Manifestasi Neurooftalmologi Pasien Tumor Otak dan Faktor-Faktor yang Berhubungan di Rumah Sakit Umum Pusat Nasional Dokter Cipto Mangunkusumo = Neuroophthalmic Manifestations of Brain Tumor Patients and the Relating Factors in Ciptio Mangunkusumo Referral Hospital

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Abstrak

Latar belakang: Tumor otak merupakan penyakit neurologi yang memiliki morbiditas dan mortalitas tinggi akibat progresivitas gejalanya. Keberadaan tumor otak dapat mendestruksi jaras aferen dan eferen visual dengan demikian beberapa tumor otak memiliki manifestasi neurooftalmologi yang khas. Pengolahan data mengenai kelainan neurooftalmologi akibat tumor otak belum dilakukan sehingga belum dapat ditarik kesimpulan mengenai sebaran kelainan neurooftalmologi pasien tumor otak dan hubungan antara manifestasi klinis neurooftalmologi dengan karakteristik tumor otak.

Metode penelitian: Penelitian menggunakan disain analitik observasional potong lintang untuk mengetahui pola manifestasi neurooftalmologi pasien tumor otak dan karakteristik tumor otak yang berhubungan pada pasien tumor otak yang menjalani pemeriksaan neurooftalmologi pra-operasi dari bulan Januari 2014 hingga Desember 2019. Data kategorik disajikan dalam frekuensi dan persentase. Data numerik sebaran normal disajikan sebagai rerata sedangkan data sebaran tidak normal disajikan sebagai median dan nilai maksimalminimal. Analisis hubungan dua variabel kategorik menggunakan uji chi square atau uji Fisher. Hubungan antar variabel bermakna apabila p <0,05.

Hasil: Terdapat 70 subjek penelitian dengan sebagian besar berjenis kelamin perempuan 62,9% dan usia rata-rata 41,9+12,8 tahun. Terdapat 48 subjek tumor otak primer (68.6%) dengan jenis terbanyak meningioma (31,3%) dan adenoma hipofisis (29,2%). Diantara subjek tumor otak sekunder, keganasan payudara merupakan sumber metastasis terbanyak (36,4%). Jumlah lesi tumor otak mayoritas terdapat pada >1 lokasi dengan distribusi dominan unilateral. Lokasi tumor terbanyak di lobus frontal diikuti regio sela dan lobus oksipital. Seluruh subjek tumor otak penelitian ini memiliki manifestasi neurooftalmologi (100%) dengan kelainan bervariasi, tiga diantaranya persentase > 50%, yakni kelainan funduskopi (72,9%), gangguan visus (65,7%), gangguan gerak bola mata (51,4%). Manifestasi neurooftalmologi sebagian besar disertai manifestasi neurologis non-neurooftalmologi (68,6%). Karakteristik manifestasi neurooftalmologi predominan merupakan kombinasi beberapa kelainan (75,7%) dan distribusi pada dua mata (90,0%). Gangguan visus memiliki derajat keparahan berat– buta (Log MAR > 1.02) dan funduskopi papil atrofi (74,3%). Awitan manifestasi neurooftalmologi sebagian besar 3 bulan (62,7%). Pada penelitian ini, manifestasi neurooftalmologi dapat menjadi presentasi awal penyakit dengan persentase hampir separuh subjek (41.4%). Jenis tumor primer lebih menyebabkan gangguan lapang pandang dibandingkan tumor sekunder (p=0,002). Lokasi lesi memiliki hubungan signifikan dengan semua variabel manifestasi neurooftalmologi (p<0,05). Jumlah lokasi lesi >1 lokasi lebih menyebabkan kelainan funduskopi secara bermakna (p=0,043). Distribusi lesi tidak memiliki hubungan bermakna dengan semua variabel manifestasi

neurooftalmologi. Tumor otak sekunder memiliki awitan lebih cepat (<3 bulan) untuk menyebabkan manifestasi (p=0,000). Adapun lokasi lesi tidak mempengaruhi karakteristik manifestasi neurooftalmologi pada semua variabel. Awitan dipengaruhi oleh jumlah lokasi tumor yaitu lokasi tumor tunggal menyebabkan awitan 3 bulan bermakna (p=0,028). Distribusi lesi bilateral lebih cepat menyebabkan manifestasi neurooftalmologi yaitu <3 bulan (p=0,002).

