

Buttock pain

The causes of [low back pain](#) and buttock pain are variable. Elsewhere, Kim et al., presented a surgical technical note addressing the [gluteus medius](#) muscle (GMeM) pain that elicited buttock pain treatable by surgical decompression.

Kim et al., report minimum 2-year surgical outcomes of GMeM decompression for intractable buttock pain.

Between January 2014 and December 2015, they surgically treated 55 consecutive patients with a GMeM pain. Of these, 39 were followed for at least 2 years; they were included in this study. Their average age was 69.2 years; 17 were men and 22 were women. The affected side was unilateral in 24 patients and bilateral in the other 15 (total 54 sites). The mean follow-up period was 40.0 months (range 25-50 months). The severity of pre- and post-treatment pain was recorded on the numerical rating scale (NRS) and the [Roland Morris Disability Questionnaire](#) (RDQ).

Of the 39 patients, 35 also presented with leg symptoms. They were exacerbated by walking in all 39 patients and by prolonged sitting in 33 patients; 19 had a past history of lumbar surgery and 4 manifested [failed back surgery syndrome](#). Repeat surgery for wider decompression was performed in 5 patients due to pain recurrence 15.8 months after the first operation. At the last follow-up, the symptoms were significantly improved; the average NRS fell from 7.4 to 2.1 and the RDQ score from 10.5 to 3.3 ($p < 0.05$).

When diagnostic criteria are met, GMeM decompression under [local anesthesia](#) is a useful treatment for intractable buttock pain ¹⁾.

Unclassified

1: Kim K, Isu T, Matsumoto J, Miki K, Morimoto D, Isobe M, Morita A. Gluteus medius muscle decompression for buttock pain: a case-series analysis. *Acta Neurochir (Wien)*. 2019 May 3. doi: 10.1007/s00701-019-03923-3. [Epub ahead of print] PubMed PMID: 31049711.

2: Yamagami K, Shono T, Iihara K. Multiple Sacral Perineurial Cysts Presented Symptoms Triggered by Nonaneurysmal Perimesencephalic Subarachnoid Hemorrhage. *NMC Case Rep J*. 2019 Mar 21;6(2):57-60. doi: 10.2176/nmccrj.cr.2018-0242. eCollection 2019 Apr. PubMed PMID: 31016102; PubMed Central PMCID: PMC6476817.

3: Matsumoto J, Isu T, Kim K, Miki K, Fujihara F, Isobe M. Middle cluneal nerve entrapment mimics sacroiliac joint pain. *Acta Neurochir (Wien)*. 2019 Apr;161(4):657-661. doi: 10.1007/s00701-019-03861-0. Epub 2019 Mar 4. PubMed PMID: 30830272.

4: Ghalaenovi H, Fattahi A. Migrating spinal intradural schwannoma with adjacent disc herniation: A case report and brief literature review. *Surg Neurol Int*. 2018 Nov 5;9:228. doi: 10.4103/sni.sni_284_18. eCollection 2018. PubMed PMID: 30533275; PubMed Central PMCID: PMC6238330.

5: Janjua MB, Ozturk A, Piazza M, Passias P, Arlet V, Welch WC. Technical nuances of percutaneous sacroiliac joint fixation: A cadaveric study. *J Clin Neurosci*. 2019 Mar;61:315-321. doi:

10.1016/j.jocn.2018.10.130. Epub 2018 Nov 10. PubMed PMID: 30424968.

6: Lee WY, Park KD, Park Y. The effect of polydeoxyribonucleotide on the treatment of radiating leg pain due to cystic mass lesion in inner aspect of right sciatic foramen: A CARE compliant case report. *Medicine (Baltimore)*. 2018 Oct;97(41):e12794. doi: 10.1097/MD.00000000000012794. PubMed PMID: 30313106; PubMed Central PMCID: PMC6203516.

7: Lee DC, Heo DH, Cho KS. Concomitant Occlusive Vascular Lesions of Legs in Patients with Degenerative Lumbar Diseases: Do These Lesions Influence Treatment? *J Neurol Surg A Cent Eur Neurosurg*. 2019 Jan;80(1):8-14. doi: 10.1055/s-0038-1669474. Epub 2018 Sep 17. PubMed PMID: 30223290.

8: Kim HS, Pradhan RL, Adsul N, Jang JS, Jang IT, Oh SH. Transforaminal Endoscopic Excision of Intradural Lumbar Disk Herniation and Dural Repair. *World Neurosurg*. 2018 Nov;119:163-167. doi: 10.1016/j.wneu.2018.07.244. Epub 2018 Aug 6. PubMed PMID: 30092470.

9: Yoon SJ, Park MS, Matsuda DK, Choi YH. Endoscopic resection of acetabular screw tip to decompress sciatic nerve following total hip arthroplasty. *BMC Musculoskelet Disord*. 2018 Jun 4;19(1):184. doi: 10.1186/s12891-018-2091-x. PubMed PMID: 29866097; PubMed Central PMCID: PMC5987599.

10: Naja Z, Naja AS, Rajab O, Mugharbil A, Shatila AR, Al Hassan J. Repetitive nerve block for neuropathic pain management: a case report. *Scand J Pain*. 2018 Jan 26;18(1):125-127. doi: 10.1515/sjpain-2017-0155. PubMed PMID: 29794280.

11: Matsumoto J, Isu T, Kim K, Iwamoto N, Morimoto D, Isobe M. Surgical treatment of middle cluneal nerve entrapment neuropathy: technical note. *J Neurosurg Spine*. 2018 Aug;29(2):208-213. doi: 10.3171/2017.12.SPINE17991. Epub 2018 May 18. PubMed PMID: 29775161.

12: Rodrigues R, Silva PS, Cunha M, Vaz R, Pereira P. Can We Assess the Success of Surgery for Degenerative Spinal Diseases Using Patients' Recall of Their Preoperative Status? *World Neurosurg*. 2018 Jul;115:e768-e773. doi: 10.1016/j.wneu.2018.04.174. Epub 2018 May 3. PubMed PMID: 29729475.

