CLEFT LIP WITH ASPLENIA SYNDROME

Cohen (1978) reported 154 syndromes with orofacial clefting and indicated that many new syndromes with orofacial clefting might be identified in the future. I would like to present the first case report of cleft lip and palate associated with asplenia syndrome.

The patient, a one year three month old male with a right sided lip and palate cleft was referred to the Hospital of Tohiku University School of Dentistry for lip repair. Investigation including cardiac catheterization at two months established the diagnoses of asplenia syndrome, with cor-biloculare, common atrioventricular valve, pulmonary stenosis, heterotaxia and absence of the spleen. The mother had suffered from thrombocytopenic purpura in pregnancy from the fourth to the eighth week. During this period the spleen, lip and palate of the fetus are being formed. The malformation of the heart, cor-biloculare, is similar to the condition of the embryonic heart at five weeks. The mother did not receive drugs for the purpura.

Thrombocytopenia is known to result from autoimmunity against platelets as well as by exogenous factors (Harrington, 1971).

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References

COHEN, M. M. JR., Syndromes with Cleft Lip and Palate. *Cleft Palate J., 15:* 306–328, 1978.

HARRINGTON, W. J., Textbook of Medicine, 13ed., Phil., W. B. Saunders, pg. 1599, 1971.

BOOK REVIEWS

Rapid Maxillary Expansion

TIMMS, DONALD J.

Quintessence Publishing Co., Inc., Chicago, 1981. 140 pp. (price not included with book)

The production of this book is of the highest quality. The illustrations are excellent and the printing and glossy paper make this book a pleasure to read.

The text covers 110 pages and is divided into 10 main chapters. The chapter on the historical background of the appliance is well researched and gives an accurate description of the rise and fall of Rapid Maxillary Expansion (RME) in Orthodontics. The chapter on anatomy and the effects of RME is followed by details of the appliance. The biomechanical principles underlying this method of expansion are dealt with superficially, although the clinical management and construction are adequately described.

Probably the most misleading sections to this reviewer are those dealing with the medical aspects of RME. Sweeping statements are made throughout the text concerning the direct relationship between nasal obstruction and general health of the patient. The case reports are anecdotal with no objective evaluation or measurement of nasorespiratory function. On page 18 the scene is set for a theme which recurs throughout the book "Incorrect respiration can be the cause of many deep-seated afflictions, often unsuspected until relief has been obtained by changing from oral to nasal breathing. In certain instances, respiration may be the primary or even the only reason for carrying out RME." The remarkable improvements which followed RME were gleaned from statements made by the patients and recorded in their case notes.

Although there is an extensive and well researched bibliography which is quoted throughout the text, little effort is made to critically evaluate the numerous works. The age of clinical impressions has given way, rightly or wrongly, to the present day obsession with data collection and analytical methodology. Even Aristotle supported the contention that "Science is measurement" and certainly the scientific aspect of RME is lacking in this book.

The chapter on Rapid Maxillary Expansion of Cleft Palates covers 9 pages which includes two case reports. Secondary alveolar bone grafting is poorly overviewed with the somewhat surprising statement that "grafting need not affect the orthodontic treatment plan". Nasal airway modifications are related to dental arch expansion with no reference to the presence or absence of pharyngeal flaps. The rationale for using RME in cleft patients is questionable. If the aim of RME is to split the palatal suture and maintain this expansion while bone fills in the suture, then the indications for RME are not clear. In the complete cleft, there is no suture to split and therefore bone is unlikely to fill-in the suture.

In the final section it is disturbing to read on page 118 that "it has been shown that most buccal crossbites are associated with increased nasal resistance and the tendency to mouth breathing. In the unhappy event of their being antagonistic a decision concerning priority must be taken. There can be no doubt that the respiratory priority is the greater". As an orthodontist, one might question the rationale for changing or even destroying the posterior occlusion in an attempt to improve nasal respiration. Although this book provides a current overview of a method of expansion, the clinician should not expect to find new information in either the technique or its application. As a scientific contribution it lacks objectivity and tends to add to the already existing confusion concerning nasorespiratory function.

The technique of Rapid Maxillary Expansion should be a part of every orthodontist's education and expertise. An entire volume devoted to an antique appliance is curious but in some perverse way may confer immortality to this work. This book is not an essential for every orthodontist's bookshelf, but certainly adds an interesting and controversial dimension for the critical reader.

Katherine Vig, B.D.S.

Etiology of Cleft Lip and Cleft Palate

MELNICK, MICHAEL, BIXLER, DAVID, and SHIELDS, EDWARD D., (eds.)

Alan R. Liss, Inc., New York, 1981. xiv + 556pp. $40.00

This volume is the 46th in a series entitled "Progress in Clinical and Biological Research" and is the third publication by the Society of Craniofacial Genetics. The volume consists of the procedings of a workshop held at Airlie House, Virginia, and sponsored by the National Institute of Dental Research and the Society of Craniofacial Genetics. The participants came from diverse backgrounds both geographically (Canada, Europe, Japan and the U.S.A.) and professionally (animal genetics,

human genetics, immunogenetics, biochemistry, developmental biology, mathematical and population genetics, statistics, epidemiology and clinical practice). The intention of the meeting was to review the state of current knowledge about the etiology of facial clefting, point out deficiencies, and suggest new research directions. This goal seems to have been achieved.

The book is divided into four main sections, each containing presented papers, critiques and transcripts of the subsequent general discussions. The first section deals with "Animal Studies of Cleft Lip and Cleft Palate" and contains seven papers of which those by F. C. Fraser and D. M. Juriloff are particularly well organized and informative with excellent reviews of relevant earlier work. The second section on "Human Population Studies" contains four papers dealing with studies of the cleft lip and cleft palate populations of Denmark, East Europe, Japan and the U.S.A. respectively, of which the article by A. Czeizel is particularly noteworthy for its clarity. The third section contains three papers on "Mathematical Models Applied to the Etiology of Human Clefting". All three papers present outlines of their models' performance and offer groundwork on which attempts to provide suitable predictive models can be based. The fourth section covers "Genetic and Phenotypic Markers of Clefting" and contains three short papers. The first two provide concise information on the major histocompatability complex and the third deals with sensory integrative dysfunction. The last chapter of the book contains the final recommendations from three committees formed to evaluate the material presented at the meeting and to propose recommendations for future research objectives. These reports are concise and well presented, and overlap on some points indicating a reassuring consensus from the many different disciplines represented at the meeting.

As in most collections, the quality and clarity of the papers is somewhat unequal, but in general they are interesting and clearly presented. Overall, the procedings give a thorough account of the four major topics discussed at the workshop, and each individual paper provides an excellent reference source for those interested in further reading. The editors are to be congratulated on the organization of the book and on the lucid presentation of the discussions after each section. The many critique papers are extremely helpful in presenting additional material, contradictory points of view, or possible misinterpretations of the data etc. and will be of particular value to those unfamiliar with all the literature in any area. Since at least two critiques are generally presented in each section, the reader feels more confident that different schools of thought may have been represented. It is therefore disappointing that five of the papers in the first section and two in the fourth were not subjected to such critiques. It is reassuring that at least two authors (D. M. Juriloff and K. S. Brown) take different approaches and yet reach similar conclusions. However, as might be expected, some papers contain conflicting remarks. Such contradictions are often raised in the general discussion and some clarification may emerge. Therefore, the presentation of such opposing points of view is beneficial to the reader and an asset to the book as a whole. Some authors mainly present an account of their own work which presumes an audience with a previously developed and specialized background, but others offer clear historical or background information in their presentation, making it possible for someone with a minimal knowledge of the area to digest the salient points. However, this is by no means a textbook for those uninitiated in the study of at least one of the four major topics. It is a specialized book dealing largely with the areas of genetics, mathematics, teratology and epidemiology, and is of less interest to those who are only concerned with the clinical aspects of cleft lip and cleft palate.

In summary, this volume contains valuable accounts of four major areas in the etiology of cleft lip and cleft palate and will be an excellent summary and reference source for all those interested in the genetic, epidemiological, teratological, and mathematical aspects of the problem. While the goal of the workshop seems to have been achieved and the participants contribute expertise from a wide variety of disciplines, the topics discussed are of interest to a more limited subsection of the overall number of disciplines involved with facial clefting.

Janette B. Henderson, Ph.D.

Central Nervous System and Craniofacial Malformations.
Vol. 7 in Advances in the Study of Birth Defects.
T. V. N. Persaud (Ed.)
Alan R. Liss, Inc., *New York, 1982. 181 pp.* $32.00.