Kesimpulan: Angka kejadian manifestasi neurooftalmologi pada pasien tumor otak pada penelitian mencapai 100% dengan kelainan funduskopi sebagai temuan terbanyak. Terdapat beberapa karakteristik tumor yang berhubungan secara signifikan dengan temuan manifestasi neurooftalmologi.
.....Background: Brain tumor is neurological disease having high morbidity and mortality due to progression of its symptoms. Presence of brain tumors can destroy visual pathways, thus some brain tumors have spesific neuroophthalmic (NO) manifestations. Data processing regarding neuroophthalmic disorders in brain tumors has not been carried out so that conclusions cannot be drawn regarding neuroophthalmic manifestations in brain tumor patients and its relationship with brain tumor characteristics.

Method: This is a cross-sectional observational analytic study to determine the pattern of neuroophthalmic manifestations of brain tumor patients and the associated brain tumor characteristics in brain tumor patients who underwent preoperative neuroophthalmological examination from January 2014 to December 2019. Categorical data will be presented in frequency and percentage. Normal distribution numerical data will be presented as mean, while abnormal distribution will be presented as median and maximum-minimum values. Analysis of relationship between two categorical variables is using chi square test or Fisher's exact test. Relationship between variables was significant if p <0.05.

Results: There were 70 subjects who met the inclusion criteria, most of them were female 62.9% with an average age of 41.9+12.8 years. There were 48 subjects with primary brain tumors (68.6%) with predominance of meningioma (31.3%) and pituitary adenomas (29.2%). Among the secondary brain tumor subjects, breast malignancy was most common metastases source (36.4%). Majority of brain tumor lesions in this study were in >1 location with dominant unilateral distribution. Most common tumor locations were in frontal lobe, sella region and occipital lobe. All brain tumor subjects in this study had neuroophthalmic manifestations (100%), mostly having percentage >50%, i.e. fundoscopic abnormalities (72.9%), visual disturbances (65.7%) and eye movement disorders (51.4%). Visual field disturbances have the smallest percentage (42.6%). Neuroophthalmic manifestations in this study were mostly accompanied by non-neuroophthalmic neurological manifestations (68.6%). Characteristic of the predominant neuroophthalmic manifestation were combination of several abnormalities (75.7%) and two eyes distribution (90.0%). Most of the visual disturbances were severe-blind (Log MAR > 1.02) and atrophic papillary funduscopy (74.3%). Onset of neuroophthalmic manifestations was mostly >3 months (62.7%). Neuroophthalmic manifestation could be the initial presentation of disease in almost half of the subjects (41.4%). Primary tumor caused more visual field disturbances significantly (p=0.002). Location of the lesion had significant relationship with all variables of neuroophthalmic manifestation (p<0.05). Tumor with more than 1 location caused more funduscopic abnormalities (p=0.043). Distribution of lesions did not have a significant relationship with all the neuroophthalmic variables. Secondary brain tumor had a faster onset (<3 months) to cause significant neuroophthalmic manifestations (p=0.000). Location of the lesion did not affect the neuroophthalmic

characteristics in all variables. The onset of the neuroophthalmic manifestation was influenced by the number of tumor locations, which is a single tumor causing faster onset (p=0.028). The distribution of bilateral lesions was causing the neuroophthalmic manifestation faste (p=0.002).

Conclusion: The incidence of neuroophthalmic manifestations in brain tumor patients in this study reached 100% with fundoscopic abnormalities as the most common finding. There are several tumor characteristics that significantly associated with the neuroophthalmic manifestations.