13: Isu T, Kim K, Morimoto D, Iwamoto N. Superior and Middle Cluneal Nerve Entrapment as a Cause of Low Back Pain. *Neurospine*. 2018 Mar;15(1):25-32. doi: 10.14245/ns.1836024.012. Epub 2018 Mar 28. Review. PubMed PMID: 29656623; PubMed Central PMCID: PMC5944640.

14: Lin YP, Li YJ, Chen BL, Guo YH. Lumbar laminotomy and replantation for the treatment of adult spinal epidermoid cyst: A case report. *Medicine (Baltimore)*. 2018 Jan;97(1):e9334. doi: 10.1097/MD.00000000000009334. PubMed PMID: 29505514; PubMed Central PMCID: PMC5943114.

15: Tsai SH, Wu HH, Cheng CY, Chen CM. Full Endoscopic Interlaminar Approach for Nerve Root Decompression of Sacral Metastatic Tumor. *World Neurosurg*. 2018 Apr;112:57-63. doi: 10.1016/j.wneu.2018.01.075. Epub 2018 Jan 31. PubMed PMID: 29355803.

16: Choi SH, Adsul N, Kim HS, Jang JS, Jang IT, Oh SH. Magnetic Resonance Imaging Undetectable Epiduroscopic Hotspot in Chronic Diskogenic Back Pain-Does Sinuvertebral Neuropathy Actually Exist? *World Neurosurg*. 2018 Feb;110:354-358. doi: 10.1016/j.wneu.2017.11.151. Epub 2017 Dec 2. PubMed PMID: 29203308.

17: Elsharkawy H, Kashy BK, Babazade R, Gray AT. Ultrasound Detection of Arteria Comitans: A Novel Technique to Locate the Sciatic Nerve. *Reg Anesth Pain Med*. 2018 Jan;43(1):57-61. doi:

10.1097/AAP.0000000000000665. PubMed PMID: 29035937.

18: Lee BH, Hyun SJ, Park JH, Kim KJ. Single Stage Posterior Approach for Total Resection of Presacral Giant Schwannoma: A Technical Case Report. *Korean J Spine*. 2017 Sep;14(3):89-92. doi: 10.14245/kjs.2017.14.3.89. Epub 2017 Sep 30. PubMed PMID: 29017303; PubMed Central PMCID: PMC5642101.

19: Kim JH, Kwon YJ. Long-term Clinical and Radiological Outcomes after Central Decompressive Laminoplasty for Lumbar Spinal Stenosis. *Korean J Spine*. 2017 Sep;14(3):71-76. doi: 10.14245/kjs.2017.14.3.71. Epub 2017 Sep 30. PubMed PMID: 29017300; PubMed Central PMCID: PMC5642091.

20: Ju CI, Kim SW, Kim JG, Lee SM, Shin H, Lee HY. Decompressive L5 Transverse Processectomy for Bertolotti's Syndrome: A Preliminary Study. *Pain Physician*. 2017 Sep;20(6):E923-E932. PubMed PMID: 28934796.

21: Ono K, Arimoto H, Okawa H, Takahara T, Kobayashi H, Morinaga Y. [Association of Lower limb Neuropathy with Lumboperitoneal Shunt Transection:A Case Report]. *No Shinkei Geka*. 2017 May;45(5):405-408. doi: 10.11477/mf.1436203522. Review. Japanese. PubMed PMID: 28490682.

22: Acar AA, Bösenberg AT, van Schoor AN. Anatomical description of the sciatic nerve block at the subgluteal region in a neonatal cadaver population. *Paediatr Anaesth*. 2017 Jun;27(6):643-647. doi: 10.1111/pan.13147. Epub 2017 Apr 3. PubMed PMID: 28370691.

23: Hatgis J, Granville M, Jacobson RE, Berti A. Sacral Insufficiency Fractures: Recognition and Treatment in Patients with Concurrent Lumbar Vertebral Compression Fractures. *Cureus*. 2017 Feb 2;9(2):e1008. doi: 10.7759/cureus.1008. PubMed PMID: 28293486; PubMed Central PMCID: PMC5333948.

24: Kurosawa D, Murakami E, Ozawa H, Koga H, Isu T, Chiba Y, Abe E, Unoki E, Musha Y, Ito K, Katoh S, Yamaguchi T. A Diagnostic Scoring System for Sacroiliac Joint Pain Originating from the Posterior Ligament. *Pain Med*. 2017 Feb 1;18(2):228-238. doi: 10.1093/pm/pnw117. PubMed PMID: 28204687.

25: Whittemore BA, Swift DM, Weprin BE, Duffy FJ Jr. Long-term follow-up of superior gluteal artery perforator flap closure of large myelomeningoceles. *J Neurosurg Pediatr*. 2017 Mar;19(3):333-338. doi: 10.3171/2016.10.PEDS16259. Epub 2017 Jan 20. PubMed PMID: 28106513.

26: Kokubo R, Kim K, Isu T, Morimoto D, Iwamoto N, Kobayashi S, Morita A. Superior Cluneal Nerve Entrapment Neuropathy and Gluteus Medius Muscle Pain: Their Effect on Very Old Patients with Low Back Pain. *World Neurosurg*. 2017 Feb;98:132-139. doi: 10.1016/j.wneu.2016.10.096. Epub 2016 Oct 27. PubMed PMID: 27989968.

27: Solano J, Winningham G, Al Zubeidi D, Myers A. A 5-Year-Old With Fever, Headache, Neck Stiffness, and Leg Pain. *Pediatrics*. 2016 Nov;138(5). pii: e20153762. Epub 2016 Oct 7. PubMed PMID: 27940753.

28: Odonkor CA, Chhatre A. What's Tramadol Got to Do with It? A Case Report of Rebound Hypoglycemia, a Reappraisal and Review of Potential Mechanisms. *Pain Physician*. 2016 Nov-Dec;19(8):E1215-E1220. Review. PubMed PMID: 27906953.

29: Kim TJ, Koh EJ, Cho KT. Spinal Subarachnoid Hemorrhage Migrated from Traumatic Intracranial Subarachnoid Hemorrhage. *Korean J Neurotrauma*. 2016 Oct;12(2):159-162. Epub 2016 Oct 31. PubMed PMID: 27857928; PubMed Central PMCID: PMC5110909.

