Summary

The sense of smell provides people with the valuable input from the chemical environment around them. When this input is decreased or distorted, disability and decreased quality of life are reported. The olfactory nervous system consists of three main stations: the olfactory epithelium, olfactory bulb and olfactory cortex. Olfactory receptor neurons in the olfactory epithelium, transforming chemical stimuli to electric signals, send their axons (olfactory nerves) to the olfactory bulb and make synapses with bulbar projection neurons (mitral cells).

The human sense of smell generally fails in one of three ways. One is an intensity reduction resulting in decreased olfactory sensitivity (hyposmia or anosmia) .The other two are quality changes with a distortion of the perceived odor. One type of distortion occurs when inhaled odorant do not have same " smell" or " odor" as remembered (troposmia, " To twist or turn the sense of smell"). The other type of distortion is the perception of an odor (usually unpleasant), when there is no odor in the environment (phantosmia hallucination). These distortions are usually much more disruptive to a person's life than a simple loss, because they are repeatedly being reminded by the problem. In order to reach a proper diagnosis, the clinician should follow the sequence of detailed history taking, a through physical examination (including ENT and neurological assessment) and additional investigations including subjective and objective measures. Treatment of olfactory disorders differs

according to the type of this disorder whether it is olfactory loss or olfactory distortion. Treatment includes both medical and surgical measures. The medical therapy for olfactory loss includes corticosteroids (local or systemic), antihistamines, antileukotrienes, antifungal therapy, saline lavage, antibiotics (e.g., Roxithromycin, minocycline), theophylline, zinc sulphate, vitamin A and caroverine.

Surgical therapy aims at both reduction of nasal obstruction and removal of inflamed mucosa or polyps. This type of surgery is routinely performed endonasally under endoscopic or microscopic control. On the other hand. Medical therapy for olfactory distortion includes watchful waiting, topical nasal saline drops in HDF (' Mecca') position, sedatives, antidepressants, anticonvulsants and antiepileptic drugs and topical cocaine Hcl which can temporarily block most distortions by anesthetizing the ORNs. Surgical therapy for these distortions comprises bifrontal craniotomy to remove the olfactory bulbs or nerves, Steroetaxic amygdalotomy or, in order to avoid craniotomy, excision of the olfactory epithelium followed by temporalis fascia grafting as an endoscopic intranasal procedure for cases with unilateral phantosmia that has been present for more than 2 years and can be eliminated with intranasal cocaine anesthesia of the ipsilateral olfactory mucosa.