

spurs or crests. Two points are worthy of notice here: (1) That the morbid lesion is produced by a process of cartilaginous development. (2) That the chronic catarrh, so frequently following such cases, does not usually occur until long after the date of primary injury. This, of course, refers to cases of minor degree.

Of the severer cases of deformity, traumatism of a direct nature is usually the cause. By a fall or blow upon the nose the cartilago-quadrangularis is fractured or dislocated, forcing it directly into one or other rhinal cavity, and exhibiting, when first discovered, a projecting crest, impinging in many instances upon the corresponding lower turbinated bone, and producing stenosis. In deviations of an idiopathic origin, a frequent cause would be enlargements of the spongy bones, the presence of neoplasms or exostoses, etc., the septum in these cases yielding and projecting into the opposite rhinal cavity. The columnar cartilage, owing to its situation at the very entrance of the nostrils, is sometimes displaced by the habit of pressing the nose to one side in using the handkerchief.

*Symptomatology. Objectively.*—Septal deformity may be recognized in many cases. Sometimes the tip of the nose is directed to one side, while the bones are directed to the other; in others, the whole organ is thrown to one side; while in a third series want of symmetry in the nostrils indicates displacement of the cartilaginous septum or the columnar cartilage.

*Subjectively.*—The symptoms are widely different, according to the degree of stenosis produced. In very many cases, where the deviations are simple and unaccompanied by spine or cristæ, symptoms are entirely absent.

In others of a somewhat severer character, the ear or throat are chiefly complained of, while the nose remains unnoticed. Usually, however, the primary symptom is that of nasal obstruction. Nasal breathing on the side affected becomes impaired, followed by a series of changes in the mucous membrane, which in the end produce chronic naso-pharyngeal catarrh. The symptoms may be divided into two principal groups, the mechanical and the nervous. Within the former may be placed everything occurring directly from the narrowing of the cavity at the point of deviation. Thus, inspiration through the obstructed channel produces rarefaction of the air

immediately behind it, with diminution of atmospheric pressure, followed by congestion and swelling of the mucous membrane and hypertrophy of the turbinates. When the deviation is extreme, particularly when large cristæ are present, the stenosis on the affected side may be complete, compelling the other nostril to do the whole work of respiration. This extra duty not only causes hypertrophic rhinitis, but also mouth breathing, from deficient nasal capacity, with dryness of throat, pharyngitis sicca, as well as all the distressing symptoms of chronic nasal catarrh. More remote symptoms are produced in the lower throat and larynx. When the air is breathed *per vias naturales* over the healthy turbinated tissues, it acquires before reaching the larynx the proper temperature and saturation from the serous discharges from these bodies. When, however, it is deprived of this heat and moisture by mouth breathing, the raw air comes directly in contact with the larynx, producing chronic laryngitis, and in some cases even papilloma. Anosmia and Eustachian disease, with deafness, are also among the ultimate results which not infrequently occur. When the stenosis is near the nostril, a sinking or flapping of the ala is sometimes present during inspiration. This was particularly marked in a patient I had under treatment a few months ago. Epistaxis, according to Bosworth, owes its origin more frequently to deviation of the nasal septum than to anything else. The outstanding prominences of mucous membrane allow hard particles of dust to impinge directly against them, causing erosions of the capillary walls and consequent hemorrhage. The voice is often affected by deviations, becoming thick and nasal in character. Among the nervous symptoms are sneezing, spasmodic irritation of the eyes, pain at the base of the nose, frontal pain, asthma, hay fever, etc.

*Diagnosis.*—This is based entirely upon anterior rhinoscopical examination, and, with the application of cocaine, can be arrived at without difficulty. As Zedziak says, "The time is passed for deviations of the nasal septum ever to be taken for polypi or fibroma." Growths of this nature are always movable, while the septum, whether deviated or not, continues rigid. Although exostoses and enchondromata may likewise be hard, they stand out distinctly from the septum and are thus distinguished from devia-