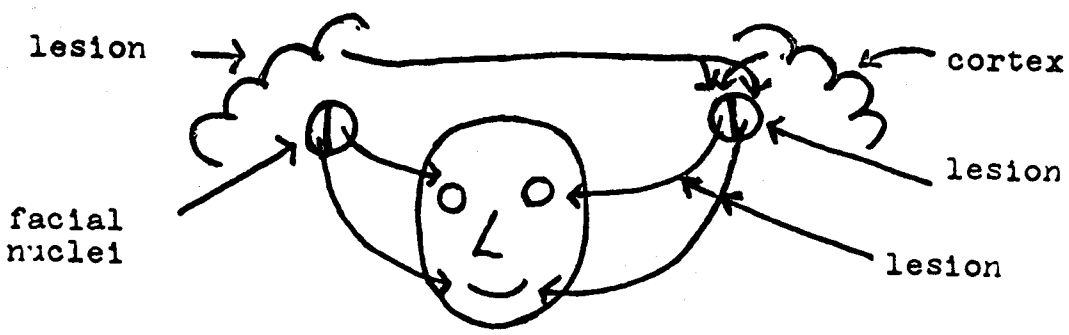


The major portion of the VII or facial nerve is S.V.E. concerned with the muscles of facial expression. The motor neurons have their cells of origin in a nucleus just in front of nucleus ambiguus, the facial motor nucleus. There is a separation within the nucleus of different regions concerned with different muscles. In the lateral portion, we have the motor neurons which control the lower portion of the face including the buccinator. There is an intermediate portion of the nucleus which controls the upper muscles including the orbicularis oculi and the muscles of the forehead. There is a third part that controls several muscles such as the platysma, the strapedius, the posterior belly of the digastric and the stylohyoid.

In the case of the facial nerve, one has a very different situation as regards a lower motor neuron lesion and an upper motor neuron lesion. The area of the nucleus that controls the lower portion of the face receives its cortical control from the contralateral motor cortex. But the portion of the facial nucleus that controls the upper portion of the face receives input from



both hemispheres; so there is a bilateral input from the cerebral cortex. A lesion in the facial nucleus would result in a lower motor neuron lesion, a complete paralysis of that facial musculature on one side. However, a lesion in the cortex is a more complex situation. The portion of the nucleus that controls the lower portion of the face would be deprived of all its input from the (contralateral) cortex. But there is an ipsilateral connection to the part of the nucleus controlling the upper part of the face. So, only the lower portion of the face would show a paralysis. The upper part of the face would still be under the influence of the ipsilateral motor cortex.

