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RP 06

Distribution of atypical histological features among different subtypes of WHO grade 1 meningiomas: a single-centre descriptive study

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Introduction and objectives: World Health Organization (WHO) Grade-I meningiomas with atypical features behave more aggressively than similarly graded tumours without atypical features. The aim of the study was to describe the epidemiological data and to determine the frequency of atypical histological features in WHO Grade-I meningiomas.

Methodology: All WHO Grade-I meningiomas diagnosed at the National Hospital of Sri Lanka over two years, from 1st of January 2018 to 31st of December 2019 were included in the study. There were 143 Grade-I meningiomas. The epidemiological and histological features were reviewed.

Results: Patient age ranged from 23-84 years (mean=52.3-years, SD=13.6-years). 78% were females. The majority were meningothelial meningiomas (46.8%, n=67) followed by transitional (36.4%, n=52), fibrous (6.3%, n=9), psammomatous (4.9%, n=7), angiomatous (4.2%, n=6) and lymphoplasmacytic rich (1.4%, n=2) meningiomas. Atypical histological features included hypercellularity (8.4%, n=12), tumour necrosis (8.4%, n=12), sheet like growth pattern (4.2%, n=6), presence of nucleoli (2.1%, n=3) and small cells with high N:C ratio (0.7%, n=1). Twenty-three meningiomas (16.1%) had one atypical feature, and six (4.2%) had two atypical features. Atypical histological features were seen only in meningothelial (11.9%, 95%CI-6.6%-17.2%, n=17), transitional (9.8%, 95%CI-4.9%-14.7%, n=14) and fibrous meningiomas (2.1%, 95%CI0.4%-6.0%, n=3). There were no statistically significant associations between the presence of atypical histological features and sex (p=0.79), age category, location of meningioma or type of meningioma (meningothelial-p=0.86, transitional-p=0.53, fibrous-p=0.31).

Discussion and conclusion: The WHO Grade-I meningiomas have indolent behaviour. The presence of atypical histological features increases the risk of recurrences and is associated with a poor prognosis. Atypical features were present in 20% of grade-I meningiomas studied, and their effects on patients' prognosis and survival need to be assessed further in future studies.

Keywords: meningioma, grade I, atypical features

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