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The Onus on the Conus: A Neuroimaging Spectrum of Conus Medullaris Pathologies

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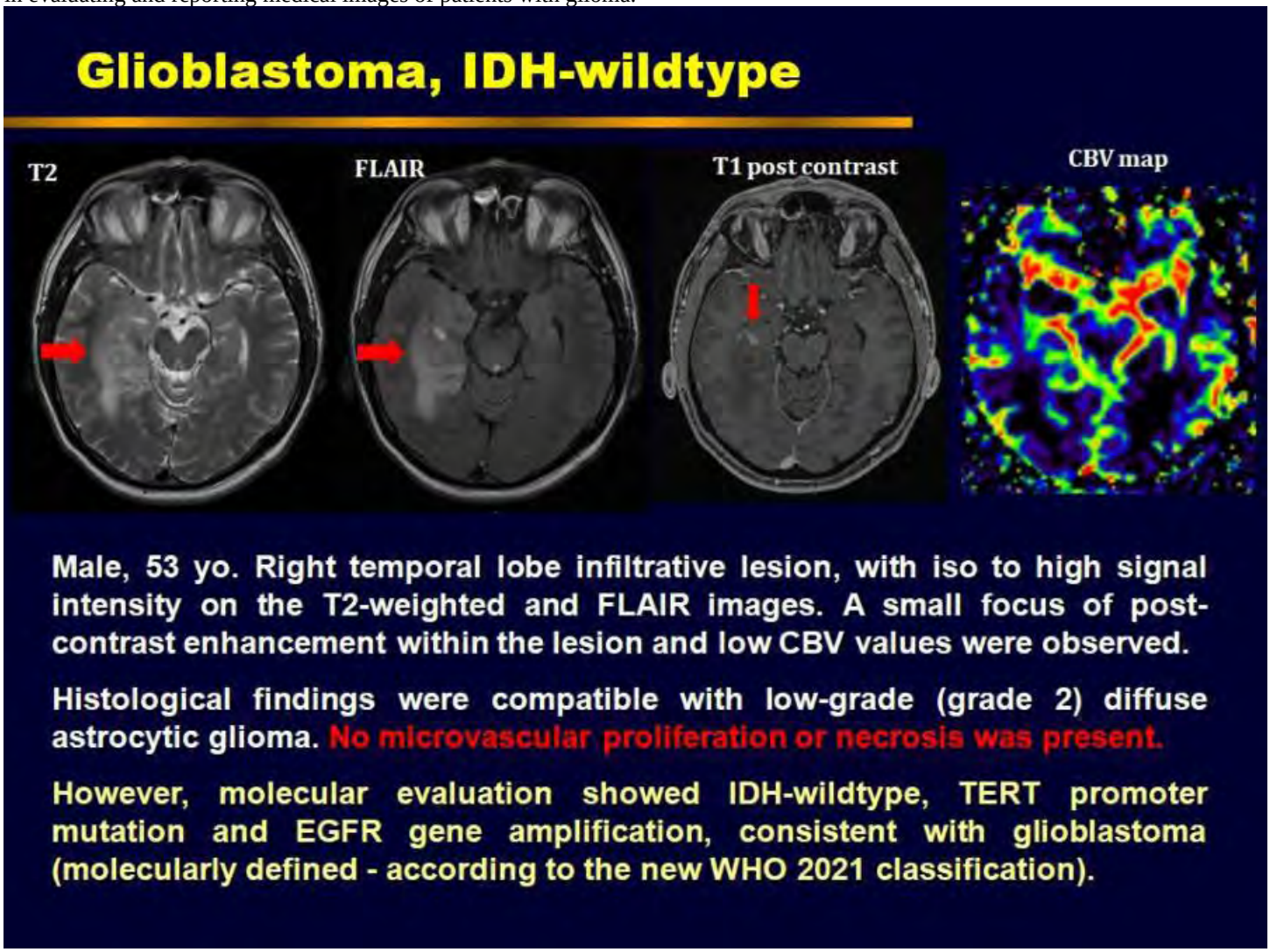
Materials and Methods
To show the recommendations of the new World Health Organization 2021 (WHO 2021) classification for adult and pediatric gliomas and the main modifications concerning the previous one (WHO 2016), exemplified by imaging, histopathological and molecular findings of patients followed at our institution.
Results
Presentation and discussion of the main recommendations of the new WHO 2021 classification for gliomas, based on the medical images and molecular features of adult and pediatric patients with gliomas.
Conclusions
It is important that neuroradiologists are familiarized with the new classification of CNS tumors, so that they can use this knowledge in evaluating and reporting medical images of patients with glioma.