- 30: Elsawaf A, Awad TE, Fesal SS. Surgical excision of symptomatic sacral perineurial Tarlov cyst: case series and review of the literature. *Eur Spine J.* 2016 Nov;25(11):3385-3392. Epub 2016 May 6. Review. PubMed PMID: 27154168.
- 31: Ishida W, Elder BD, Holmes C, Goodwin CR, Lo SF, Kosztowski TA, Bydon A, Gokaslan ZL, Wolinsky JP, Sciubba DM, Witham TF. S2-Alar-Iliac Screws are Associated with Lower Rate of Symptomatic Screw Prominence than Iliac Screws: Radiographic Analysis of Minimal Distance from Screw Head to Skin. *World Neurosurg.* 2016 Sep;93:253-60. doi: 10.1016/j.wneu.2016.06.042. Epub 2016 Jun 16. PubMed PMID: 27319308.
- 32: Alimi M, Hofstetter CP, Torres-Campa JM, Navarro-Ramirez R, Cong GT, Njoku I Jr, Härtl R. Unilateral tubular approach for bilateral laminotomy: effect on ipsilateral and contralateral buttock and leg pain. *Eur Spine J.* 2017 Feb;26(2):389-396. doi: 10.1007/s00586-016-4594-1. Epub 2016 Jun 8. PubMed PMID: 27272621.
- 33: Yener U, Güdük M, Ekşi MŞ, Aytar MH, Sav A, Özgen S. Concomitant Double Tumors of Myxopapillary Ependymoma Presented at Cauda Equina-Filum Terminale in Adult Patient. *Korean J Spine.* 2016 Mar;13(1):33-6. doi: 10.14245/kjs.2016.13.1.33. Epub 2016 Mar 31. PubMed PMID: 27123029; PubMed Central PMCID: PMC4844659.
- 34: Morimoto D, Isu T, Kim K, Isobe M, Takahashi T, Ishida Y, Takei H, Morita A. Surgical treatment for posttraumatic hemorrhage inside a filum terminale myxopapillary ependymoma: a case report and literature review. *Eur Spine J.* 2016 May;25 Suppl 1:239-44. doi: 10.1007/s00586-016-4521-5. Epub 2016 Mar 25. Review. PubMed PMID: 27015688.
- 35: Cho S, Park HS, Kim DY, Kim CH, Chung RK, Kim YJ. Percutaneous Sacroplasty under Fluoroscopic Guidance Combined with Epidurogram for Sacral Insufficiency Fracture Resulting from Metastatic Tumor and Osteoporosis. *Pain Physician.* 2016 Mar;19(3):E473-80. PubMed PMID: 27008304.
- 36: Burgstaller JM, Schöffler PJ, Buhmann JM, Andreisek G, Winklhofer S, Del Grande F, Mattle M, Brunner F, Karakoumis G, Steurer J, Held U; LSOS Study Group. Is There an Association Between Pain and Magnetic Resonance Imaging Parameters in Patients With Lumbar Spinal Stenosis? *Spine (Phila Pa 1976).* 2016 Sep;41(17):E1053-62. doi: 10.1097/BRS.0000000000001544. PubMed PMID: 26953669.
- 37: Kim K, Isu T, Chiba Y, Iwamoto N, Morimoto D, Isobe M. Decompression of the gluteus medius muscle as a new treatment for buttock pain: technical note. *Eur Spine J.* 2016 Apr;25(4):1282-8. doi: 10.1007/s00586-016-4440-5. Epub 2016 Feb 19. PubMed PMID: 26894751.
- 38: Morimoto D, Isu T, Kim K, Yamazaki K, Iwamoto N, Isobe M, Morita A. [Non-Specific Back Pain due to Superior Cluneal Nerve Entrapment Neuropathy Treated with Neurolysis: A Case Report]. *No Shinkei Geka.* 2016 Feb;44(2):155-60. doi: 10.11477/mf.1436203248. Japanese. PubMed PMID: 26856270.
- 39: Guan Z, Wilson TJ, Jacobson JA, Hollon TC, Yang LJ. Delayed Sciatic Nerve Injury Resulting From Myositis Ossificans Traumatica. *PM R.* 2016 May;8(5):484-7. doi: 10.1016/j.pmrj.2015.10.011. Epub 2015 Nov 5. PubMed PMID: 26548968.
- 40: Chiba Y, Isu T, Kim K, Iwamoto N, Morimoto D, Yamazaki K, Hokari M, Isobe M, Kusano M. Association between intermittent low-back pain and superior cluneal nerve entrapment neuropathy. *J Neurosurg Spine.* 2016 Feb;24(2):263-267. doi: 10.3171/2015.1.SPINE14173. Epub 2015 Oct 13. PubMed PMID: 26460754.

