

**THE FIRST INTERNATIONAL SYMPOSIUM
ON FACIAL PROSTHETICS
ARNHEM, THE NETHERLANDS
APRIL 19-23, 1976^a**

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The First International Symposium and Workshop on Facial Prosthetics was convened by Dr. Arthur H. Bulbulian, Director Emeritus, Mayo Clinic Maxillofacial Prosthetic Center, Rochester, Minnesota, United States, on April 19, 1976, at the expansive Rijnhall in Arnhem, the Netherlands. A post-symposium course on facial prosthetics was held April 26-30 at Okkenbroek, the Netherlands.

Following welcoming messages from the Ministry of Public Health and Environmental Hygiene and several local governmental officials, there were greetings from The World Health Organization, The International Union Against Cancer, and The American Prosthodontic Society. The business of the Symposium commenced with a keynote address by Dr. Eugene F. Murphy, Director of the Veterans Administration Research Center for Prosthetics, New York, United States, describing actions by involved specialists, decisions by interdisciplinary teams, the nature of leadership, and applying analogies between interdisciplinary teamwork and matching of prostheses to living tissue.

In setting the stage for the now broadening range of facial prosthetics, its historical background was recounted by Dr. Victor J. Niiranen, Past President, American Academy of Maxillofacial Prosthetics, U.S.A. The psychosocial aspects of facial disfigurement were detailed by Prof. Dr. A. Chorus, Leiden, the Netherlands, as the critical factor of the communicative-behavior pattern, from which reactions of impression and judgment are evolved. Hence, psychological guidance for facially disfigured indiv-

^aPrepared by Dr. John F. Lontz, and here slightly edited, this summary was presented at the concluding session. It does not attempt to cover all papers, list all coauthors, or give credit to all involved in planning and conducting this first symposium.

iduals emerges as a salient treatment modality. Dr. Juan B. Gonzales, of the Mayo Clinic, discussed planning a total treatment program, with evaluations from psychological, anatomical, physiological, and mechanical standpoints involving several professional disciplines.

Speaking on behalf of his colleagues Drs. Richard J. Holman and James W. Schweiger, Dr. W. Hayman Behringer, of the Maxillofacial Prosthetic Center, Veterans Administration Hospital, Wilmington, Delaware, United States, pointed out that the effectiveness of the initiated and sustained rehabilitation requires a multiphase, long-time program of counseling and psychometric evaluation by which progress and changes must be determined. This means, as Dr. Behringer further recounted, a concerted team approach, enlisting a primary group of specialists and a secondary group of supporting skills, involved as an established, appointed working group.

In this group, as Dr. Branislav Dimitrijevic, Belgrade, Yugoslavia, indicated, particular emphasis has to be accorded to speech therapy, in order to attain social adjustment. Thus, in the goal of patient rehabilitation, for maximum degree of normalization the task now becomes less of a burden on the surgical, prosthodontal, or other specialist service, with the expanded group working together primarily from the central focus of the patient rather than from the foci of many individual specialists' performances.

On the second day, Dr. T. Gibson, a plastic surgeon of Glasgow, Scotland, moderated a session on interdisciplinary teamwork. He also read a paper by Dr. I.A. McGregor. The surgical repair of facial defects, Dr. McGregor pointed out, has in the past decade or so opened up a variety of procedures leaving numerous choices for surgical intervention but with limitations that mean the patient would in certain instances be better served by prosthetic means or by the combination of the two. At this point of the presentations it was becoming clear that the roles of the surgical and the prosthetic task forces are no longer matters of independent choices but rather of mutual involvement in decisions and planning. This cooperation meant, as Colonel Alan C. Roberts of St. Luke's Hospital, Bradford, United Kingdom, indicated, that with the election of a prosthetic procedure, the most appropriate surgical procedure could be selected, directed to the best restructuring of the disfigurement with ancillary prosthesis.

Walter G. Spohn, Palo Alto, California, United States, emphasized the need for strict quality control for both external prostheses and surgical implants. Some of his views on the role of the anaplastologist stimulated considerable discussion. Dr. Behringer reviewed the techniques and materials used for mandibular replacement following trauma or resection and presented cases in which a preference was indicated for use of autogenous cancellous bone in titanium troughs. A round-table conference on implants covered principles and materials.

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Surgical venture extended to large defect of the skull was detailed by Mrs. E. Stoiber, Kantonsspital, Zurich, Switzerland, with a technique using polymethyl methacrylate in which the degree of rigidity is adjusted by the ratio of the monomer/polymer content. Two cases were described in which as much as 30 percent of the cranial area has been reconstructed. Thus large, extensive facial or skull resection and subsequent reconstructions to normal-appearing total imagery have been undertaken with rehabilitative success. These successes promise further innovative approaches in which surgery and prosthesis, internal and external, on an equiptartite basis, play mutually supporting roles. At this point of indicated hope for hapless disfigurements worldwide, Dr. Wladimir Bezroukov, speaking for the World Health Organization, made a plea for the dissemination of available techniques with organization of programs to extend this knowledge to those regions of the world as yet unattended.

