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Demographics of pediatric orbital lesions: A tertiary eye center experience in Saudi Arabia

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Orbital lesions vary in their classification, incidence and presentation depending on the age and the geographic distribution. Such lesions in the pediatric age group has been extensively studied because of the possibility of faster progression of orbital involvement and the higher risk of morbidity in this age group of patients where vision is still developing. In Saudi Arabia, this has been studied over a six-year period in the late 80's when retinoblastoma cases used to present late with orbital involvement. In this current study, we revisited the same topic 20 years later aiming at finding out the most recent prevalence of orbital lesions in a similar population of patients over a longer period (14 years) in the same eye center and at comparing the current results to other reports worldwide. A total of 107 lesions from 106 patients were identified by tissue diagnosis, out of which more than half of the lesions were benign cystic (being the commonest), vasculogenic and inflammatory in 63% [95% CI (53.3-72.0)] of all biopsied lesions. Neoplasms accounted for 37% [95% CI (28.0 – 45.8)] with rhabdomyosarcoma being the commonest accounting for about one third of neoplasms and no orbital cases of retinoblastoma were found. A five-year-old male presenting with progressive right facial swelling underwent multiple biopsies before being diagnosed with a polyostotic frontal-zygomatic primary intraosseous hemangioma. Intraosseous hemangiomas are rare, more frequently afflict adult females, and very rarely involve the orbit. Our case with bony destruction and surrounding soft tissue mass measured 5.3 cm in a child mimicked a more ominous malignancy. This case is unique with its rapid progression and largest reported size, leading to additional challenges such as difficulty in achieving an adequate tissue sample and in the surgical management with respect to significant blood loss in a small child. Diagnosis was based on visual acuity, ophthalmoscopic features and ancillary tests. Patient demographics, results of a clinical examination, test data and etiology were recorded. For each cause of OA, both gender and age group were analyzed as potential risk factors using simple univariate logistic regression. OA associated with glaucoma and retinal diseases was excluded. Description of causes of OA.Two hundred and four patients and 353 eyes met inclusion criteria. The median age was 27 years (range 3 months-77 years; interquartile range, 27 years) among 111(54.4%) females and 93(45.6%) males, with no statistically significant difference in age of presentation between the genders. The majority of lesions were bilateral (n=151, 74%). Tumors were the most common cause, accounting for 127 (62.2%) cases. These occurred mostly in adults (72.4%) compared to the pediatric group (OR=3.3, 95% CI: 1.79-6.03; P < .001). Hereditary neoplasia (OR=5.55; 95% CI: 1.67-18.42; P=.005) and metabolic diseases (OR=17.57; 95% CI: 2.15-143.62; P=.007) were more common causes in the pediatric group. There were no significant associations between gender or visual acuity and etiology of OA. In developed nations, OA is frequently the result of ischemia and neuritis. We found many other causes, especially orbital and intracranial tumors.The frequency of tumors as the cause of OA may represent a higher incidence of aggressive tumors coupled with poor recognition/acknowledgement of symptoms and limited access, resulting in late presentations. Our results demonstrated different distribution of orbital lesions in recent years reflecting the indirect effect of the improved health awareness and medical care in Saudi Arabia. This base-line demographic study is expected to be helpful for further clinical and prognostic studies with emphasis on pediatric orbital malignant lesions, their clinical presentation, management and prognosis.

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