- 41: Kraus E, Tenforde AS, Beaulieu CF, Ratliff J, Fredericson M. Piriformis Syndrome With Variant Sciatic Nerve Anatomy: A Case Report. *PM R*. 2016 Feb;8(2):176-9. doi: 10.1016/j.pmrj.2015.09.005. Epub 2015 Sep 14. PubMed PMID: 26377629.
- 42: Aghazadeh J, Ghaderi M, Azghani MR, Khalkhali HR, Allahyari T, Mohebbi I. Anti-fatigue mats, low back pain, and electromyography: An interventional study. *Int J Occup Med Environ Health*. 2015;28(2):347-56. doi: 10.13075/ijomeh.1896.00311. PubMed PMID: 26182929.
- 43: Dellon AL. Pain with sitting related to injury of the posterior femoral cutaneous nerve. *Microsurgery*. 2015 Sep;35(6):463-8. doi: 10.1002/micr.22422. Epub 2015 Apr 27. PubMed PMID: 25917688.
- 44: Son BC, Kim DR, Jeun SS, Lee SW. Decompression of the sciatic nerve entrapment caused by post-inflammatory scarring. *J Korean Neurosurg Soc*. 2015 Feb;57(2):123-6. doi: 10.3340/jkns.2015.57.2.123. Epub 2015 Feb 26. PubMed PMID: 25733994; PubMed Central PMCID: PMC4345190.
- 45: Hur JW, Lee S, Lee JB, Cho TH, Park JY. What are MRI findings of Spine Benign Metastasizing Leiomyoma? Case report with literature review. *Eur Spine J*. 2015 May;24 Suppl 4:S600-5. doi: 10.1007/s00586-015-3774-8. Epub 2015 Jan 30. Review. PubMed PMID: 25632838.
- 46: Kuniya H, Aota Y, Kawai T, Kaneko K, Konno T, Saito T. Prospective study of superior cluneal nerve disorder as a potential cause of low back pain and leg symptoms. *J Orthop Surg Res*. 2014 Dec 31;9:139. doi: 10.1186/s13018-014-0139-7. PubMed PMID: 25551470; PubMed Central PMCID: PMC4299373.
- 47: Kwon YJ. Central decompressive laminoplasty for treatment of lumbar spinal stenosis : technique and early surgical results. *J Korean Neurosurg Soc*. 2014 Sep;56(3):206-10. doi: 10.3340/jkns.2014.56.3.206. Epub 2014 Sep 30. PubMed PMID: 25368762; PubMed Central PMCID: PMC4217056.
- 48: Ozisik PA, Toru M, Denk CC, Taskiran OO, Gundogmus B. CT-guided piriformis muscle injection for the treatment of piriformis syndrome. *Turk Neurosurg*. 2014;24(4):471-7. doi: 10.5137/1019-5149.JTN.8038-13.1. PubMed PMID: 25050669.
- 49: Ricci P, Wash A. Pudendal nerve block by transgluteal way guided by computed tomography in a woman with refractory pudendal neuralgia expressed like chronic perineal and pelvic pain. *Arch Esp Urol*. 2014 Jul;67(6):565-71. PubMed PMID: 25048589.
- 50: Kwon YK, Jang JH, Lee CD, Lee SH. Fracture of the L-4 vertebral body after use of a stand-alone interbody fusion device in degenerative spondylolisthesis for anterior L3-4 fixation. *J Neurosurg Spine*. 2014 Jun;20(6):653-6. doi: 10.3171/2014.3.SPINE121018. Epub 2014 Apr 11. PubMed PMID: 24725181.
- 51: Cornips EM. Crippling upper back pain after whiplash and other motor vehicle collisions caused by thoracic disc herniations: report of 10 cases. *Spine (Phila Pa 1976)*. 2014 May 20;39(12):988-95. doi: 10.1097/BRS.0000000000000332. PubMed PMID: 24718062.
- 52: Hoover J, Pirris S. Synovial cyst mimicking an intraspinal sacral mass. *Case Rep Neurol Med*. 2014;2014:953579. doi: 10.1155/2014/953579. Epub 2014 Mar 4. PubMed PMID: 24716025; PubMed Central PMCID: PMC3970337.
- 53: Tollstrup T, Dellon AL. Schwannoma of the pudendal nerve at sciatic notch and differential

diagnosis of "sitting pain". *J Reconstr Microsurg.* 2014 May;30(4):283-6. doi: 10.1055/s-0033-1357268. Epub 2014 Mar 3. PubMed PMID: 24590320.

54: Finger T, Bayerl S, Onken J, Czabanka M, Woitzik J, Vajkoczy P. Sacropelvic fixation versus fusion to the sacrum for spondylodesis in multilevel degenerative spine disease. *Eur Spine J.* 2014 May;23(5):1013-20. doi: 10.1007/s00586-014-3165-6. Epub 2014 Jan 22. PubMed PMID: 24448893.

55: Tammam TF. Ultrasound-guided sciatic nerve block: a comparison between four different infragluteal probe and needle alignment approaches. *J Anesth.* 2014 Aug;28(4):532-7. doi: 10.1007/s00540-013-1753-y. Epub 2013 Dec 6. PubMed PMID: 24310853.

56: Choi SW, Seong HY, Roh SW. Spinal extradural arachnoid cyst. *J Korean Neurosurg Soc.* 2013 Oct;54(4):355-8. doi: 10.3340/jkns.2013.54.4.355. Epub 2013 Oct 31. PubMed PMID: 24294463; PubMed Central PMCID: PMC3841282.

57: Shimizu S, Miyazaki T, Mochizuki T, Oka H. Sacral myolipoma with symptomatic contraction of the conus at standing on tiptoe. *Eur Spine J.* 2014 May;23 Suppl 2:197-200. doi: 10.1007/s00586-013-2966-3. Epub 2013 Aug 24. PubMed PMID: 23975438.

58: Jung D, Cho KT, Roh JH. Non-traumatic myositis ossificans in the lumbosacral paravertebral muscle. *J Korean Neurosurg Soc.* 2013 May;53(5):305-8. doi: 10.3340/jkns.2013.53.5.305. Epub 2013 May 31. PubMed PMID: 23908707; PubMed Central PMCID: PMC3730035.

59: Jankovic D, Peng P, van Zundert A. Brief review: piriformis syndrome: etiology, diagnosis, and management. *Can J Anaesth.* 2013 Oct;60(10):1003-12. doi: 10.1007/s12630-013-0009-5. Epub 2013 Jul 27. Review. PubMed PMID: 23893704.

60: Shirzadi A, Drazin D, Jeswani S, Lovely L, Liu J. Atypical presentation of thoracic disc herniation: case series and review of the literature. *Case Rep Orthop.* 2013;2013:621476. doi: 10.1155/2013/621476. Epub 2013 Apr 4. PubMed PMID: 23691393; PubMed Central PMCID: PMC3638501.

61: Peltier J. Anatomical basis of transgluteal approach for pudendal neuralgia and operative technique. *Surg Radiol Anat.* 2013 Sep;35(7):609-14. doi: 10.1007/s00276-013-1092-6. Epub 2013 Feb 28. PubMed PMID: 23455364.

62: Ganty P, Sharma M. Failed back surgery syndrome: a suggested algorithm of care. *Br J Pain.* 2012 Nov;6(4):153-61. doi: 10.1177/2049463712470222. PubMed PMID: 26516487; PubMed Central PMCID: PMC4590103.

