Summary and conclusion

The trigeminal nerve is the largest of the cranial nerves, carrying motor supply to the muscles of mastication and transmits sensory information from the face, oral, nasal cavities and most of the scalp.

the trigeminal nerve has a protracted course from its origin within the brainstem nuclei coursing thought the pre-pontine cistern, mickel cave ending in its trifurcation into ophthalamic, maxillary and mandibular branches and their supplying areas of the face and muscles of mastication, so The pathological process affecting the trigeminal nerve may be most usefully considered according to the anatomical part of the nerve affected divided into brainstem nuclei, pre-pontine cisterns, meckel cave and cavernous sinus and finally its terminal branches.

In the past, clinical symptoms and signs were considered an accurate means of localizing lesions along this complex course, with the advent of CT and more recently MR imaging which becomes the cornerstone in cranial nerve imaging due to its high soft tissue resolutions and multiplanar capabilities enables the radiologist to better evaluate the entire intra and extra-cranial course of the trigeminal nerve and so better detect the different

pathologic processes afflicting the nerve as is inflammatory/infectious conditions, perineural spread of malignancies and in very small intrinsic tumors.

Lesions involving the trigeminal nuclei in brainstem are brainstem infarct, AVM, metastasis, multiple sclerosis and rhombencephalitis.

Lesions involving the trigeminal pre-pontine cisterns are neurovascular compression by aneurysms and AVM, acoustic schwannoma, meningioma, epidermoid cysts, lipoma, and neuritis.

Lesions involving the meckel cave and cavernous sinus are carotid aneurysm, pituitary adenoma, skull base neoplasms, perineural spread of tumor and tolosa-hunt syndrome.

Lesions involving the extra-cranial branches are neurogenic tumors, metastasis, perineural spread of tumor, sinusitis and masticator space abscesses and tumors.