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The Onus on the Conus: A Neuroimaging Spectrum of Conus Medullaris Pathologies
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Purpose
The conus medullaris is the tapered, cone-shaped end of the distal thoracic spinal cord, normally terminating near the L1-2 intervertebral disc space. As a junction between the cord and the cauda equina nerve roots, the conus can present with common cord pathologies in atypical presentations, as well as present with unique, complex pathologies found nowhere else in the cord. The conus is optimally evaluated with MRI of the lumbar spine before and after the administration of contrast medium. Accurate diagnosis of lesions within the conus is complicated by the nonspecific nature of increased intramedullary signal on T2-weighted MRI imaging, inherent with many cord pathologies. However, enhancement characteristics, degree of cord edema, and extramedullary findings can provide additional information to narrow the differential diagnosis. The onus is thus on the radiologist to develop a cogent differential diagnosis for optimal patient care. In this exhibit, we present representative cases of conus medullaris lesions from our institutional

archive, outlined accordingly: congenital (caudal regression syndrome, Chiari Two with tethered cord and lipomyelomeningocele, diastematomyelia), primary neoplastic (myxopapillary ependymoma, anaplastic astrocytoma, teratoma, lipoma), secondary neoplastic (metastatic breast cancer), infectious/inflammatory (Guillan-Barré Syndrome, vincristine neuritis), and vascular (conus infarct). We will also include rare pathologies, including conus infantile hemangioma, conus plasmacytic neoplasm, conus intramedullary arachnoid cyst, and hydromyelia of the terminal ventricle. Each case will include brief literature review with discussion points. After reviewing this exhibit, the participant should be able to: 1. Recognize the normal and pathological MRI appearance of the conus medullaris. 2. Develop a practical differential diagnosis for a conus medullaris lesion based on MRI signal characteristics, enhancement pattern, and relationship to clinical presentation.

