Chan PYM, Munoz L, Wagner J, Kagan AR. Epidural spinal-cord compression from metastatic tumor. *Int J Radiat Oncol Biol Phys* 1987;**13**:875–8	Outcome measures did not meet inclusion criteria
Zhou XJ, Leeds NE, McKinnon GC, Kumar AJ. Characterization of benign and metastatic vertebral compression fractures with quantitative diffusion MR imaging. *AJNR Am J Neuroradiol* 2002;**23**:165–70	Outcome measures did not meet inclusion criteria