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The oral-facial-speech problems of the aging: a challenge to the health care professions

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The oral-facial-speech problems of the aging are receiving the attention of the dental profession. These problems involve: (1) the effects of mutilating surgery; (2) injuries that cripple and deform; (3) congenital and acquired deformities, and (4) oral problems of the aged and senile.

All these may affect the major organ of communication—the mouth and associated structures.

In order to understand these problems, it is necessary to face them squarely—unpleasant, distasteful and, in some instances, ghastly as they may be.

Facial deformity is tragic enough in a person who has lived with such a handicap all his life, but it becomes devastating when disease or necessary mutilating surgery or both suddenly transform an individual's face into a hideous condition, making withdrawal from family, friends and society necessary. At the same catastrophe, all means of communication may be lost, compounding the psychic trauma. No single profession nor discipline can cope with such a situation. It requires a team approach involving many professions and disciplines, in a well-oriented,

orderly, long-range treatment plan. Literature is rapidly accumulating on the oral manifestations of the aging process and the dental problems involved in the care of the aged. Researchers have been hard at work for many years on these problems, and much scientific and theoretical knowledge is available. Therefore, it is my purpose to discuss the clinical side of gerodontics.

■ *Effects of Mutilating Surgery*

Surgery for malignant disease may involve any or all of the auxiliary organs of speech: the lips, the tongue, the teeth, the palate and the cheeks. It may involve part or all of the lower jaw, or the major portion of the right or left portion of the upper jaw. Plastic and reconstructive surgery has worked miracles in achieving closure, pleasing cosmetic results and restoration of these regions, but there are many situations in which insufficient tissue remains to provide closure, and inadequate blood supply makes grafting an impossibility. By use of preoperative impressions of the face, models can be made. On these models, the areas of anticipated surgery may be cut away and immediate

plastic replacements developed. Any operative deviations made necessary at surgery can easily be compensated for by the use of self-curing acrylic resins. Patients returning from the operating suite with such tissue replacements are not subjected to additional trauma from the facial expressions of shock by those caring for them or visiting them. When ambulatory, they may mingle immediately with other patients. The tissues surrounding the operative site fare better as a result of the support from the implant and have less tendency to invaginate and form adhesions.

It is known that speech is lost after surgery is performed on the larynx for removal of malignant disease. It can also be lost by extensive surgery on the jaws and associated structures such as the tongue and palate. The Lancaster Cleft Palate Clinic for many years has been making obturators for persons whose soft palate is either missing or short. Into this prosthesis, or into a denture if the patient is wearing one, a small audio emitter has been incorporated which gives speech to the patient whose larynx has been removed. Through this, the patient can communicate his needs, in most instances, immediately on recovery from anesthesia. It has been helpful as well to those unable to master oropharyngeal speech. This phase of rehabilitation is approached simultaneously by (1) the prosthodontist with experience in obturator positioning in the throat, (2) the speech pathologist employing scientific instrumentation for speech measurements, and (3) an electronic engineer utilizing sound x-ray motion picture apparatus to evaluate the residual speech mechanism. Sufficient

emphasis cannot be placed on the need for proper preoperative evaluation and planning, and preparation of immediate prosthesis for patients in imminent need of disfiguring, mutilating, orofacial surgery, as well as surgery involving speech-producing regions.

In the management of malignancies, especially in the aging patient, irradiation may be the choice of treatment rather than surgery. If the zone to be irradiated includes tooth-bearing regions, and the patient has the prospect of long-term survival, all teeth must be removed. At no time after interstitial irradiation involving the tooth-supporting structures can removal of teeth be safe. Although the irradiation may have been done many years previously, fulminating osteonecrosis will result. This complication increases with the age of the patient, and in the aged may arise from any internal or external trauma, or may, indeed, arise spontaneously. Dentures must be constructed carefully to avoid denture trauma. The patient should not be kept edentulous, as an irradiated alveolar process is subjected to trauma from food intake when uncovered by dentures. Again the team approach is essential, and the dentist and irradiation personnel must work in close harmony. Where osteonecrosis takes its toll the replacement technics described will be effective once sequestration is complete and accompanying infection is cleaned up.

■ *Injuries that Cripple and Deform*

Today's highway traffic accidents produce mutilations that equal those of the surgeon's scalpel attacking an extensive malignancy. In the facial regions

where wounds transcend surgical skill, much of what has already been discussed will offer some solution. The aged patient's osseous structures and investing tissues are very deficient in reparative potential, and severe trauma many times results in irreparable loss of soft tissue and bone. Beyond the seventh decade, malunion of fractures is a common complication. The "purse-string" mouth is an undesirable aftermath of trauma involving the lips, and in the aged patient, surgery usually results in disappointment. The prosthodontist can alleviate this unsightly condition by modification and plumping of the dentures. In summation of this phase, management of tissue problems resulting from trauma in the aged patient is essentially the same as for problems resulting from loss of tissue through surgery for malignancies.

■ *Congenital and Acquired Deformities*

As the human tissues age, deformities in the orofacial region that have undergone surgical or prosthetic correction, as well as those that have received no attention whatsoever, must be watched with increasing frequency, especially in the late seventh, eighth and ninth decades. Blood supply diminishes, and nutritional and reparative processes are penalized. In the lower jaw, large nutrient canals may develop as the blood-supplying system struggles to provide adequate nourishment to the region. These canals can become a weak spot in the extremely resorbed lower jaw, and the slightest trauma may cause a fracture. Tissues bordering on previous operative sites must be inspected with regularity, because

diminished blood supply with its attendant sequelae will make its presence known in these zones. All bearing points of prosthetic devices must be policed regularly, as the same conditions are present here. Any irritation must have its causative factor eliminated promptly, lest it become a carcinogenic agent.

■ *Intraoral Problems of the Aged and Senile*

CHEILOSIS—Chronically sore areas in the angles of the mouth usually are associated with riboflavin deficiency, and the nutritionist must join the treatment team. In the aging person the sores may be precipitated by loss of intermaxillary space. This loss may be due to abrasion of teeth, as in the tobacco chewer, faulty masticating habits, and bruxism. These factors may be eliminated by construction of dentures that restore or accent the canine eminence and correct the loss of vertical dimension. If sufficient tooth structure is present, the crowning of abraded teeth and replacement of missing teeth will make the same correction. The increased masticatory efficiency together with nutritional support results in the disappearance of these lesions.

CLOSURE OF INTERMAXILLARY SPACE—Loss of intermaxillary space is due, as stated previously, to loss of teeth, attrition of teeth, resorption of the ridges by dentures uncorrected to compensate for aging changes and resorption. Early signs are deepening lines from the angles of the nose to the corners of the mouth, and from the corners of the mouth to the chin. The effect of this slow loss of vertical dimension involves the temporomandibu-