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Guest Editorial

Saga of evolution: Orbital context

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"Those who do not move, do not notice their chains"- Rosa Luxemburg

The practice of management of orbital lesions has evolved over the past few years in all aspects including the understanding of pathophysiological aspects and therapy that evolved out of this understanding. Paradigm shifts have taken place in drug therapy and minimally invasive procedures have dominated over surgical procedures.

Pseudotumor that was a prevalent diagnosis has shrunk to being a diagnosis of exclusion.

Orbital inflammations and their masquerades now are labelled by a definite histopathologic diagnosis. The possibility of an infectious origin of Lymphomas has been put forward by the role of viral DNA as evidenced by molecular analysis. B cell and T cell have proven pathways in the disease. IgG4 related disease has drawn attention, being recognized as a disease complex that affects several organs including the orbit. There is a characteristic inflammatory reaction with lymphoplasmacytic dominance, eosinophilia and obliterative phlebitis. Serum analysis reveals raised IgG4 levels. Dramatic response to treatment with corticosteroids occurs. Intravenous immunoglobulin (IVIG) and plasmapheresis are resorted to for cases that have proved resistant to all other modalities of treatment.

The clinical profile of Orbital infections presenting as orbital cellulitis has been modified by the readily available over the counter advanced antibiotic and analgesic anti-

inflammatory medications. The fiery swollen lids with frozen globes are seen less as compared to the indolent persistent proptosis with dull ache. An orbital MRI/CT scan identifies a thick irregular walled cystic cavity, which prompts surgical drainage.

Vascular lesions of the orbit have undergone revolutionary changes in management. Oral propranolol therapy for infantile capillary hemangiomas has saved many pediatric patients from the adverse effects of topical and systemic corticosteroid therapy. Oral propranolol is safe, however it is advisable to be used under a pediatrician's care. Interventional radiology has stood tall in managing arteriovenous malformations. The advances in catheters, coils and other substances for embolization has improved outcomes with reduced morbidity. However cavernous hemangiomas are best excised.

Applications of Sclerotherapy have expanded, so have the agents available. Cystic lesions including congenital microphthalmia with cyst, macrocystic lymphangiomas, dermoids with fluid content, orbital arachnoid cysts Sodium tetradecyl sulphate foam is most commonly used, others being bleomycin, hypertonic saline, ethanolamine oleate, picibanil etc. The impact of retaining the sclerosed cyst is improved orbital growth, resulting in better facial symmetry and ultimate cosmetic rehabilitation.

Thyroid Associated Ophthalmopathy is continuously evolving in terms of concepts of pathophysiology and therapy. The role of IGF-1R pathway in modifying the extracellular matrix points towards its role in laying

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collagen and other components like fibronectin, laminins, vitronectins. Teprotumumab, a human monoclonal IGF-1R inhibitor, has shown clinical benefit in moderate and severe thyroid orbitopathy. Early identification of ocular surface derangement in mild and moderate disease helps prevent complications. Severe sight threatening disease responds well to pulse intravenous corticosteroid therapy

Chemotherapeutic advances have affected the management of malignant tumor in the orbit and adnexal region in a significant manner. Mutilating surgeries and rates of recurrences have been reduced by multimodal therapies where various combinations of drugs, radiation and surgery lead to a desirable outcome. Adenoid cystic carcinoma, rhabdomyosarcoma, sebaceous gland carcinoma of eyelids are some examples of such impact. Eye salvage in Ocular surface squamous carcinoma has become possible because of the available chemotherapy. Mitomycin C, 5-fluorouracil, interferon alpha 2b, cidofovir are the favoured options. However they do carry along with them their share of side-effects. FDA approved Vismodegib and sonidegib (anti-SMO therapies) for treatment of Basal Cell Carcinoma with local orbital invasion. Intra arterial chemotherapy along with advances in radiation therapy has revolutionised the outcomes of retinoblastoma treatment.

In situations where surgery is the only resort and the tumors are difficult to reach, Gamma knife and intraoperative navigation aid help reduce surgery related

complications. Neural tumors in the posterior orbit and those reaching beyond the orbital boundary can be thus tackled.

COVID 19 associated Rhino orbital cerebral mucormycosis caused by saprophytic fungi of class Phycomycetes (order Mucorales) emerged as a tsunami in the recent past. Mucor, Rhizopus and absidia were the commonest offenders. Vast research took place and identified the possible underlying mechanisms. Pancreatic insufficiency leading to a hyperglycemic state, mucosal humoral derangement, hypercoagulable state and hyperferritinemia were understood as predisposing conditions (acidic pH and glucose rich medium)

Liposomal Amphotericin B remained the sheet anchor of therapy, supported by region specific therapy. For the orbit, encouraging evidence emerged in favour of trans cutaneous retrobulbar Amphotericin B injections. It provided significant arrest of local disease. Need for exenteration got minimised and extensive debridement was sufficient in most cases.

Conflict of Interest

The author declare that there are no conflicts of interest in this paper.

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