

## Asymptomatic spina bifida occulta involving sacrum in an elderly female

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It has been estimated that 20% of all myelomeningoceles involve the sacral level and majority of these patients with sacral level lesions have fewer complications than with high level lesions. (1-5)



**Figure 1** - Posterior view of the sacrum shows a dry bone specimen of sacral spina bifida occulta, where there is failure of closure of the sacral canal at all sacral levels

A 60 year female presented with low back pain of two year duration, non-radiating in nature but increased by bending forward. There was no history of bowel or bladder disturbances. She had swelling over low back region since childhood not associated with pain. Her general and systemic examination was normal. There was diffuse, non-tender, non-pulsatile swelling over sacral region. Skin over the swelling was healthy. Plain lumbo-sacral x-ray demonstrated a sacral bone defect. Pelvic computed tomography (CT) showed a defect at the dorsal aspect of the sacrum with diffuse soft tissue swelling (Figure 1). Patient responded to conservative management and physiotherapy. There are many reports on the incidence of sacral spina bifida occulta and it has been suggested that 90-100% of patients with a sacral level lesion are ambulant. (1, 6-10) The reported clinical significance of sacral spina bifida occulta ranges from an anatomical variant of little or no importance on its own to a very important cause of meningocele or neurological deficits. (1, 6, 10-17) In absence of external manifestations occult spina bifida of the sacrum can be associated with a number of

conditions including backache, posterior disc herniation, enuresis and functional disorders of the lower urinary tract, and neurological abnormalities of the feet. (10, 18-20) It has been hypothesized that the absence of the first sacral spinous process and the ligaments that normally run between it and the spinous process of the fifth lumbar vertebra spina bifida occulta may be associated with low back pain. (21) Awareness and knowledge of the congenital defect of sacrum must be considered before undertaking any procedure on the sacrum (i.e. caudal epidural block, internal fixation via transpedicular and lateral mass screws) as if the anomaly is overlooked it can lead to serious complications. (2, 5, 22)

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#### **References**

1. Brinker MR, Rosenfeld SR, Feiwell E, Granger SP, Mitchell DC, Rice JC. Myelomeningocele at the sacral level. Long-term outcomes in adults. *The Journal of bone and joint surgery American volume* 1994;76:1293-1300.
2. SENOGLU N, SENOGLU M, GUMUSALAN Y. Total spina bifida occulta of the sacrum. *International Journal of Anatomical Variations* 2008;1:27-28.
3. Romanes G. *Cunningham's Textbook of Anatomy* (ed. 11) Oxford University Press. New York 1972:295.
4. Williams PL. *Gray's anatomy*: Churchill livingstone New York, 1995.
5. Srijit D, Shipra P. Spina bifida with higher position of sacral hiatus: a case report with clinical implications. *Bratislavske lekarske listy* 2007;108:467-469.
6. Schoenmakers M, Gulmans V, Gooskens R, Helders P. Spina bifida at the sacral level: more than minor gait disturbances. *Clinical rehabilitation* 2004;18:178-185.
7. Asher EF, Garrison RN, Ratcliffe DJ, Fry DE. Endotoxin, cellular function, and nutrient blood flow. *Archives of surgery (Chicago, Ill : 1960)* 1983;118:441-445.
8. Findley TW, Agre JC, Habeck RV, Schmalz R, Birkebak RR, McNally MC. Ambulation in the adolescent with myelomeningocele. I: Early childhood predictors. *Archives of physical medicine and rehabilitation* 1987;68:518-522.
9. Hoffer MM, Feiwell E, Perry R, Perry J, Bonnett C. Functional ambulation in patients with myelomeningocele. *The Journal of bone and joint surgery American volume* 1973;55:137-148.
10. Albrecht TL, Scutter SD, Henneberg M. Radiographic method to assess the prevalence of sacral spina bifida occulta. *Clinical anatomy (New York, NY)* 2007;20:170-174.
11. Barazi SA, Cudlip S, Johnston F. High and low pressure states associated with posterior sacral meningocele. *British journal of neurosurgery* 2003;17:184-187.
12. Wolf LS, McLaughlin JF. Early motor development in infants with meningomyelocele. *Pediatric Physical Therapy* 1992;4:12-17.
13. Ong LC, Lim YN, Sofiah A. Malaysian children with spina bifida: relationship between functional outcome and level of lesion. *Singapore medical journal* 2002;43:12-17.
14. Pierre-Kahn A, Zerah M, Renier D, et al. Congenital lumbosacral lipomas. *Child's nervous system: ChNS: official journal of the International Society for Pediatric Neurosurgery* 1997;13:298-334; discussion 335.
15. Holmbeck GN, Faier-Routman J. Spinal lesion level, shunt status, family relationships, and psychosocial adjustment in children and adolescents with spina bifida myelomeningocele. *Journal of pediatric psychology* 1995;20:817-832.
16. McDonald CM, Jaffe KM, Mosca VS, Shurtleff DB. Ambulatory outcome of children with

myelomeningocele: effect of lower-extremity muscle strength. *Developmental medicine and child neurology* 1991;33:482-490.

17.Schwartz S, Cohen ME, Herbison GJ, Shah A. Relationship between two measures of upper extremity strength: manual muscle test compared to hand-held myometry. *Archives of physical medicine and rehabilitation* 1992;73:1063-1063.

18.Avrahami E, Frishman E, Fridman Z, Azor M. Spina bifida occulta of S1 is not an innocent finding. *Spine* 1994;19:12-15.

19.Fidas A, MacDonald HL, Elton RA, McInnes A, Wild SR, Chisholm GD. Prevalence of spina bifida occulta in patients with functional disorders of the lower urinary tract and its relation to urodynamic and

neurophysiological measurements. *BMJ (Clinical research ed)* 1989;298:357-359.

20.Galloway NT, Tainsh J. Minor defects of the sacrum and neurogenic bladder dysfunction. *British journal of urology* 1985;57:154-155.

21.de Anquin CE. SPINA BIFIDA OCCULTA WITH ENGAGEMENT OF THE FIFTH LUMBAR SPINOUS PROCESS A Cause of Low Back Pain and Sciatica. *Journal of Bone & Joint Surgery, British Volume* 1959;41:486-490.

22.Sekiguchi M, Yabuki S, Satoh K, Kikuchi S. An anatomic study of the sacral hiatus: a basis for successful caudal epidural block. *The Clinical journal of pain* 2004;20:51-54.