Development of the human body is so wondrous and yet so common that it has compelled man's attention and aroused his curiosity from the earliest of times. Without doubt, development of the nervous system has been to many a central theme through the ages of scientific inquiry. By the beginning of the century, increasingly skillful experimentation in lower animal forms began to accelerate

the slow advance in our understanding of the normal and abnormal nervous system. In more recent years there has been more rapid progress in related disciplines from cell biology to epidemiology—progress that now calls for a bridging between the experiments of the laboratory and the experiments of nature. With the onset of newer techniques coupled with a new breed of laboratory and clinical investigators, many old and seemingly intractable problems of normal and abnormal human development are taking on a fresh appeal. Rapid advances are surely imminent.

This volume featuring the central nervous system is the latest in an excellent series called "Advances In The Study of Birth Defects" conceived to provide comprehensive and up-to-date information for clinicians concerned with healthy children and for researchers addressing the causes and recognition of birth defects.

Turning our attention now to this volume "Central Nervous System and Craniofacial Malformations, several general comments should be made before going any further. This hardback volume, with one or two exceptions, is well produced. (Yet, it is amazing to see just how much it costs to market a book of 181 pages.) Readers should find that the chapters read clearly; yet the flow or continuity between chapters seems weak at times relative to the central theme of the volume—the central nervous system. While each of the eight chapters has a usually current bibliography, those of us who expect complete citations, including full pagination, will once again see where the completeness of citation formats seen in our leading scientific journals succumbs to the cost-effective policies of commercial publishing companies. For those of my colleagues who routinely draw upon text and journal illustrative materials for seminar and lecture slides (... giving full acknowledgements, of course), the quality of the half-tones and photographs in this volume should not help you a great deal.

Now for content. The volume deals with normal and abnormal development of the central nervous system with a "well-masked" tie with craniofacial malformations, even though state-of-the-art knowledge shows well the need to link these body areas in our thinking. Chapter 1 is an excellent descriptive approach to the incidence and morphology of nervous system defects seen in a series of human abortuses of differing ages. Epidemiologic patterns on the occurrence of anencephaly are well addressed in Chapter 2 which should be *must* reading for those who wish to learn or refresh knowledge of what variables have an impact on incidence figures. Chapter 3 is one of the most thorough coverages of craniofacial development in anencephaly. The combined approaches of histology, radiology and cephalometry make this a most original chapter. For some reason, undoubtedly good, Chapter 4 on cleft lip and/or palate is included and consists of a bland literature review taking up sixteen pages of text. After the side-trip of Chapter 4, the effects of abnormal central nervous system on mid-facial features are summarized in such a way as to make this chapter appealing to syndromologists among us. Now broadly defining central nervous system, Chapters 6 and 7 provide good reviews of sense organ abnormalities with excellent attention given to teratogens highly implicated in abnormal eye and ear development. It is refreshing to see Chapter 7 emphasize the team-approach in management. The question of "Where do we go from here?" is addressed in Chapter 8 on the prevention and prenatal diagnosis of neural tube defects.

Collectively, this volume offers reasonable information and some scholarly stimulation to those interested in major problems and concepts in understanding the nervous system. Even at its price, this volume should not be overlooked by those in the Cleft Palate Journal reading audiences.

Alphonse R. Burdi, Ph.D.

Reproductive Pasts, Reproductive Futures: Genetic Counseling and Its Effectiveness

SORENSON, JAMES R., SWAZEY, JUDITH P. and SCOTCH, NORMAN A.
Alan R. Liss, Inc., New York, 1981. 213 pp. $32.00

The March of Dimes Birth Defects Foundation continues to support and encourage thorough, high quality research, as evidenced in this monograph, which is Volume XVII, Number 4, of the Birth Defects: Original Article Series. The authors of this volume report many of the results of a prospective longitudinal study designed to assess the effectiveness of genetic counseling in terms of clients' needs, client education, and their subsequent reproductive intentions. This study is uniquely valuable in that it provides feedback from the clients to the genetic counselors as a group about their services and their effectiveness as counselors. Associated with this feedback are implications and suggestions about how services and effectiveness can be improved.

The authors have chosen to use the word "client" for those persons who present at genetics clinics seeking counseling. The choice of this word is pleasing: it emphasizes both the humaness of individuals seeking counseling as well as their dependence on counselors for understandable information and help in resolving their concerns. The word "client" may well supercede terms such as

"patient," "counselee," "consultand," and "proband" in describing those persons who seek help in a genetics clinic setting.

The book is organized into seven chapters, each of which succinctly addresses its particular topic and is clearly related to material in preceding chapters. The first three chapters are devoted to descriptive background information, which is essential for appreciating the results of the study described in the next three chapters. Included in the first chapter is F. Clarke Fraser's complete definition of genetic counseling and a brief history of genetic counseling. The goals of the study are clearly described: the authors expect to gain an appreciation of the effectivenss of genetic counseling by assessing the knowledge and understanding of clients both before and after counseling, and from the viewpoints of both the counselors and the clients themselves. The second chapter describes how the study was designed and implemented and gives a detailed breakdown of clinic, client, and counselor participation rates (47 clinics, 1369 clients, and 205 counselors participated in the study). Special methodologic considerations such as instrument effects and representativeness of the study population are taken into account. The third chapter describes the clinics and participants in detail. Clinics are characterized by their staffing patterns, the types of services they provide, and how the services are organized. Counselors are considered in terms of their education, areas of specialization, amount of formal training in genetics and counseling, amount of time spent counseling, and what they consider to be the objectives of counseling. Finally, the clients are described according to their sociodemographic characteristics (marital status, age, education, income, and religion), reproductive history, and the medical concerns that brought them to counseling. Indeed, the clinics and participants are carefully examined from just about every conceivable angle.

Chapters 4, 5, and 6 are devoted to the results of the study, which indicate how effective genetic counseling is. Attention is directed toward ascertaining exactly what the clients get out of genetic counseling. The first issue addressed is whether the clients were able to discuss their own questions and concerns as *they* perceived them; the topics for discussion were broken down into 10 genetic-medical and 5 sociomedical areas of concern. Generally, clients report greater success in discussing their genetic-medical questions and greater satisfaction overall in longer, as opposed to shorter, counseling sessions. At the time of the 6-month follow-up, most clients are satisfied with the counseling they received, but some 30 percent were ambivalent, indicating a need for more attention to the concerns of the clients. The second group of results describes the knowledge and education of clients specifically with regard to their understanding of a diagnosis and risks, before, right after, and 6 months after their counseling. A significant gap was noted between present reality of client understanding and what would be preferable in client education, and it was attributed to lack of skill among the counselors in transmitting information effectively. Further, the effects of clients' attitudes and attitudinal changes are carefully delineated. Finally, the effectiveness of counseling in terms of subsequent reproductive plans is considered in relation to interpersonal concerns and practical medical and social problems. Counselors are urged to discuss reproductive alternatives in more depth.

The final chapter of the book is an excellent summary of the data described in preceding chapters. Concise recommendations are made to foster more effective counseling in the future. Following this excellent chapter are three appendices in which all the questionnaires used in the study are reproduced.

With the exception of a few errors in grammar and occasional spots of awkward syntax, this is an especially well written book. The authors write concisely and logically, with introductory paragraphs that indicate exactly what the reader can expect and summaries at the end of each section and chapter that pull together all information into neat packages. Almost without exception the tables and graphs (total of 61) are simple and clear.

There may, however, be a major underlying problem in the design of this study, noted only because this reviewer ironically participated in administering the questionnaires at one of the clinics included in the study. Clients at this clinic often have very limited educational backgrounds, and this reviewer questions whether many of them could read or answer the questionnaires with comprehension. Further, the persons who responded to the counselor questionnaires were predominantly residents in pediatrics who had little or no prior experience in genetic counseling and who were overtly exasperated at being asked to answer the questionnaires, which they did with noticeable haste. Since the authors of the study mention no method of double-checking the reliability of the respondents, this reviewer questions the fundamental reliability of the data on which so many conclusions are based.

Aside from the one drawback mentioned above, this is a refreshingly well written book that addresses a vital question in genetic counseling, namely the importance of *clients'* needs, perceptions, and reactions to the counseling they receive. It is certainly an essential addition to the library used by anyone who participates in genetic counseling.

Mary Z. Pelias, Ph.D.

ABSTRACTS

BUMSTED, R. M., A new method for achieving complete two-layer closure of a massive palatal cleft, *Arch. Otolaryng., 108:* 147–150, 1981.