63: Oliver TA, Sorensen M, Arthur AS. Endovascular treatment for acute paraplegia after epidural steroid injection in a patient with spinal dural arteriovenous malformation. *J Neurosurg Spine.* 2012 Sep;17(3):251-5. doi: 10.3171/2012.6.SPINE11835. Epub 2012 Jul 6. PubMed PMID: 22769730.

64: Hara K, Sakura S, Yokokawa N, Tadenuma S. Incidence and effects of unintentional intraneural injection during ultrasound-guided subgluteal sciatic nerve block. *Reg Anesth Pain Med.* 2012 May-Jun;37(3):289-93. doi: 10.1097/AAP.0b013e31824bde5c. PubMed PMID: 22476236.

65: Socolovsky M, Masi GD. Exposure of the sciatic nerve in the gluteal region without sectioning the gluteus maximus: Analysis of a series of 18 cases. *Surg Neurol Int.* 2012;3:15. doi: 10.4103/2152-7806.92929. Epub 2012 Feb 15. PubMed PMID: 22439106; PubMed Central PMCID: PMC3307246.

- 66: Ma H, Kim I. Idiopathic lumbosacral spinal chronic subdural hematoma. *Korean J Spine*. 2012 Mar;9(1):41-3. doi: 10.14245/kjs.2012.9.1.41. Epub 2012 Mar 31. PubMed PMID: 25983788; PubMed Central PMCID: PMC4432384.
- 67: Karikari IO, Mehta AI, Nimjee S, Hodges TR, Tibaleka J, Montgomery C, Simpson L, Cummings TJ, Bagley CA. Primary intradural extraosseous Ewing sarcoma of the spine: case report and literature review. *Neurosurgery*. 2011 Oct;69(4):E995-9. doi: 10.1227/NEU.0b013e318223b7c7. Review. PubMed PMID: 21572359.
- 68: Topuz K, Kutlay M, Simşek H, Atabey C, Demircan M, Senol Güney M. Early surgical treatment protocol for sciatic nerve injury due to injection—a retrospective study. *Br J Neurosurg*. 2011 Aug;25(4):509-15. doi: 10.3109/02688697.2011.566380. Epub 2011 Apr 22. Review. PubMed PMID: 21513449.
- 69: Lee YS, Choi ES, Kim JO, Ji JH. A rare calcified thrombosis of the dilated epidural venous plexus presenting with lumbar radiculopathy: a case report. *Spine J*. 2011 Feb;11(2):e28-31. doi: 10.1016/j.spinee.2010.12.016. PubMed PMID: 21296289.
- 70: Lee YS, Yi JS, Kim HJ, Kim JO, Choi ES. Epidural block-induced ligamentum flavum hematoma mimicking epidural hematoma in the lumbar spine: a case report. *Spine J*. 2011 Feb;11(2):e23-7. doi: 10.1016/j.spinee.2010.12.014. PubMed PMID: 21296288.
- 71: Lee JH, Jung TG, Kim HS, Jang JS, Lee SH. Symptomatic isolated lumbar interdural arachnoid cyst. *Neurol Med Chir (Tokyo)*. 2010;50(11):1035-8. PubMed PMID: 21123994.
- 72: Hyun SJ, Rhim SC, Kim YJ, Kim YB. A mid-term follow-up result of spinopelvic fixation using iliac screws for lumbosacral fusion. *J Korean Neurosurg Soc*. 2010 Oct;48(4):347-53. doi: 10.3340/jkns.2010.48.4.347. Epub 2010 Oct 30. PubMed PMID: 21113363; PubMed Central PMCID: PMC2982914.
- 73: Kim DS, Lee JK, Jang JW, Ko BS, Lee JH, Kim SH. Clinical features and treatments of upper lumbar disc herniations. *J Korean Neurosurg Soc*. 2010 Aug;48(2):119-24. doi: 10.3340/jkns.2010.48.2.119. Epub 2010 Aug 31. PubMed PMID: 20856659; PubMed Central PMCID: PMC2941853.
- 74: Ahn Y, Lee SH. Iatrogenic sacroiliac joint syndrome after percutaneous pedicle screw fixation at the L5-S1 level: case report. *Neurosurgery*. 2010 Sep;67(3):E865-6; discussion E866. doi: 10.1227/01.NEU.0000374856.26808.80. PubMed PMID: 20657322.
- 75: Burnham R. Radiofrequency sensory ablation as a treatment for symptomatic unilateral lumbosacral junction pseudarticulation (Bertolotti's syndrome): a case report. *Pain Med*. 2010 Jun;11(6):853-5. doi: 10.1111/j.1526-4637.2010.00869.x. PubMed PMID: 20624239.
- 76: Kakutani K, Doita M, Nishida K, Akisue T, Maeno K, Zhang Z, Yurube T, Kurosaka M. Intractable sciatica due to intraneural nodular fasciitis detected by positron emission tomography. *Spine (Phila Pa 1976)*. 2010 Oct 1;35(21):E1137-40. doi: 10.1097/BRS.0b013e3181e028b6. PubMed PMID: 20622746.
- 77: Rudolph T, Løkebø JE, Andreassen L. Bilateral gluteal compartment syndrome and severe rhabdomyolysis after lumbar spine surgery. *Eur Spine J*. 2011 Jul;20 Suppl 2:S180-2. doi: 10.1007/s00586-010-1499-2. Epub 2010 Jul 9. PubMed PMID: 20617347; PubMed Central PMCID: PMC3111522.
- 78: Sasaki M, Aoki M, Yoshimine T. [Lateral fenestration combined with spinal canal decompression through contralateral laminotomy for radiculopathy caused by lumbar canal stenosis and lumbar

foraminal stenosis: a case report]. *No Shinkei Geka*. 2010 May;38(5):477-83. Japanese. PubMed PMID: 20522920.

79: Swartz KR, Wilson D, Boland M, Fee DB. Proximal sciatic nerve intraneural ganglion cyst. *Case Rep Med*. 2009;2009:810973. doi: 10.1155/2009/810973. Epub 2009 Dec 22. PubMed PMID: 20069041; PubMed Central PMCID: PMC2797755.

