

ABSTRACT

Background:

Meningiomas are a group of neoplasm of leptomeninges which arise from arachnoid cap cells. It is the commonest primary central nervous system (CNS) tumour, which accounts for almost 30% of all CNS tumours. Histopathological type and grade provide important information in prognostication.

Objectives:

The main objective of this research is to evaluate the clinical characteristics and histopathological features of meningiomas diagnosed at a tertiary care hospital in Sri Lanka.

Methods:

This study is a descriptive cross-sectional study done on all the meningiomas diagnosed at the Department of Histopathology, National Hospital of Sri Lanka over two years (1 January 2018 to 31 December 2019). Selected clinical characteristics and histopathological features of meningioma were studied. The analysis was done by descriptive statistics. Associations were determined by using Chi-square/ Fisher's-exact tests.

Results:

A total of 190 meningiomas were selected for the study. The majority was female (77.4%, n=147) with a M:F ratio of 1:3.42. The age at diagnosis ranged from 23-84 years and the mean age was 51.86 years. Most of the meningiomas were located intracranially (89%, n=169), of which 48.52% (n=82) located in the cerebral

convexities. The other common locations were sphenoidal wing (15.98%, n=27), parafalcine (12.43%, n=21) and in posterior fossa (6.84%, n=13).

The commonly encountered histological types were meningothelial (35.26%, n=67), transitional (27.37%, n=52) and fibrous (4.74%, n=9) meningiomas. The infrequent types were psammomatous (3.68%, n=7), angiomatous (3.16%, n=6), lymphoplasmacyte rich (1.05%, n=2), chordoid (2.11%, n=4), and clear-cell (1.05%, n=2) meningiomas. There were 39 (20.53%) atypical meningiomas, one papillary meningioma and one anaplastic meningioma. WHO grade 1, 2 and 3 represented 75.2% (n=143), 23.7% (n=45) and 1.1% (n=2) respectively.

Out of the seven histopathological aggressive features assessed, hypercellularity and necrosis were the common features seen in WHO grade 1 meningiomas followed by sheet like growth pattern, small cells and the presence of nucleoli. The most common diagnostic feature in atypical meningiomas was brain invasion followed by high mitotic count (>4/10hpf).

There was a statistically significant association between meningothelial meningioma being locating in the floor of anterior and middle cranial fossa in compared to convexities (p=0.00004). In contrast, statistically significantly transitional meningiomas were located in the convexities in compared to floor of the anterior and middle cranial fossa (p=0.006). None of the atypical meningiomas were located in the spinal region.

Conclusion:

Most of the findings of this study were in par with the findings of the studies done in other South-East-Asia countries and Western countries.

Key words: Meningioma, Histopathology, Atypical Meningioma, Sri Lanka