Three of four patients, aged 7 to 29 years, achieved complete closure of a wide palatal defect, defined as a case in which the width of the bony palatal defect is greater than the combined width of the remaining bony palatal shelves. The fourth case had a 5-6 mm oral-nasal fistula post operatively. The author's technique involves creation of flaps from the oral and nasal surfaces of the palate and a wide, superior-based posterior pharyngeal palatal flap. To secure the posterior flap, small holes are drilled into the anterolateral palatal bony plates. Successful cases obtained velopharyngeal competence by manometry and speech evaluation. Indications for use of this procedure are limited to only massive palate defects in which the patient cannot use or refuses to use a prosthetic appliance. (Gregg)

DIEWART, V. M., and PRATT, R. M., Cortisone-induced cleft palate in A/J mice: Failure of palatal shelf contact, *Teratol., 24:* 149–162, 1981.

In an attempt to resolve some conflicting conclusions concerning the mechanism of teratogenicity in cortisone-induced cleft palate, this study was designed to determine whether the palatal shelves of cleft palate A/J mice make contact upon elevation to the horizontal position. Frozen sections of fetal heads which accurately retain embryonic tissue dimensions were studied after treatment with cortisone acetate at daily intervals between 11 and 14 days gestation. The sections were subjected to morphometric analysis to determine the extent of shelf contact in experimental and control palates. Cortisone treatment delayed shelf contact by approximately 12 hours and the treated fetuses had significantly smaller vertical dimensions in the anterior oronasal cavity and significantly smaller palatal shelves. The delay in shelf orientation is believed to be responsible for the severely reduced extent of contact between the palatal shelves of the treated fetuses. Drawing on evidence from investigations with other drugs and by other authors, Diewart and Pratt have concluded that failure of contact between the palatal shelves is the major factor in contributing to cleft palate induced by cortisone treatment in A/J mice. (Overman)

INOUE, K., Mechanical contraction property of the levator veli palatini muscle, *J. Osaka Univ. Dent. Soc., 26:* 48–62, 1981.

The purpose of the study was to clarify the mechanical contractile properties of the levator veli palatini muscle in dogs. The muscle with blood vessels was dissected from the surrounding structures through an approach from the submandibular region, was divided at the midpalate and the edges of the muscle bundles were sutured to a transducer. The muscle was stimulated directly with platinum wire electrodes and the records of the muscle contraction variables were obtained electronically. Forty-five dogs were studied. Many details of contraction times, relaxation times, and other findings are presented. (Machida)

KATSUKI, T., GOTO, M., KAWANO, Y., TASHIRO, H., and KURATA, F., Numerization of symmetry of the nose using an analysis of moiré-photographs of the face, *J. Jap. Cleft Palate Assn., 5:* 145–153, 1980.

In order to express the symmetry of the nose in an objective way, the authors numerized the symmetry by using a moiré topography by Fujinon FM 3012 moiré camera, which provides a simple, one-step method for mapping the contour on a single frontal photograph. Moiré strives were processed by a co-ordinated measuring equipment, Gradicon, and the results were calculated as four indices; symmetry index, total symmetry index, revised symmetry index, and total revised symmetry index. The indices of twenty-six normal individuals were calculated as the control. Symmetry of the nose in twenty cleft lip patients was evaluated by the four indices and was correlated with the subjective evaluation of thirty-three examiners. The regression line and correlation coefficient clearly demonstrates the usefulness of these indices. (Machida)

LORENTE, C. A., TASSINARI, M. S., AND KEITH, D. A., The effects of phenytoin on rat development: An animal model system for Fetal Hydantoin Syndrome, *Teratol., 24:* 169–180, 1981.

The authors describe an animal model system which has reproduced some of the features of Fetal Hydantoin Syndrome as it appears in humans following phenytoin therapy for seizure disorders during pregnancy. Rats received single or multiple doses of phenytoin ranging from 700 to 1000 mg/kg and fetuses were recovered and examined at 17.5 days. Experimental fetuses showed growth retardation, significant decrease in weight, and defects of the craniofacial region. The defects included delayed fusion of the palatal shelves, lack of bilateral symmetry of palatal rugae, and a highly arched palatal vault accompanied by a decrease in snout length. Skeletal examination revealed abnor-

malities of the cranial base and spine and abnormally contoured facial bones. There was a reduction in total bone length in animals exposed to phenytoin, including a significant shortening of the craniofacial skeleton. Possible mechanisms of phenytoin teratogenesis and the use of this experimental system as a model for investigating the Fetal Hydantoin Syndrome are discussed. (Overman)

MORRIS, H. L., KRUEGER, L. J., and BUMSTED, R. M., Indications of congenital palatal incompetence before diagnosis, *An. Otol., Rhinol., Laryng., 91:* 115–118, 1982.

Congenital palatal incompetence (CPI) frequently appears post-adenoidectomy because the compensating adenoid pad is eliminated. It is advantageous that this problem be diagnosed before surgery. Based upon a series of 49 patients with CPI, upon whom data were available for 28, the authors found that early disorder in speech production, especially nasalization, is a useful predictor of CPI. Methods for screening children prior to adenoidectomy for possible CPI are recommended. (Gregg)

OKAZAKI, K., KATO, M., SUZUKI, N., and ABE, M., Speech therapy of the palatalized articulation by use of a dynamic palatograph, *J. Jap. Cleft Palate Assn., 5:* 154–161, 1980.

The effect of a dynamic palatograph in speech therapy of palatalized articulation was studied in five postoperative cleft palate patients of from 5 to 19 years of age, each with good velopharyngeal closure. The dynamic palatograph could electronically reveal a distinctive tongue-palate contact of the palatalized articulation, allowing the patients to recognize and correct their faulty articulations and enabling the speech therapist to check the shape of the palate. (Machida)

ROSENBERG, L., MITCHELL, A. A., SHAPIRO, S., and SLONE, D., Selected birth defects in relation to caffeine-containing beverages, *J. Am. Med. Assn., 247:* 1429–1432, 1982.

Six selected congenital defects which occurred in 2,330 malformed infants were correlated with maternal ingestion of caffeine containing beverages during pregnancy. Defects studied included 380 inguinal hernias, 299 lip ± palate cleft, 277 cardiac defects, 194 pyloric stenoses, 120 isolated cleft palates, and 101 neural tube fusion defects. These were compared with 712 other malformed infants who served as controls. The authors conclude that caffeine is not a major teratogen insofar as the six congenital defects studied are concerned. (Gregg)

SUZUKI, N., MICHI, K., TAKAHASHI, M., KATAYOSE, K., YAMASHITA, Y., and URNO, T., Study of the articulatory movement of the cleft palate subjects by use of dynamic palatograph; an attempt to classify the palatogram pattern, *J. Jap. Cleft Palate Assn., 5:* 122–129, 1980.

Palato-lingual contacts were observed by dynamic palatograph, an electronic device with an artificial palate and numerous electrodes to record continuously changing palato-lingual contacts as a function of time. The palatogram patterns obtained from twenty operated cleft palate subjects were classified to establish more objective procedures in evaluating articulation. The classified items were as follows: 1) continuity of contacts; open type (S and O), closed type (T and Max), 2) position of contacts; frontal (f), backward (b), 3) area of contacts; peripheral, broad, 4) symmetry of contacts; symmetric, asymmetric ('), and 5) position of opening; medial, lateral ("). Studied were production of Japanese consonants of /s. dz, ts, S, dS, tS, t, d, n, and r/ which were produced by the contact of the tongue with the alveolus or the hard palate. The palatogram patterns at maximum contact were divided into four groups and twenty subgroups combining the items. Compared with the normal, characteristic patterns were observed in the following types; 1) the contact positions were deviated to backward in Sb, Sb', Tb, and Tb' types, 2) in Max type the whole palate was closed with the tongue, and 3) in O type palato-lingual contact was not recognized. Next, the manner of articulation patterns, from the time of the maximum contact to the consonant productions, were classified into four groups; 1) continuous release, 2) closure to release, 3) continuous closure, and 4) no contact. The latter two classes were peculiar to the cleft palate group. (Machida)

ANNOUNCEMENTS

CALL FOR PAPERS–40th Annual ACPA Meetings. The ACPA Program Committee is soliciting scientific papers, exhibits, video tapes, and films dealing with all aspects of craniofacial malformations for the 40th Annual Meeting, American Cleft Palate Association, Indianapolis, Indiana, May 4–7, 1983. Official application forms may be obtained from ACPA National Office, 331 Salk Hall, University of Pittsburgh, Pittsburgh, PA 15261. (412) 681-9620. Deadline for submission of abstracts is October 15th, 1982. Acceptances will be mailed in January, 1983.

Sally Peterson-Falzone, Ph.D.
Program Chairman

Fifth Annual Workshop on Surgical Techniques in Cleft Lip and Palate November 30–December 4, 1982 at the Grand Hyatt Hotel, New York, New York under the sponsorship of Manhattan Eye, Ear and Throat Hospital and the Institute of Reconstructive Plastic Surgery at New York University Medical Center.

Director: V. Michael Hogan, M.D., New York, N.Y.
Co-Directors: Kenneth E. Salyer, M.D., Dallas, Texas
Janusz Bardach, M.D., Iowa City, Iowa
Guest Co-Director: Fernando Ortiz-Monasterio, M.D., Mexico City, Mexico

This workshop emphasizes current surgical techniques in the repair of cleft lip and palate, cleft lip nasal deformities, surgery for velopharyngeal incompetence, and the treatment of maxillofacial defects associated with cleft lip and palate. The fundamentals of cleft lip and palate embryology, anatomy, and genetics will also be discussed.

AMA-CME Credits, Category 1: Fee $600, Residents $300: Enrollment limited.

For further information contact: Nancy Abbate, R.N., c/o V. Michael Hogan, M.D., 799 Park Avenue, New York, New York 10021, (212) 737-8300

Sixth European Congress on Maxillo-Facial Surgery will be held in Hamburg, Germany on September 13–18, 1982. The program will include topics on plastic and reconstructive maxillofacial surgery, late results and experimental surgery. Papers, films, and poster sessions are scheduled. Inquiries to Professor Dr. Dr. G. Pfeifer, Hamburg Messe und Kongress G.m.b.H., Congress-Organisation (E.A.M.F.S. 1982), Postfach 30 23 60, D-2000 Hamburg 36, Deutschland.

Hawaii–Pacific Cleft Symposium. On February 14–17, 1983, the Hawaii Speech-Language-Hearing Association and the American Cleft Palate Educational Foundation will cosponsor, the "First Hawaii-Pacific Cleft Symposium" in Honolulu, Hawaii. The multidisciplinary program will include presentations on the diagnostic and treatment approaches for the cleft, craniofacial, and neurogenic patient. There will be lectures by invited speakers, short courses, scientific papers, and a videotape forum. This will be a Pan-Pacific Conference with participants expected from the Pacific Basin, the Far East and the mainland United States. The Symposium will be held at the Prince Kuhio Hotel in Waikiki, Hawaii, and special travel packages will be offered by the symposium travel coordinator GTU, Inc. of Hawaii. A call for papers will be issued approximately nine months before the Symposium. More details on the program and invited guest faculty will appear in the next issue. For further information on the program or travel arrangements, direct enquiries to GTU, Inc., P. O. Box 2198, Honolulu, Hawaii 96805.

One-Day Symposium. The Boys Town Institute for Communication Disorders in Children is planning a one-day symposium for the Spring of 1983 on the topic "Velopharyngeal Management for Individuals with Dysarthria". We wish to examine the effectiveness of various treatments for neurogenic, velopharyngeal incompetence; including surgical prosthetic, and behavioral procedures. We would like to identify via a questionnaire the persons with experience for a full coverage of the topic. If you or someone you know are interested in presenting, attending, or both, please write to: Ronald Netsell, Boys Town Institute, 555 N. 30th St., Omaha, NE 68131.

A REPRINT OF THE ABSTRACTS FROM THE PROGRAM OF THE AMERICAN CLEFT PALATE ASSOCIATION

39th Annual Meeting
Denver, Colorado, April 21–24, 1982

TEACHING SESSION

GREMINGER, R.: CLEFT LIP NOSE—NUTS, BOLTS AND NUANCES

This session will serve as a forum for the discussion of alternative means of management of the cleft lip nose at various states of development (unilateral and bilateral). Points covered will include: Primary Nasal Reconstruction (what, when, how much); management of the "good but not great" primary result; the "bad" nose at six-to-seven years of age; the Bilateral Nose (techniques for management of the tip, flaring alar bases, and nostril sil); and late reconstruction.

HANDLER, S.: AIRWAY PROBLEMS IN PATIENTS WITH FACIAL ANOMALIES

The structure of the upper airway is often severely affected by congenital anomalies of the face and cranial base. These structional changes can have significant effect upon the child's daily activities and must be taken into account when considering any operative intervention. The potential for acute airway obstruction exists both intraoperatively and postoperatively. The members of the Craniofacial Team should be aware of these problems in order to minimize the possibility of their occurrence and must be prepared to act promptly and efficiently to remedy them if they do occur.

HOLVE, L.: PEDIATRIC CONCERNS FOR PATIENTS WITH CLEFTS

The pediatrician, acting as both a primary physician as well as consultant to the team is often the best suited individual to initiate ongoing comprehensive care. His stability and expertise, as well as prudent guidance, prepares the family to accept the three "c's" (care, communication, and coordination) necessary for optimal long-term care and management.

LONG, R.: APPLICATION OF FACIAL GROWTH CONCEPTS TO CLEFT PALATE TREATMENT

This course will review and summarize clinical data on cleft palate dento-facial growth. The findings will be interpreted in light of current concepts of form/function interactions in the cranio-facial complex. Various surgical and orthodontic procedures can be viewed as modifiers of function in cleft palate treatment and their subsequent effects on the skeleto-dental structures need to be better understood for successful treatment. Naso-respiratory function and mandibular growth control are topics currently generating much controversy. The basic science and clinical findings surrounding these controversies will be addressed.

MASON, R.: COORDINATED ORTHODONTIC AND SURGICAL TREATMENT OF THE ADOLESCENT AND ADULT CLEFT PATIENT

Consideration will be given to the esthetic and functional needs of the adolescent and adult cleft patient that require coordination between orthodontist and surgeon. Examination findings and treatment options ant procedures will be presented for the patient with a skeletal dysplasia.

MAZAHERI, M.: PROSTHETICS FOR PATIENTS WITH CLEFTS

This presentation will Coutline the indications and contraindications for prosthetic management of patients with operated and unoperated clefts of the palate and velopharyngeal incompetency. The techniques for construction of various prostheses, including prostheses for stimulation of the velopharynx, will be presented.

McMILLAN, S.: PSYCHOLOGICAL ASPECTS OF CLEFTING

This course will cover the psychological problems that many children with all types of facial clefts experience, how to evaluate these problems if no psychologist is available, and what factors constitute a need for referral for additional evaluation and therapeutic intervention. Family dynamics as they relate to compliance with medical and surgical management will also be discussed. The special needs and problems of families with multiple generations of facial clefting will be highlighted.

MUNRO, I.: ORTHOGNATHIC SURGERY FOR SECONDARY PROBLEMS IN CLEFTS

Repair cleft lips and palates may have underdevelopment of the maxilla both in a vertical and anetroposterior direction. The malocclusion and facial deformity becomes most noticeable after the age of 12. When there is discrepancy of basal bone relationships, orthodontics should be used only to align teeth in relationship to basal bone and then orthognathic surgery should be used on the completion of growth–about the age of 15 for girls and 16 for boys–to correct with basal bone relationships. In most cases, this entails a Le Fort 1 maxillary advancement, often necessitating moving the two halves of the maxilla different amounts in different directions. Some of these patients also have a truly prognathic mandible in which case simultaneous mandibular repositioning should be carried out. Investigation must include studies of velopharyngeal incompetence as a forward advancement of the maxilla can produce VPI. If this is predicted, a pharyngoplasty should be performed at the same time as the orthognathic surgery. Details of planning and technical execution will be demonstrated in this course.

OLIN, W.H.: BASIC ORTHODONTIC AND DENTAL CONSIDERATIONS IN CLEFT LIP AND PALATE

The session will consist of 1) a discussion of the various phases of orthodontic treatment; 2) facial growth; 3) results of our adult study research; 4) a preliminary report of an analysis of the Schweckendiek procedure; 5) treatment of the premaxilla in bilateral cleft lip and palate; 6) bone grafting and 7) other dental problems.

PASHAYAN, H.: OROFACIAL SYNDROME: MANAGEMENT OF MEDICAL PROBLEMS AND INHERITANCE PATTERNS

Management of medical problems associated with patients born with orofacial malformations will be discussed. Special emphasis will be put on the problems encountered in the immediate postnatal and neonatal period. The inheritance patterns of the syndromes discussed will be given.

PETERSON—FALZONE, S.: PERCEPTUAL EVALUATION OF SPEECH IN OROFACIAL DISORDERS: CUES FOR REFERRAL AND MANAGEMENT DECISIONS

The characteristics of speech production which are traditionally taken as indicative of an inadequate velopharyngeal mechanism can be difficult to discriminate, particularly when they appear in conjunction with other abnormalities of speech. The level of confusion rises when some of these characteristics persist in speakers in whom no past or existing velopharyngeal inadequacy can in fact be documented. This study session will be designed to assist clinicians in learning to discriminate (1) the nasal distortions association with an inadequate VP mechanism (nasal emission,

posterior nasal frication, hypernasality), (2) the abberant compensatory articulation gestures often heard both in speakers with existing VP problems. Cues for referral and management will be derived primarily from the patterns of occurrence of the characteristics listed above, with an *a priori* assumption that ultimate management decisions would not be made without physical documentation of the status of the velopharyngeal port (radiographic, nasopharyngoscopic, aerodynamic, etc.). Audio and videotapes will be utilized. The session will be targeted for clinicians whose own experience in this area has not been sufficiently extensive to allow them to feel comfortable in the referrals and management suggestions they must make.