80: Kapural L, Stojanovic M, Sessler DI, Bensitel T, Zovkic P. Cooled radiofrequency (RF) of L5 dorsal ramus for RF denervation of the sacroiliac joint: technical report. *Pain Med*. 2010 Jan;11(1):53-7. doi: 10.1111/j.1526-4637.2009.00772.x. Epub 2009 Dec 16. Erratum in: *Pain Med*. 2010 Dec;11(12):1874. Sessler, Daniel I [added]. PubMed PMID: 20030745.

81: Yeremeyeva E, Kline DG, Kim DH. Iatrogenic sciatic nerve injuries at buttock and thigh levels: the Louisiana State University experience review. *Neurosurgery*. 2009 Oct;65(4 Suppl):A63-6. doi: 10.1227/01.NEU.0000346265.17661.1E. PubMed PMID: 19927080.

82: Halpin RJ, Ganju A. Piriformis syndrome: a real pain in the buttock? *Neurosurgery*. 2009 Oct;65(4 Suppl):A197-202. doi: 10.1227/01.NEU.0000335788.45495.0C. Review. PubMed PMID: 19927068.

83: Herring A, Price DD, Nagdev A, Simon B. Superior cluneal nerve block for treatment of buttock abscesses in the emergency department. *J Emerg Med*. 2010 Jul;39(1):83-5. doi: 10.1016/j.jemermed.2009.08.033. Epub 2009 Nov 17. PubMed PMID: 19926437.

84: Nakajima M, Fukuda S, Ikeda H, Suzuki Y. [Chronic spinal subdural hematoma associated with chronic intracranial subdural hematoma: a case report]. *No Shinkei Geka*. 2009 Oct;37(10):1013-7. Review. Japanese. PubMed PMID: 19882963.

85: Derincek A, Ozalay M, Sen O, Pourbagher A. Posterior epidural mass: can a posteriorly migrated lumbar disc fragment mimic tumour, haematoma or abscess? *Acta Orthop Belg*. 2009 Jun;75(3):423-7. Review. PubMed PMID: 19681334.

86: Alemo S, Sayadipour A. Sources and patterns of pain in lumbar disc disease: revisiting Francis Murphey's theory. *Acta Neurochir (Wien)*. 2010 Sep;152(9):1555-8. doi: 10.1007/s00701-009-0315-4. Epub 2009 Apr 30. PubMed PMID: 19404576.

87: Mannion AF, Porchet F, Kleinstück FS, Lattig F, Jeszenszky D, Bartanusz V, Dvorak J, Grob D. The quality of spine surgery from the patient's perspective. Part 1: the Core Outcome Measures Index in clinical practice. *Eur Spine J*. 2009 Aug;18 Suppl 3:367-73. doi: 10.1007/s00586-009-0942-8. Epub 2009 Mar 25. PubMed PMID: 19319578; PubMed Central PMCID: PMC2899316.

88: Mannion AF, Porchet F, Kleinstück FS, Lattig F, Jeszenszky D, Bartanusz V, Dvorak J, Grob D. The quality of spine surgery from the patient's perspective: part 2. Minimal clinically important difference for improvement and deterioration as measured with the Core Outcome Measures Index. *Eur Spine J*. 2009 Aug;18 Suppl 3:374-9. doi: 10.1007/s00586-009-0931-y. Epub 2009 Mar 19. PubMed PMID: 19296136; PubMed Central PMCID: PMC2899314.

89: Porchet F, Bartanusz V, Kleinstueck FS, Lattig F, Jeszenszky D, Grob D, Mannion AF. Microdiscectomy compared with standard discectomy: an old problem revisited with new outcome measures within the framework of a spine surgical registry. *Eur Spine J*. 2009 Aug;18 Suppl 3:360-6. doi: 10.1007/s00586-009-0917-9. Epub 2009 Mar 3. Review. PubMed PMID: 19255791; PubMed Central PMCID: PMC2899328.

90: Anderson J, Peace D, Okun MS. Albert Sidney Johnston's sciatic dueling injury did not contribute to

his death at the Battle of Shiloh. *Neurosurgery*. 2008 Dec;63(6):1192-7; discussion 1197. doi: 10.1227/01.NEU.0000327687.45271.45. PubMed PMID: 19057333.

91: Borowsky CD, Fagen G. Sources of sacroiliac region pain: insights gained from a study comparing standard intra-articular injection with a technique combining intra- and peri-articular injection. *Arch Phys Med Rehabil*. 2008 Nov;89(11):2048-56. doi: 10.1016/j.apmr.2008.06.006. PubMed PMID: 18996232.

92: Kabataş S, Gümüş B, Yılmaz C, Caner H. CT-guided corticosteroid injection as a therapeutic management for the piriformis syndrome: case report. *Turk Neurosurg*. 2008 Jul;18(3):307-10. PubMed PMID: 18814124.

93: Benedetto G, Nigro F, Bratti E, Ferrarese P, Abatangelo G, Scremin E, Cavaretta L, Tasca A. [Acute thrombosis of the renal artery secondary to closed abdominal trauma: our experience and literature revision]. *Urologia*. 2008 Jul-Sep;75(3):189-92. Italian. PubMed PMID: 21086350.

94: Gofeld M, Jitendra J, Faclier G. Radiofrequency denervation of the lumbar zygapophysial joints: 10-year prospective clinical audit. *Pain Physician*. 2007 Mar;10(2):291-300. PubMed PMID: 17387351.

95: Park J, Park JY, Kim SH, Lim DJ, Kim SD, Chung HS. Long term results from percutaneous radiofrequency neurotomy on posterior primary ramus in patients with chronic low back pain. *Acta Neurochir Suppl*. 2006;99:81-3. PubMed PMID: 17370770.

96: Carlsson CP, Sundler F, Wallengren J. Cutaneous innervation before and after one treatment period of acupuncture. *Br J Dermatol*. 2006 Nov;155(5):970-6. PubMed PMID: 17034527.

97: Crabtree EC, Beck M, Lopp BR, Nosovitch M, Edwards JN, Boezaart AP. A method to estimate the depth of the sciatic nerve during subgluteal block by using thigh diameter as a guide. *Reg Anesth Pain Med*. 2006 Jul-Aug;31(4):358-62. PubMed PMID: 16857556.