Materials and Methods

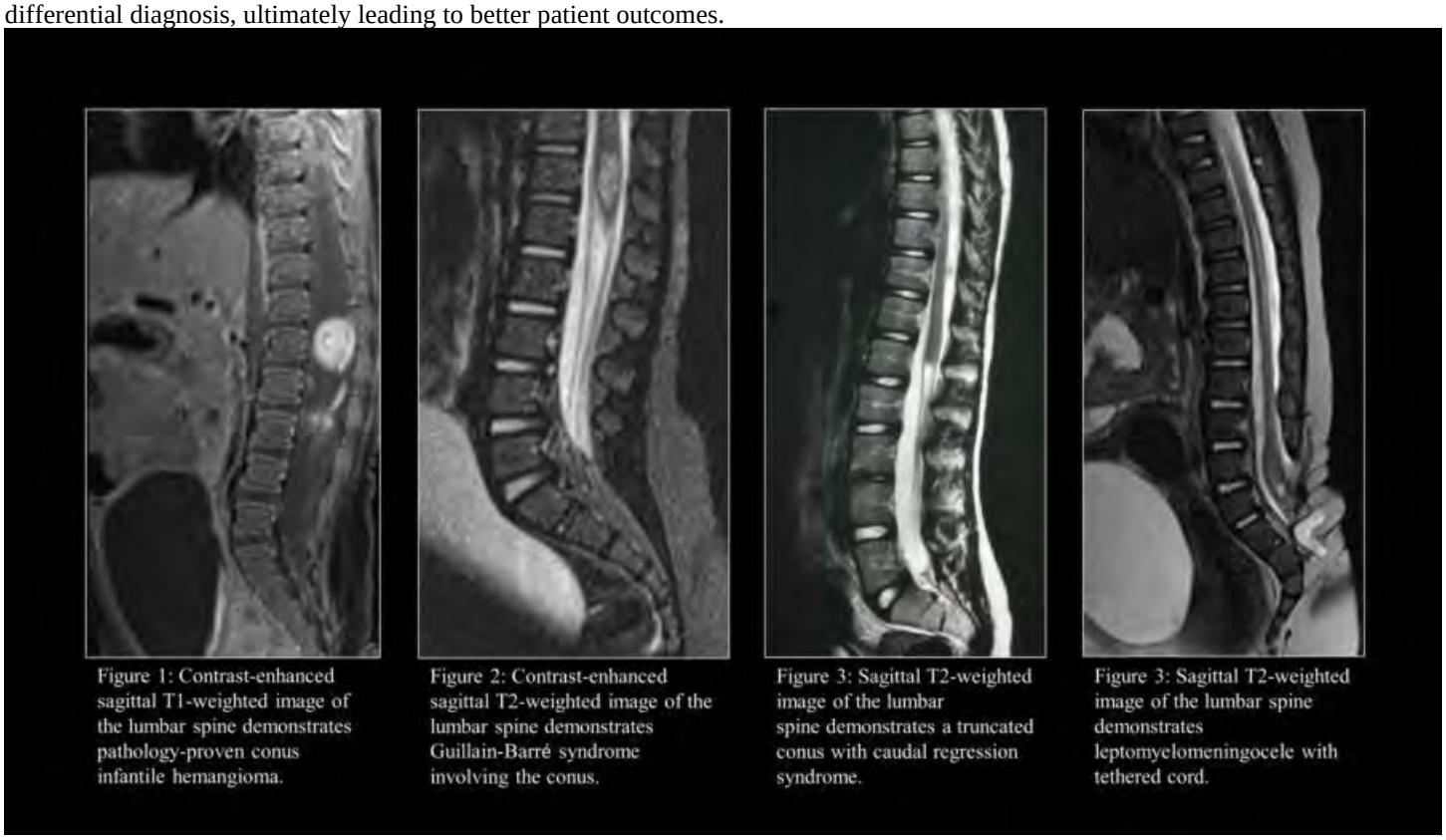
N/A

Results

N/A

Conclusions

As a junction between the thoracic cord and the cauda equina nerve roots, the conus medullaris can present with common and unique cord pathologies. Pathologies within the cord are numerous, often complex, and difficult to delineate from each other. Thus, a thorough knowledge of the pathologies that can present in the conus medullaris is necessary to help the radiologist develop an accurate differential diagnosis, ultimately leading to better patient outcomes.



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The Otodystrophies: What the Radiologist Needs to Know

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Purpose

Summary Introduction Anatomy and development of the temporal bone Pathophysiology and imaging findings of the main otodystrophies: Otosclerosis Paget's disease Fibrous dysplasia Osteogenesis imperfecta Osteopetrosis Progressive diaphyseal dysplasia (Camurati–Engelmann dysplasia) Van Buchem disease Others Differential diagnoses Incomplete endochondral ossification of the otic capsule Ossicular chain fixation and tympanoesclerosis Otosyphilis Ossicular chain malformation X-linked hypophosphatasia Take-home messages Conclusion References The purpose of this exhibition is to review the imaging findings of the otodystrophies and their main differential diagnoses.

Materials and Methods

The purpose of this exhibit is: To review the anatomy and development of the temporal bone. To recognize the imaging findings of the main otodystrophies. To recognize the main differential diagnosis of otodystrophies. To illustrate the main parameters to be reported in the preoperative and postoperative evaluation of these disorders.