The ensuing phase of the Symposium focused on skills of prosthetic structuring aligned specifically to the conversion of materials as a skill and a designated technology. Walter G. Spohn described a technique, included in a film presentation, on preoperative fabrication of subcutaneous and bony implants, emphasizing use of silicone materials. At this point, the presentations and discussion centered on materials development, fabrication, application, retention, and biomechanical involvement. A review of the methods of attachment by P. Javor of Zurich, Switzerland, with a choice of mechanical, insertive, and adhesive means, was discussed, with examples using hinge and clasp systems in an extreme case of a combined mandibular and ocular reconstruction. Dr. H. Weerda, Freiberg, West Germany, described several clamp mechanisms to attain attachment and functional retention for various facial reconstructions using crown bands and anchors. Static and dynamic mobile retention characteristics were reviewed by Dr. George E. Ries, Temple University, United States, with a presentation of a case with nearly one-third loss of facial structure. A unique extension of normalized appearance, with upper eyelid movement synchronous with the normal eye, was presented by Dr. E. Arielly of Heidelberg, West Germany, employing a miniaturized electromechanical device inserted into an orbital implant with photocell and electronics in a spectacle frame.

Next the presentations moved on to reconstruction materials, their merits and limitations in replicating living tissue, and their coloration for cosmetic matching. Maxillofacial materials comprise a wide range of chemical types of polymers and elastomers, as Dr. John F. Lontz, Veterans Administration and Temple University, United States, described. His goal is reproduction of the extensile characteristics of living tissue by chemical modification of polymethyl methacrylate, poly-siloxane (silicone), polyvinyl chloride, and polyurethanes with their innumerable variants, stressing the need for standardization and specifications.

Following a motion picture prepared by Dr. Bulbulian on fabricating and coloring facial prostheses, the discussions then moved on to expositions of the principal materials for prosthetic constructions. The polysiloxane series, both room-temperature and heat-cured types, were discussed by Dr. Louis Fine, Zoller Clinic, Chicago, Illinois, United States, with examples of applications. Colonel Roberts described the use of polymethyl methacrylate in prostheses with the merit of color stability. Dr. Gonzales described a proprietary polyester elastomer form of polyurethane with a series of qualitative properties. The merits of polyvinyl chloride, the fourth member of the current series of prosthetic source materials, were recounted by Mr. B.N. van den Hengel, Huize Okkenbroek, the Netherlands.

Prominent in the presentations and open discussions were the concepts and methods of cosmetic coloring in which pigment selections, and pigment incorporation as intrinsic and extrinsic coloration, depended largely on qualitative judgment. In view of the common problem of color degradation from initial cosmetic matching, Dr. Lontz discussed color measurement and spectral approximation of living tissue. Suggesting use of pigments rather than actinically-labile dyes, he emphasized the need for standardization, and presented actual measurements with the Hunter Color Difference System for specifications and for measuring the degradation encountered with prolonged usage and especially with hygienic maintenance.

From the prosthetists' viewpoint, the discussions seemed to indicate that coloration for tissue matching will, for some time to come, remain highly debatable among proponents of special techniques and choices of pigmentation, for which there were more preferences expressed than alternatives.

Of equal importance to the subject of esthetic coloration was the re-counting, by Dr. D. Haake, Berlin, East Germany, of possible methods for anchoring an external ear prosthesis, listing adhesive, surgical, anatomical, and mechanical as the possible modes; each has respective merits that need to be assessed in choosing the most effective type for an individual patient.

An interlude of personal appearance of living cases, with interviews of their reactions to wearing prostheses, was presented in a highly engaging presentation by Mr. van den Hengel. This clinical series, including closeups on TV monitors, provided a moving evocation of effective rehabilitation with prompt prosthetic application.

In the final interdisciplinary panel session, Dr. P. Dor, Brussels, Belgium, reiterated the need, in meeting the challenge of facial reconstruction, for newly planned surgical ventures that are now evidently feasible although hitherto not generally considered possible. Formalized training and education in facial prosthesis and reconstruction techniques was emphasized by Colonel Roberts as a timely necessity, now that so

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much information on a variety of multidisciplinary procedures and materials is available. Dr. Murphy suggested continued, widened, international exchange of information, by organized effort, on facial prosthetics as a common problem. This should lead to indexed information that would be readily available. At the same time he cautioned against fragmentation in which specialists might tend to focus on unduly segregated anatomic areas of reconstruction. The need for international exchange of information was reiterated by Dr. Indirjat Singh of New Delhi, India.

In response to the question of what can be expected in the field of biomaterials, Prof. Dr. A. Bantjes, Twente University, Enschede, the Netherlands, visualized new polymers that will be structured in segments or blocks offering enhanced biomechanical compatibility with living tissue. In assessing the impact of the specialized and sophisticated procedures disclosed in the course of the Symposium, Dr. Victor Matalon, Texas, United States, suggested the need to establish regional centers, since the many diverse disciplines and skills cannot be supported by small isolated prosthetic units. He stressed the capability to handle total rehabilitation from the status of a secluded case to reasonably adapted return to society.

The presentation and vigorous open discussions at Arnhem offered a comprehensive consideration of, and viewpoints on, alleviating the debilitating effect of facial disfigurement by the assembly and dialogue of participants, including clinical, social, and prosthetic specialists, with all accorded equal prominence in the role of reconstruction to ultimate rehabilitation. Thus as a generalized conclusion, the Symposium opened a view of expanded, combined interdisciplinary involvement, with evidence that the skills, talents, and innovations can be expected to permeate beyond the historical region of Arnhem.