PRUZANSKY, S., PARRIS, P., GOULD, H.J.: THE MAKING OF A DATA BANK

There are two basic problems involved in developing a data bank for an interdisciplinary clinical unit designed to facilitate storage, retrieval and analysis of information essential for clinical use, administrative purposes and research. One problem is technological and the other is sociological. Given enough money, time, and more money, the technological problems can be solved since the requisite professional talent, hardware and software are already available for hire or purchase. The sociological problem is the major stumbling block, for it entails motivating and instructing clinicians to analyze and explicate their needs; participate in the testing of validity and reliability of data input, correcting data output, and committing themselves to utilize and support the program in daily operation. Since 1969, the Center for Craniofacial Anomalies at the Univesity of Illinois has been committed to the development of a Data Bank that is user-oriented. This experience will be shared allowing for the distillation of guidelines to serve user needs in varied settings. Registrants may submit questions in advance to Dr. Pruzansky.

SALYER, K.: MANAGEMENT OF FACIAL CLEFTS INCLUDING CLEFT LIP AND PALATE

A comprehensive approach to the treatment of clefting deformities will be discussed including surgery, orthodontic applications and speech.

SHPRINTZEN, R.J. and HELLER, J.: EVALUATION AND MANAGEMENT OF THE VELOPHARYNGEAL VALVING MECHANISM

An extensive instrumentation has been developed in order to assess the function of the velopharyngeal valve. The purpose of this study session is to assess those methods of assessment. Comparisons will be made between methods of direct versus indirect observation of velopharyngeal closure. Special emphasis will be given to direct visualization of the velopharyngeal sphincter by multi-view videofluoroscopy and fiber optic nasopharyngoscopy.

SKOLNICK, L.: VIDEOFLUOROSCOPIC EVALUATION OF THE SPEECH MECHANISM

The procedures of videofluoroscopic analysis of the velopharyngeal portal and the methods of interpretation of the results will be discussed. Patients with normal speech, cleft palates, and pharyngeal flaps (both hypernasal and non-nasal) will be presented. In addition, the anatomic basis for the use of this technique will be explained and briefly compared to other radiographic methods of visualizing the velopharyngeal portal.

STOOL, S., PARADISE, J., and McWILLIAMS, F. J.: OTITIS MEDIA: ISSUES AND CONSEQUENCES

This session will address the historical foundation of otitis media in children with clefts, what we know about the reasons for these problems, where current research is leading us, and what is known as suspected about the long-term results so far as speech, language, and development are concerned. We will address what is known along with what the problems are in reaching final definitive answers at this time.

STRAUSS, R.P. and BRODER, H.: INTERDISCIPLINARY TEAM BUILDING: DOES YOUR TEAM REALLY WORK?

A short presentation followed by a discussion will focus on group dynamics and status hierarchies that exist on the Cleft Lip and Palate teams. A team assessment questionnaire will be utilized to identify the issues your particular group may face in communicating with patients and parents and in interdisciplinary decision making. This course will permit sharing of experiences, understandings and the development of strategies for team problem

TURVEY, T. and EPKER, B.: DENTOFACIAL CORRECTIONS IN PATIENTS WITH CLEFTS

This presentation will include discussions of the following topics: a) the management of maxillary alveolar and palatal defects; b) maxillary advancement in the presence of a repaired cleft maxilla and palate; c) velopharyngeal considerations in the cleft palate patient; d) consideration of vertical maxillary deficiency in the cleft palate patient; e) simultaneous maxillary advancement and mandibular setback surgery for the cleft palate patient; and f) the timing and sequencing of orthognathic surgery, dental treatment, velopharyngeal incompetence, and soft tissue rehabilitation.

WARREN, D.: AERODYNAMIC STUDIES OF THE VELOPHARYNGEAL MECHANISM: CLINICAL IMPLICATIONS

This course will review two decades of clinical research concerning the aerodynamics of cleft palate speech and present evidence why structural abnormalities modify speech motor control and produce inappropriate compensatory speech behaviors. The effects of these behaviors on clinical management will be discussed.

WHITAKER, L.A. and DAVID, D.: DEVELOPMENTS IN CRANIOFACIAL SURGERY

The discussion will emphasize diagnosis and treatment timing with special focus on craniofacial dystosis the most common craniofacial disorder in our experience. Methods of treatment with respect to influencing growth patterns and predicting end results of surgery will be described and related to other syndromes in two centers from Australia and the U.S.A. Recent work with bone grafting as it relates to reconstructive procedures and to facial growth will be outlined.

PAPERS

THE CORRECTION OF TRIGONCEPHALY

Richard E. Albin, M.D., PH.D.
Henry Fieger, M.D.
Robert Hendee, Jr., M.D.
Richard S. O'Donnell, M.D., D.D.S.
The Children's Hospital and the University of Colorado, Denver, Colorado

Early extensive surgery can enable the child born with cranial synostosis to grow up looking normal. A series of ten cases of trigoncephaly repaired by modifying techniques developed for other craniofacial deformities will be presented. This will include pre- and post-operative photographs, diagrams and a statistical profile of the series. Age at surgery ranged from two to twenty-eight months (averge 11.6) and follow-up ranges from one to twenty-one months (average 9.8). No deaths, visual disturbances or infections occurred.

SOME ANATOMICAL OBSERVATIONS RELATIVE TO THE LEVATOR PALATI MUSCLES IN THE CLEFT PALATE

Ronald W. Atkins, M.D.
H. Steve Byrd, M.D.
University of Texas Southwestern Medical School, Div. of Plastic Surgery

During the past four years, the authors have made pertinent observations of a consistent fibrous band-like attachment to the levator palati muscles in the cleft palate patient. Recommendations relative to the surgical release of this structure and to the preservation of the fascia of the levator palati muscles during palatoplasty are made.

A COMPARATIVE STUDY OF FACIAL GROWTH FOLLOWING TWO-FLAP PALATOPLASTY IN BEAGLES AND RABBITS

J. Bardach, M.D.
M. Mooney, M.S.
E. Bardach
University of Iowa Hospitals and Clinics, Department of Otolaryngology and Maxillofacial Surgery

Beagles (30 and rabbits (45) were divided into three groups: Group 1-unoperated controls; Group II-surgically created defects of the lip, alveolus and palate-unrepaired controls; Group III-surgically created defects repaired with two-flap palatoplasty using mucoperiosteal flaps. Animals with palate repair (both rabbits and beagles) exhibited significantly enhanced overall facial growth compared to unrepaired controls which was almost indistinguishable from unoperated controls. These results contradict the classical philosophy that palate repair inhibits facial growth.

ORTHOGNATHIC, SURGICAL RECONSTRUCTION IN ADOLESCENT CLEFT PALATE PATIENTS

Thomas W. Braun, D.M.D., Ph.D.
Western Pennsylvania Hospital Cleft Palate Center

Orthognathic surgical reconstruction of cleft palate patients is a combination of treatment modalities created for the patient with maxillofacial deformities and the cleft palate patients. It differs from routine orthognathic surgical care in dealing with maxillary osteotomy accompanied by bone grafting, fistula closure, alveolar reconstruction, pharyngeal incompetence and pharyngeal flaps, osteotomy and incision design, means and duration of fixation, and methods of diagnosis and treatment planning. Generally, the surgical care is part of overall rehabilitation including prosthodontic, orthodontic and secondary lip and nasal revisions and must be sequenced accordingly. Treated cases, results and complications will be discussed which demonstrate orthognathic reconstruction.

PERCEPTIONS OF CHILDREN WITH VISIBLE OR INVISIBLE ORAL-FACIAL DEFECTS

Hillary Broder, Ph.D.
Oral-Facial and Communicative Disorders Program, School of Dentistry, University of North Carolina at Chapel Hill

The study examined the self-perceptions of children with visible or invisible oral-facial defects, and the perceptions of their parents and of professionals who evaluated them. A moderate level of agreement between the professionals' ratings of perceptions of their children's appearance and the children's feelings about their appearance. The extent of the children's visible defect and gender are associated with their satisfaction with their facial appearance.

MICROBIOLOGY OF RECURRENT AND CHRONIC OTITIS MEDIA IN CHILDREN WITH CLEFT PALATE

M.L. Casselbrant
J.L. Paradise, M.D.
C.D. Bluestone, M.D.
S.E. Stool, M.D.
Children's Hospital of Pittsburgh, University of Pittsburgh

In order to study the significance of bacteria in chronic and recurrent otitis media with effusion (OME) in a cleft palate population, 32 consecutive children (2 months to 11 years) were examined. Tympanocentesis and aspiration of the middle ear fluid were performed. The fluid obtained in 53 ears was examined with an improved microbiology technique. Using this technique, bacteria could be isolated from the middle ear fluid in 43%. The bacteria most frequently encountered were *H. influenzae* and *S. pneumonia. H. influenzae* was isolated in about 50% of the positive cultures.

EXPERIMENTS ON MUSCLE FUNCTION AND CRANIAL SUTURES

G. Chierici, D.D.S.
A. Miller, Ph.D.
K. Vargervik, D.D.S.
Center for Craniofacial Anomalies, University of California, San Francisco

Observations in craniofacial anomalies suggest an interrelationship of certain musculature and the relative extent and shape of adjacent bones. An experimental model was developed in which asymmetric activity was established by unilateral detachment of the temporal muscle in rhesus monkeys. Electromyographic recordings of the normal and detached muscles showed early differences. Histological preparations of biopsies of the adjacent suture areas taken at intervals until muscle reattachment showed altered cellular activity.

USE OF SKELETAL SCINTIGRAPHY TO EVALUATE MANDIBULAR ASYMMETRY

George J. Cisneros, D.M.D.
Leonard B. Kaban, D.M.D., M.D.
Department of Dentistry, Division of Plastic and Maxillofacial Surgery
Harvard School of Dental Medicine and Children's Hospital Medical Center

We have previously established the uptake patterns of Technetium 99m methylene diphosphonate (TC-99m-MDP) in the jaws of growing children. This study utilizes the technique of skeletal scintigraphy for diagnosis and treatment planning in patients with mandibular asymmetry. Nineteen patients with hemifacial microsomia (N=6), condylar hyperplasia (N=3) or mandibular hypoplasia (N=10) were assessed by skeletal scintigraphy. TC-99m-MDP uptake in the right and left mandible was compared to the known standards and was used to determine 1) rate of mandibular growth, 2) normal versus abnormal side in difficult cases, 3) the effects of operative and functional therapy, and to predict end-stage deformity.

PREMAXILLARY EXCISIONS: REASONS AND EFFECTS

Bard Cosman, M.D.
Columbia Presbyterian Medical Center, New York City

Five patients with bilateral cleft lip were treated by excision of the premaxilla sparing the premaxillary vomerine suture line and the anterior nasal spine but sacrificing the tooth buds and the surrounding bone. The procedure's rationale and its technique are detailed. Facial form was well preserved but without prophylactic orthodontic care a unique deformity of the alveolar arch was seen. Long term follow up is presented.

IS THE MANDIBLE INTRINSICALLY ABNORMAL IN APERT AND CROUZON SYNDROME?

Maria Costaras, D.D.S.
S. Pruzansky, D.D.S.
University of Illinois Medical Center, Center for Craniofacial Anomalies

Nine angular and seven linear measurements were utilized to describe mandibular shape and size in 80 patients with Apert (n=32) and Crouzon (n=48) syndrome. The mandibular ramus was found to be normal in length while the body was significantly shorter producing a distinctive ramus/body length ratio. This finding is significant in planning reconstructive surgery. It also indicates that reductions in oral and pharyngeal spaces may be affected by reduced mandibular body length.

UNIQUE SUBPOPULATIONS WITHIN THE CATEGORICAL DIAGNOSIS OF FRONTONASAL DYSPLASIA

Donald W. Day, M.D.
Center for Craniofacial Anomalies, University of Illinois Medical Center

A large population of patients with the generic diagnosis of frontonasal dysplasia has been evaluated to determine the presence and characteristics of specific subpopulations which might represent recognizable genetic syndromes. The larger heterogeneous population has been analyzed by study of differences in phenotype, genetic risk, and derived complications. Progress in the identification of subpopulations such as craniofrontonasal dysplasia will be presented.

A SYSTEMATIC APPROACH TO THE CORRECTION OF SECONDARY NASAL DEFORMITY IN CELFT LIP PATIENTS

David G. Dibbell, Jr.
Jack Cochran, Jr.
University of Wisconsin School of Medicine

A staged approach for the correction of the nasal deformity associated with cleft lip is described, with the first operation in the pre-school period and the second in adolescence.

TOMOGRAPHIC METHODS IN CRANIOFACIAL ANOMALIES

David Ross Dickson, Ph.D.
Wilma Maue-Dickson, Ph.D.
University of Miami School of Medicine

The development of high-resolution (greater than 10 lines per cm) thin-section (2mm) TCT scans for evaluation of pediatric craniofacial anomalies will be discussed. Examples to be presented include scans of cleft palate, otocephaly, midline facial cleft and normal third trimester human fetuses at various scan thicknesses.

HEARING IN INFANTS WITH CLEFT PALATE

Herbert Jay Gould, Ph.D.
University of Illinois Medical Center

Cleft palate infants have been shown to exhibit a high prevalence of middle ear effusion. Based on studies of older children an assumption has been made that significant hearing loss is associated with middle ear fluid in the infant. The current study directly assessed the hearing acuity in infants with craniofacial malformation. The hearing results were examined in relation to otologic findings, general development, presence of tympanostomy tubes, type of malformation and age.

THE VOMER BRIDGE FLAP OR VELAR LIFT/VELAR PLASTY

V. Michael Hogan, M.D., F.A.C.S.
New York University Medical Center

This is a new procedure which can be incorporated into most existing repairs of cleft palate. It has demonstrated an increased velopharyngeal competency in those patients whose velopharyngeal incompetency is associated with a short palate. As the obturator has been replaced by the pharyngeal flap, so this new procedure replaces the velar lift prosthesis.

EXPERIENCE WITH ALVEOLAR BONE GRAFTING IN CLEFT PALATE PATIENTS IN THE MIXED DENTITION PHASE

Ian T. Jackson, M.D.
Luis Scheker, F.R.C.S.
Mayo Clinic, Rochester, Minn.

A group of cleft palate children in the mixed dentition stage had the alveolar defect grafted with bone marrow. The purpose of this was to allow orthodontic manipulations to be carried out with the security of an intact alveolus. Bone marrow is used in the hope that this would obviate the problems reported in the past when two conventional bone grafts were employed.

A PRELIMINARY EVALUATION OF THE BENEFITS OF EARLY CRANIOFACIAL SURGERY ON PSYCHOSOCIAL ADAPTATION

Kathy Kapp-Simon, Ph.D.
Nancy Mulnix, M.A.
Center for Craniofacial Anomalies, University of Illinois Medical Center

The purpose of this paper is to review the psychological data available on twenty-five children who underwent the first stage of craniofacial reconstruction before age ten. Post-operative follow-up ranges from one to eight years. Issues to be addressed include psychosocial benefit of early surgical reconstruction, family needs with regard to surgical intervention, and psychosocial problems related to early intervention.

FURLOW DOUBLE Z-PLASTY PALATOPLASTY

Cynthia A. Kavouksorian, M.D.
Peter Randall, M.D.
Marilyn Cohen, B.A.
Donato D. LaRossa, M.D.
Children's Hospital of Philadelphia and University of Pennsylvania School of Medicine

A method of repairing the soft palate using oral and nasal Z-plasties with muco-muscular flaps was introduced by Leonard Furlow in 1978. We reviewed the results of soft palate closure done in 29 children using this method. It provides for muscle repositioning without the technical difficulties encountered in complete bi-lateral muscle dissection. It is a versatile procedure and can be combined with a lengthening procedure or primary posterior pharyngeal flap, if desired. In our hands it is a safe and reliable procedure even in young (three month old) infants. The method is discussed in detail.

OCCLUSION IN THE ANTERIOR AND POSTERIOR SEGMENT IN CHILDREN WITH CLASS II AND CLASS III CLEFT PALATE

C. Kavouksorian, M.D.
T. Sexton, D.M.D.
R. Havener, D.M.D.
R. Mayro, D.M.D.
D. LaRossa, M.D.
P. Randall, M.D.
The Cleft Palate Program of the Facial Reconstruction Center of the Children's Hospital of Philadelphia

The occlusion in the anterior and posterior segment in the primary and secondary dentition of forty-five patients with Veau Class II and Class III cleft palates who had completed their second dentition were evaluated. Factors influencing the degree of malocclusion at both the primary and secondary stages were sought from among a number of pre- and postoperative variables examined. The data will be discussed in a two part presentation by the plastic surgical and dental authors.

