Evaluating CNS Lesions in HIV Patients: A Radiologic/Pathologic Review
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PURPOSE
Approximately 35 million people live with HIV/AIDS worldwide with 11.2 per 100,000 new HIV/AIDS cases in Arizona in 2013. Fortunately, for patients in Arizona, specialized diagnosis and treatment facilities are available for state of the art diagnosis and treatment.

Many HIV/AIDS patients undergo a substantial morbidity and mortality with the development of CNS abnormalities including toxoplasmosis encephalitis (TE), progressive multifocal leukoencephalopathy (PML), primary central nervous system lymphoma (PCNSL), and other opportunistic infections.

Especially in these immunocompromised patients, early accurate diagnosis can affect patient management, which is vital to patient survival.

METHODS
Following institutional IRB approval, we retrospectively analyzed patients with known HIV infection who underwent radiologic imaging and subsequent biopsy of an identified neuropathologic lesion(s) at Maricopa Medical Center between January 2007 and January 2015.

Diagnostic scan reports were analyzed to determine whether or not the correct diagnosis was provided in the impression, and rates of correct diagnosis were compared between a fellowship trained neuroradiologist and a general radiologist.

RESULTS
33 patients received neurologic imaging with MRI for a pathologically proven HIV/AIDS related illness with 78 total lesions identified.

Overall, the correct diagnosis was mentioned in the initial impression in 21 of 33 (64%) cases, while it was not mentioned in 12 of the 33 (36%) cases.

CONCLUSIONS
The correct diagnosis was mentioned in 64% of cases overall and there was a substantial difference in the accuracy of reporting the correct diagnosis between neuroradiologists and those without specialized neuroradiologic training (79% versus 43%).

The proportional difference test did not show a statistically significant difference in the proportions of correct diagnoses between neuroradiologist vs general radiologist (p=0.108). However, chi-squared analysis showed a statistically significant relationship in the number of mentioned correct diagnoses by the neuroradiologist vs general radiologist (p<0.033). Future studies should have a larger patient pool.

Our study suggests that the availability and utilization of specialty fellowship trained staff in radiology is an essential part of accurate early diagnosis.

Taking an active role in the work up and diagnosis of specialized disease processes is essential for successful and comprehensive care, especially in our local community where HIV/AIDS support and treatment is on the cutting edge.