

ADULT INTRACRANIAL NEOPLASMS: RADIOLOGIC AND HISTOPATHOLOGICAL CORRELATION

Abstract

Keywords: Adult, Intracranial, neoplasm, MRI, histopathology, correlation, diagnostic accuracy and agreement

Background: Imaging plays an important part in the management and prognosis of an intracranial neoplasm. MRI and its advancement with the addition of DWI/ ADC, PWI and MRS have greatly enhanced the diagnostic accuracy of MRI in that there is better characterisation and differentiation of intracranial neoplasms.

Aim: To document and evaluate the histopathological diagnoses and the MRI imaging findings of intracranial neoplasms in adult patients at CHBAH.

Method: A retrospective study was conducted using MRI and histopathology reports from January 2017 to September 2019. Statistical significance was met when p-value <0.05.

Results: The study included 53 (N=53) adult patients with confirmed intracranial neoplasms. There were 26 (49%) males and 27 (51%) females with an age range of 18 to 71 years. The most frequent anatomical sites were the sellar/suprasellar region 22 (42%) and the frontal lobe 8 (15%). Pituitary adenoma 18 (34%) was the most common neoplasm followed by meningioma 14 (26%) and glioblastoma 7 (13%). Low-grade (WHO I/II) neoplasms were more frequent 37 (70%) than the high-grade neoplasms (WHO III/IV) [16 (30 %)]. The overall concordance between the MRI and the histopathology diagnoses and grading demonstrated a good agreement with Kappa values of 0.63 and 0.71, respectively.

Conclusion:

Conventional MRI constitutes the most utilised MRI technique in the characterisation of intracranial neoplasms. Due to limitations thereof, advanced MRI techniques may improve the diagnostic accuracy. Conventional MRI, advanced MR techniques and histopathology are complementary diagnostic modalities for the classification of intracranial neoplasms.