98: Franco CD, Choksi N, Rahman A, Voronov G, Almachnouk MH. A subgluteal approach to the sciatic nerve in adults at 10 cm from the midline. *Reg Anesth Pain Med*. 2006 May-Jun;31(3):215-20. PubMed PMID: 16701186.

99: Consales A, Poppi M, Stumpo M. Sciatic schwannoma spanning the sciatic notch: removal by an anterior, transabdominal approach. *Br J Neurosurg*. 2006 Feb;20(1):46-8. PubMed PMID: 16698610.

100: Mohit AA, Fisher DJ, Matthews DC, Hoffer E, Avellino AM. Inferior vena cava thrombosis causing acute cauda equina syndrome. Case report. *J Neurosurg*. 2006 Jan;104(1 Suppl):46-9. PubMed PMID: 16509481.

101: Khan AM, Synnot K, Cammisa FP, Girardi FP. Lumbar synovial cysts of the spine: an evaluation of surgical outcome. *J Spinal Disord Tech*. 2005 Apr;18(2):127-31. PubMed PMID: 15800428.

102: Maniker A, Thurmond J, Padberg FT Jr, Blacksin M, Vingan R. Traumatic venous varix causing sciatic neuropathy: case report. *Neurosurgery*. 2004 Nov;55(5):1224. PubMed PMID: 15791740.

103: Erhard RE, Egloff BP. Patient with metastatic adenocarcinoma imitating lumbar herniated nucleus pulposus. *J Manipulative Physiol Ther*. 2004 Nov-Dec;27(9):569-73. Erratum in: *J Manipulative Physiol Ther*. 2005 May;28(4):290. PubMed PMID: 15614244.

104: Stendel R, Danne M, Schulte T, Stoltenburg-Didinger G, Brock M. Chronic lumbar epidural haematoma presenting with acute paraparesis. *Acta Neurochir (Wien)*. 2003 Nov;145(11):1015-8;

discussion 1018. Review. PubMed PMID: 14628208.

105: Kurtkaya-Yapicier O, Scheithauer BW, Woodruff JM, Wenger DD, Cooley AM, Dominique D. Schwannoma with rhabdomyoblastic differentiation: a unique variant of malignant triton tumor. *Am J Surg Pathol*. 2003 Jun;27(6):848-53. PubMed PMID: 12766593.

106: Yamaguchi S, Hida K, Akino M, Yano S, Iwasaki Y. Spinal subdural hematoma: a sequela of a ruptured intracranial aneurysm? *Surg Neurol*. 2003 May;59(5):408-12; discussion 412. PubMed PMID: 12765819.

107: Fourney DR, Prabhu SS, Cohen ZR, Gokaslan ZL, Rhines LD. Early sacral stress fracture after reduction of spondylolisthesis and lumbosacral fixation: case report. *Neurosurgery*. 2002 Dec;51(6):1507-10; discussion 1510-1. PubMed PMID: 12445359.

108: Yurtseven T, Zileli M, Göker EN, Tavmergen E, Hoşçoşkun C, Parildar M. Gluteal artery pseudoaneurysm, a rare cause of sciatic pain: case report and literature review. *J Spinal Disord Tech*. 2002 Aug;15(4):330-3. Review. PubMed PMID: 12177552.

109: Hildebrandt J. [Relevance of nerve blocks in treating and diagnosing low back pain—is the quality decisive?]. *Schmerz*. 2001 Dec;15(6):474-83. German. PubMed PMID: 11793154.

110: Fanucci E, Masala S, Sodani G, Varruciu V, Romagnoli A, Squillaci E, Simonetti G. CT-guided injection of botulinic toxin for percutaneous therapy of piriformis muscle syndrome with preliminary MRI results about denervative process. *Eur Radiol*. 2001;11(12):2543-8. Epub 2001 May 12. PubMed PMID: 11734957.

111: Mishra GP, Sharma RR, Lad SD, Pawar SJ, Mahapatra AK. Gluteal neuralgia - unusual presentation in an adult with intrasacral meningocele: a case report and review of literature. *Neurol India*. 2000 Sep;48(3):279-81. Review. PubMed PMID: 11025636.

112: Yi-Kai L, Xueyan A, Fu-Gen W. Silver needle therapy for intractable low-back pain at tender point after removal of nucleus pulposus. *J Manipulative Physiol Ther*. 2000 Jun;23(5):320-3. PubMed PMID: 10863251.

113: Kaneko K, Inoue Y, Nakano Y, Kikuchi K, Uta S. Lumbar spinal synovial cyst presenting with neurological deficit. A case report and review of the literature. *Bull Hosp Jt Dis*. 1999;58(4):212-6. Review. PubMed PMID: 10711372.

114: Kikuchi K, Saito M. Ganglion-cell tumor of the filum terminale: immunohistochemical characterization. *Tohoku J Exp Med*. 1999 Jul;188(3):245-56. PubMed PMID: 10587016.

115: Fishman SM, Caneris OA, Bandman TB, Audette JF, Borsook D. Injection of the piriformis muscle by fluoroscopic and electromyographic guidance. *Reg Anesth Pain Med*. 1998 Nov-Dec;23(6):554-9. PubMed PMID: 9840849.

116: Bleasdale-Barr KM, Mathias CJ. Neck and other muscle pains in autonomic failure: their association with orthostatic hypotension. *J R Soc Med*. 1998 Jul;91(7):355-9. PubMed PMID: 9771493; PubMed Central PMCID: PMC1296807.

117: Nakayama S, Fujino H, Inomori S, Shuto T, Basugi N, Kuwabara T. [A case of a lumbar spinal synovial cyst located on the midline]. *No Shinkei Geka*. 1998 Aug;26(8):717-22. Japanese. PubMed PMID: 9744001.