SUPRAGLOTTIC AIRWAY OBSTRUCTION AFTER PHARYNGEAL FLAP SURGERY

Charles F. Koopman, Jr., M.D.
John Bjelland, M.D.
William Casey, M.D.
University of Arizona Health Sciences Center

The authors present a brief review of airway obstruction following pharyngeal flap surgery followed by their experience with failure of flap revision or division to alleviate the respiratory distress. They report physical and radiographic findings of supraglottic airway collapse following pharyngeal flap surgery, the management of this entity, and their recommendations concerning the pre-operative evaluation of such patients.

MAXILLOFACIAL GROWTH IN BEAGLES AFTER AN EXPERIMENTAL RIDGE FLAP MODIFICATION OF A CLEFT PALATE REPAIR PROCEDURE

C. R. Kremenak, D.D.S., M.S.
T. Wada, D.D.S., Ph.D.
J.C. Searls
W.H. Olin, Jr., D.D.S., M.S.
C.G. Moore
B.B. Sopher
R.R. Hathaway, B.A., M.S.
L.R. Wilcox
C.R. Monahan
University of Iowa and University of Osaka (T.W.)

We report findings from a 40-day trial of a "ridge flap" modification for palatoplasties. Surgery, at 21 days in suckling beagles, involved simulation of palatal clefts followed by repair using flaps which incorporate mucoperiosteum from alveolar ridges as well as from the palate. Denuded areas were thus on alveolar ridges instead of on lateral aspects of the palate. Maxillary and dental

growth is relatively normal after 3 months; final results will be evident by April.

CRANIOFACIAL GROWTH IN CLEFTING, ONE MONTH TO TEN YEARS, ANALYZED IN SERIAL LATERAL HEADFILMS BY PAIRED CLEFT-TYPES VIA THE COMPARISON METHOD

Wilton M. Krogman, Ph.D., D.Sc.
Ram B. Jain, Ph.D.
Seishi W. Oka, D.D.S., Ph.D.
H.K. Cooper Clinic, Lancaster, PA

This study is based upon 11 dimensions and three angular relationships of serial lateral headfilms in the first postnatal decade in 64 UCLP, 32 BCLP, 78 CPO. Four structural areas or units are established: 1) cranial base; 2) face heights; 3) midfacial depths and basifacial angle (SNA); 4) mandible. There are three pairings of cleft-types; UCLP/BCLP, BCLP/CPO, UCLP/CPO, relationships of which will be discussed in terms of analysis via the comparison method.

DIAGNOSTIC INSTRUMENTATION: AIDS FOR TREATMENT DECISIONS

D. Kuehn, Moderator & Chairman
K. Ramig, Coordinator

D. Kuehn	**Statement of the Problem**
D. Warren	**Aerodynamics**
M. L. Skolnick	**Radiology and Ultrasound**
R. Shprintzen	**Nasopharyngoscopy**
Y. Horii	**Accelerometry and Acoustics**
W. M. Dickson	**C. T. Scanning**
Wm. Trier	**A Surgeon's Summary**

EARLY REVASCULARIZATION OF MEMBRANOUS BONE GRAFTS

Joseph F. Kusiak, M.D.
James E. Zins, M.D.
Ernest Ring, M.D.
Linton A. Whitaker, M.D.
Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

Membranous bone is superior to other types when autografted on the craniofacial region of animals and man. This enhanced survival may be due to early vascularization or may be the result of delayed vascularization and late absorption. Identical size membranous and endochondral bone blocks were autografted on the snouts of 25 rabbits. At 1, 3, 7, 14 and 21 days, five animals were sacrified and the microvascular pattern of the grafts visualized with perfused silicone rubber and quantitated by a point-counting method. Membranous bone is more rapidly revascularized than endocrondral onlay grafts. Enhanced membranous bone graft survival is the result of this earlier vascularization.

THE CRANIOFACIAL ANATOMY OF UNILATERAL CORONAL SYNOSTOSIS

Jeffrey L. Marsh, M.D.
Mokhtar Gado, M.D.
Cleft Palate and Craniofacial Deformities Institute
Washington University School of Medicine, St. Louis

High resolution axial CT scans with reformated coronal, sagittal and longitudinal orbital images were obtained preoperatively in 7 children with unilateral coronal synostosis. Craniofacial scoliosis, asymmetry of the middle cranial fossae, pterion narrowing with effacement of the temporal fossa, and coronal but not longitudinal "verticalization" of the anterior cranial fossa floor characterize unilateral coronal synstosis. The apparent horizontal dystopia is illusory merely reflecting the craniofacial scoliosis. These anatomic findings suggest pathophysiological mechanisms and new therapeutic considerations.

FACIAL GROWTH FOLLOWING LIP REPAIR: AN EXPERIMENTAL STUDY IN BEAGLES

Mark P. Mooney, M.S.
Janusz Bardach, M.D.
University of Iowa Hospitals and Clinics, Department of Otolaryngology and Maxillofacial Surgery

Thirty beagles were divided into three groups: Group I–unoperated controls; Group II–surgically created defects of the lip, alveolus and palate, unrepaired controls; Group III–surgically created defects. The lip was repaired while the palate was left unrepaired. Animals with lip repair exhibited significantly increased lip pressure and enhanced facial growth in all dimensions except maxillary length compared to unrepaired controls. Results validated previous findings in rabbits and confirmed the hypothesis that excessive lip pressure, following lip repair may be an important variable in anterior-posterior facial growth inhibition in the beagle model.

EVALUATION OF THE EFFECT OF LEVATOR RETRODISPLACEMENT UPON CONDUCTIVE HEARING LOSS IN THE CLEFT PALATE PATIENT

Raymond F. Morgan, M.D.
A. Lee Dellon, M.D.
John E. Hoopes, M.D.
The Johns Hopkins Medical Institutions

This study evaluated the effect of a levator retropositioning procedure upon hearing loss in a group of 42 patients operated upon between 1970 and 1975 for congenital velopharyngeal incompetence. The results suggest that 75% of patients who achieve good speech results after a primary palatoplasty that incorporated a levator retropositioning also achieved normal hearing. The results are discussed in terms of patient age, severity of the cleft, effect of multiple operative procedures, and PE tube placement.

EFFECT OF LE FORT I OSTEOTOMY ON SUBSEQUENT FACIAL GROWTH IN ADOLESCENT MONKEYS

Ravindra Nanda, B.D.S., M.D.S., Ph.D.
University of Connecticut Health Center

In the present study Le Fort I osteotomy was performed on 16 adolescent Macaca fasicularis monkeys to study its effect on subsequent craniofacial growth. The cephalometric results show that surgery did not prevent the horizontal and vertical growth of the maxilla. The direction of maxillary growth significantly varied in experimental animals, indicating the adverse role of septoplasty of the nasal septum during surgery.

A QUANTITATIVE SURVEY OF PRESENT METHODS AND TECHNIQUES BEING TAUGHT REGARDING CLEFT LIP AND PALATE SURGERY

John M. Osborn, M.D.
John C. Kelleher, M.D.
University of California at Davis and Medical College of Ohio, Toledo

In an attempt to quantitatively document what is actually being taught in Plastic Surgery Training Programs regarding Cleft Lip & Palate Surgery at this time (1980), a survey was mailed to each residency program and completed by a senior resident from 80% of all training programs in the U.S. Results will be broken down into the East, Midwest, South and West, where significant, and will be compared to data from a similar survey done six years earlier, revealing subsequent trends and changes.

INCIDENCE AND TYPE OF IMPAIRMENT IN SELECTED PSYCHOLOGICAL VARIABLES IN CLEFT LIP AND PALATE CHILDREN

James A. Pasino, Ph.D.
Libby F. Wilson, M.D.
Cleft Palate Service, Rancho Los Amigos Hospital

This comparative study of 20 cleft lip palate children (CLP) and 20 of their non-affected, same sex, similar age siblings (NCLP) strengthened our notion that the CLP child's head may be damaged outside, but not necessarily inside. CLP children were not found to be at greater risk for perceptual-motor dysfunction, personality disorder, reasoning and learning difficulties, or disordered mother-child relationships. Children performed equally well regardless of CLP or NCLP.

THE TREATMENT OF VELOPHARYNGEAL INSUFFICIENCY USING RETROPHARYNGEAL PROPLAST IMPLANTS

Steven L. Ringler, M.D.
Clyde R. Willis, Ph.D.
John H. Beernink, M.D.
William D. Moore, M.D.
Butterworth Hospital, Grand Rapids, Michigan

This clinical study was designed to determine the efficiency and safety of proplast implants in the retropharyngeal space for the treatment of mild velopharyngeal insufficiency (VPI). Thirty-four patients have undergone this procedure in a two-year period. All patients had pre- and postoperative evaluation by a speech pathologist using oral panendoscopy. Most patients showed significant correction of VPI. This procedure is shown to be safe and effective in treating velopharyngeal insufficiency.

INTERNATIONAL FORUM: CLEFT LIP, PALATE AND CRANIOFACIAL REHABILITATION AROUND THE WORLD

K. Salyer, Moderator & Chairman
H. Morris, Coordinator

Nacho Tregas	*Mexico & S. America*
David David	*Australasia*
David Davies	*Southern Africa*
Sam Nordhoff	*Taiwan & China*
Wolfgang Muhlbauer	*Germany*
Khoo Boo Chai	*Singapore & S.E. Asia*
Ian Jackson	*United Kingdom*
K-E Nordin	*Scandinavia*

CLOSURE OF LARGE MAXILLARY CLEFTS WITH FREE PERIOSTEAL GRAFTS

Richard C. Schultz, M.D.
Carl N. Williams, Jr., M.D.
University of Illinois College of Medicine
The Abraham Lincoln School of Medicine

The objectives of free periosteal grafting are: (1) to obtain alveolar arch stability after preoperative positioning by maxillary orthopedics, (2) to assist in closure of oronasal fistula, (3) to close large pear-shaped clefts in the maxilla responsible for functional and growth difficulties, (4) to provide mechanical support for the receded alar base, and (5) to encourage continued maxillary growth and closure by migration of teeth into the cleft. As eruption of the cleft side canine ordinarily occurs at the age of 13, theoretically the ideal period for free periosteal grafting is between the age of 10 to 13. Five cases of free periosteal grafting were performed in our series. Pre- and post-operative management and clincal results are presented. Based on our preliminary experience free periosteal grafting is technically a superior procedure for reconstruction of the maxillary bony cleft.

THE EFFECTS OF SPLIT THICKNESS GRAFTS APPLIED TO SELECTIVE MUCOPERIOSTEAL DEFECTS IN BOTH RATS AND HUMANS

Richard Smialek, D.O.
Robert Pool, M.D.
Thomas Robbins, M.D.
William Beaumont Hospital, Royal Oak, Michigan

This study was undertaken to determine which surgical and anatomic factors are the most important in inhibiting maxillary growth. Eight-four (84) male Sprague-Dawley rats had the following palatal operations performed under magnification: elevation of the mucoperiosteum, denudation of the mucoperiosteum, with and without the application of a split thickness skin graft, and excision of the posterior palatine artery alone. Our research indicated that up to 40% palatal growth disturbance occurred when the posterior palatine artery was excised together with mucoperiosteal denudation and that covering significant palatal defects with immediate split thickness skin grafts reduces this growth disturbance by as much as 45%.

THE EFFECT OF PHARYNGEAL FLAP SURGERY UPON MAXILLARY GROWTH

Richard Siccaro, D.D.S.
Jeffrey L. Marsh, M.D.
Farhad Moshiri, D.D.S.
Cleft Palate and Craniofacial Deformities Institute
Washington University Medical Center, St. Louis

The effect of prepubertal pharyngeal flap surgery upon maxillary growth in 20 patients having velopharyngeal incompetency (VPI) without overt clefts or previous palatal surgery was studied by analysis of serial cephalometric radiographs. Reduction in both maxillary anterior projection and length characterized the VPI patients irrespective of growth or surgery. The flap was associated with reduced maxillary forward movement and length gain. Vertical maxillary growth was unaffected by VPI or flap surgery.

INCIDENCE OF DIVORCE AND MARITAL ADJUSTMENTS RATINGS OF PARENTS OF CHILDREN WITH CLEFT LIP AND/OR PALATE

Philip Starr, M.S.W.
H.K. Cooper Clinic, Lancaster, PA

A survey of the marital status of 212 parents of children with cleft lip and/or palate (CL/P) was undertaken to assess whether the patient group had a similar incidence of divorce as did the general population. Data from a subsample of these parents were analyzed to assess whether there were any cleft type differences of the children in marital adjustment ratings. In both cases, there were no significant differences. The implications for practice and research will be discussed.

ETHICAL AND SOCIAL CONCERNS IN FACIAL SURGICAL DECISION MAKING

Ronald P. Strauss, D.M.D., Ph.D.
Oral, Facial & Communicative Disorders Program
University of North Carolina at Chapel Hill School of Dentistry

This paper will present a sociological perspective on how different societies respond to facial disfiguration. It will clarify how culture defines the role of medicine and identify the impact that surgical intervention has upon social values. Cosmetic and maxillofacial surgical decision making and the controls upon how much surgery is performed will be evaluated. Historical factors in the recent growth of oral surgical treatment of jaw deformities will be examined in light of the ethical issues that relate to patient selection.

VELOPHARYNGEAL INCOMPETENCY IN THE ABSENCE OF OVERT CLEFT PALATE: ANATOMIC AND SURGICAL CONSIDERATIONS

William C. Trier, M.D.
Division of Plastic Surgery, University of North Carolina, Chapel Hill

In forty-four patients with velopharyngeal incompetency undergoing pharyngeal flap surgery in the absence of overt cleft palate, only nine demonstrated pre-operatively the classic triad of submucous cleft palate with bifid uvula, bony cleft and muscle disastasis. Twenty-six patients were found to have an occult submucous cleft palate with abnormal insertion of the levator muscles but abnormality of the hard palate was present in only eleven. Only four patients had an anatomically normal palate.

MAXILLARY ADVANCEMENT, CLOSURE OF ORAL NASAL FISTULAS AND SIMULTANEOUS BONE GRAFT RECONSTRUCTION OF THE ALVEOLUS AND PALATE IN UNILATERAL CLEFT DEFORMITIES

Timothy A. Turvey, D.D.S.
University of North Carolina Oral-Facial Communicative Disorders Program, Department of Oral & Maxillofacial Surgery, UNC School of Dentistry

A technique for simultaneously advancing the maxilla, closing oral-nasal fistulas and reconstructing the palate and alveolus in unilateral cleft deformities will be presented. Results have been encouraging and complications are rare.

STABILITY OF VELOPHARYNGEAL COMPETENCY

D.R. Van Demark, Ph.D.
H.L. Morris, Ph.D.

Dept. of Otolaryngology – Speech Pathology, University of Iowa Maxillofacial Surgery

The purpose of this study was to describe the stability of velopharyngeal competency and articulation of subjects with cleft palate on a longitudinal basis. With at least three ratings of velopharyngeal competency made by age six, subjects were classified as: adequate closure (N=51), marginal closure (N=50), and no closure (N=30). Ratings and surgical history were then obtained when the subjects were 10 years of age or older. This study demonstrated the variation in velopharyngeal competency in that over 26% of the closure subjects were rated as marginal at age 10. For the marginal group 38% had subsequently had pharyngeal flap surgery; however, many of the remaining subjects had achieved closure with only 29% remaining marginal. For the no closure group, essentially all subjects had required secondary management. This study points out the need to study velopharyngeal closure on a consistent basis until final growth is achieved.

EFFECTS OF JAW ORTHOPEDIC TREATMENT ON MANDIBULAR GROWTH WITH HEMIFACIAL MICROSOMIA

Karin Vargervik, D.D.S.
Egil Harvold, D.D.S., Ph.D., LL.D.
Center for Craniofacial Anomalies, University of California, San Francisco

Thirty subjects with varying degrees of hemifacial microsomia were studied with regard to mandibular growth response to treatment with a jaw orthopedic appliance. The treatment resulted in additional growth in all subjects except in those who had very restricted mobility of an existing articulation or in those who had no coronoid or condylar process. When a coronoid process has been developed by surgery and bond induction treatment bone apposition occurred on the new structure during the following treatment period.

ORTHOGNATHIC DEFECTS AND SURGICAL CORRECTION: THE EFFECTS ON ARTICULATION

Mary Anne Witzel, Ph.D.
R. Bruce Ross, D.D.S.
Ian R. Munro, M.A., M.B., B. Chir.
The Hospital For Sick Children, Toronto, Ontario

This study examined the effects of horizontal and vertical defects in the relationship of the maxillary incisors to the mandibular incisors and their surgical correction on articulation. Orthodontic measurements were taken and articulation was tested in 111 patients before and six to 12 months after surgery. The results indicate that defects in the horizontal relationship of the maxillary to the mandibular incisors may be directly related to articulation and that there is a direct relationship between the improvement in these defects and in articulation.

THE PERICRANIAL FLAP, AN ANATOMIC AND CLINICAL STUDY

James E. Zins, M.D.
William Vasileff, M.D.
Eric Blomain, M.D.
Linton A. