Imposing Hyperostosis and Spinal Cord Compression Post Radiation Therapy

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Introduction

Extensive cranial/spinal Dural calcifications have been described in recurrent subdural hemorrhage, secondary and tertiary hyperparathyroidism and the Gorlin-Goltz syndrome. Hereditary Multiple Exostosis of the rib with neural foraminal extension as a cause of spinal cord compression and scoliosis has been reported. In that case report, a young male with hereditary multiple exostosis presented with a spastic gait, lower limb weakness and a deformity of the upper back. This required surgical extirpation and rehabilitative follow up. Foramen Magnum and cervical bone lesions have also been described as causes of a myriad of spondylitic symptoms from numbness and tingling to myelopathy and quadriaparesis. In all demonstrable case presentation, surgical intervention was warranted for decompression and symptomatic relief regardless of etiology. In all demonstrable case presentation, surgery was a warranted intervention to decompression and symptomatic relief independent of etiology.

The authors present a case of Dural Hyperostosis/Calcification pre-dated by a previously removed ependymoma and adjacent field radiation to the tumor field. This resulted in exophytic bone growth, spinal cord compression and neurological compromise.

Case Study

In 2000, then 52-year-old female presented to our neurosurgical clinic with progressive lower extremity motor/sensory abnormalities and an MRI depicting a tumor mass in the conus medullaris. Surgical extirpation and neuropathological diagnosis of a Grade II ependymoma were antecedents to >50 Gy of radiation over a fractionated course.

In Spring of 2019, this patient presented again to the complex neurosurgical spine clinic with progressive weakness pattern in her lower extremities and functional loss from her usual and customary daily activities.

Pre-operative CT Scan’s assisted in the diagnosis of hypertrophic calcification and adjacent level spinal cord compression.

After pre-operative surgical clearances, this patient underwent a surgical decompression of T10-11, and the discovery of calcified dura mater. (Arachnoiditis Ossificans) The two-level bony decompression required the use of a lumbar drain, muscle grafting and sealant for repair. Patient post-operative course was without post-surgical event or setback. She subsequently returned to her domicile of care ambulating and relieved of acute pain symptoms.

Discussion

- Hyperostosis and Exostosis signify the abnormal growth of bone or calcification existent to a normal local.
- Following a delivered high-dose field radiation for a primary spinal cord tumor. The patient experienced progressive neurological sequelae of the bony ingrowths and ultimately required surgical extirpation. The outcome was expected with return to her pre-morbid condition.

Citations

2. https://radiopaedia.org/articles/dural-calculifications
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC349213/
   hereditary-exostosis-and-spinal-cord-compression