- 118: Kline DG, Kim D, Midha R, Harsh C, Tiel R. Management and results of sciatic nerve injuries: a 24-year experience. *J Neurosurg.* 1998 Jul;89(1):13-23. PubMed PMID: 9647167.
- 119: Yoshino O, Matsui H, Hirano N, Tsuji H. Acquired dural arteriovenous malformations of the lumbar spine: case report. *Neurosurgery.* 1998 Jun;42(6):1387-9. PubMed PMID: 9632202.
- 120: Johnson JP, Lane JM. Traumatic lumbar pseudomeningocele occurring with spina bifida occulta. *J Spinal Disord.* 1998 Feb;11(1):80-3. PubMed PMID: 9493775.
- 121: Kotilainen EM, Pajulo O. Spontaneous epidural hematoma as a cause of sciatic pain in a schoolboy. *Pediatr Neurol.* 1997 Nov;17(4):350-2. PubMed PMID: 9436801.
- 122: Parziale JR, Hudgins TH, Fishman LM. The piriformis syndrome. *Am J Orthop (Belle Mead NJ).* 1996 Dec;25(12):819-23. Review. PubMed PMID: 9001677.
- 123: Serri S. [Venous surgery of the lower limb: value of nerve blocks]. *Cah Anesthesiol.* 1996;44(5):441-5. French. PubMed PMID: 9183427.
- 124: Hassenbusch SJ, Stanton-Hicks M, Covington EC. Spinal cord stimulation versus spinal infusion for low back and leg pain. *Acta Neurochir Suppl.* 1995;64:109-15. PubMed PMID: 8748596.
- 125: Beatty RA. The piriformis muscle syndrome: a simple diagnostic maneuver. *Neurosurgery.* 1994 Mar;34(3):512-4; discussion 514. PubMed PMID: 8190228.
- 126: Lin LC, Sun YC, Tseng KF, Chang RY, Leung HK. Comparison of preoperative and postoperative iliohypogastric ilioinguinal nerve block for pediatric herniorrhaphy patients. *Ma Zui Xue Za Zhi.* 1993 Jun;31(2):91-6. PubMed PMID: 7934692.
- 127: Barolat G, Massaro F, He J, Zeme S, Ketcik B. Mapping of sensory responses to epidural stimulation of the intraspinal neural structures in man. *J Neurosurg.* 1993 Feb;78(2):233-9. PubMed PMID: 8421206.
- 128: O'Brien DP, Singh J, Dias PS. Spinal epidermoid cyst and cauda equina syndrome in a teenage girl. *Ir J Med Sci.* 1992 Dec;161(12):675-8. Review. PubMed PMID: 1366239.
- 129: Hargreaves DM, Spargo PM, Wheeler RA. Caudal blockade in the management of aortic thrombosis following umbilical artery catheterisation. *Anaesthesia.* 1992 Jun;47(6):493-5. PubMed PMID: 1616086.
- 130: Broeng L, Hansen LB. [Purulent coxitis after blockade treatment]. *Ugeskr Laeger.* 1991 Aug 26;153(35):2433-4. Danish. PubMed PMID: 1949247.
- 131: Durrani Z, Winnie AP. Piriformis muscle syndrome: an underdiagnosed cause of sciatica. *J Pain Symptom Manage.* 1991 Aug;6(6):374-9. PubMed PMID: 1880438.
- 132: Vandertop WP, Bosma NJ. The piriformis syndrome. A case report. *J Bone Joint Surg Am.* 1991 Aug;73(7):1095-7. PubMed PMID: 1874775.
- 133: Sloan PA. Neuropathic cancer-related pain. *J Palliat Care.* 1991 Summer;7(2):44-6. PubMed PMID: 1870045.
- 134: Busch EH, Lamer TJ. Injection of the facetectomy remnant in the evaluation and treatment of postsurgical back pain: case reports. *Clin J Pain.* 1990 Jun;6(2):125-7. PubMed PMID: 2152009.

- 135: Dupeyrat A, Dequiré PM, Mérouani A, Moullier P, Eid G. [Subarachnoid hematoma and spinal anesthesia]. *Ann Fr Anesth Reanim*. 1990;9(6):560-2. French. PubMed PMID: 2278424.
- 136: Lemish W, Apsimon T, Chakera T. Lumbar intraspinal synovial cysts. Recognition and CT diagnosis. *Spine (Phila Pa 1976)*. 1989 Dec;14(12):1378-83. PubMed PMID: 2533404.
- 137: Marks R. Distribution of pain provoked from lumbar facet joints and related structures during diagnostic spinal infiltration. *Pain*. 1989 Oct;39(1):37-40. PubMed PMID: 2530485.
- 138: Papadopoulos SM, McGillicuddy JE, Messina LM. Pseudoaneurysm of the inferior gluteal artery presenting as sciatic nerve compression. *Neurosurgery*. 1989 Jun;24(6):926-8. PubMed PMID: 2747872.
- 139: Asai A, Matsutani M, Maeda T, Tanaka H, Nakamura O, Funada N, Koike M. [Angioblastic meningioma with metastases to the vertebra and adjacent bones: a case report]. *No Shinkei Geka*. 1988 May;16(6):785-9. Japanese. PubMed PMID: 3412568.
- 140: Rawlings CE 3rd, Wilkins RH, Martinez S, Wilkinson RH Jr. Osteoporotic sacral fractures: a clinical study. *Neurosurgery*. 1988 Jan;22(1 Pt 1):72-6. PubMed PMID: 2449628.
- 141: Holtzman RN, Dubin R, Yang WC, Rorat E, Liu HM, Leeds NE. Bilateral symptomatic intraspinal T12-L1 synovial cysts. *Surg Neurol*. 1987 Sep;28(3):225-30. PubMed PMID: 3629450.
- 142: Gaylord TG, Pearson JW. Neuropathy following paracervical block in the obstetric patient. *Obstet Gynecol*. 1982 Oct;60(4):521-4. PubMed PMID: 7121939.
- 143: Toakley JG. Subcutaneous lumbar "rhizolysis"—an assessment of 200 cases. *Med J Aust*. 1973 Sep 8;2(10):490-2. PubMed PMID: 4270774.
- 144: Bors E, Porter RW. Neurosurgical considerations in bladder dysfunction. *Urol Int*. 1970;25(2):114-33. PubMed PMID: 5422713.
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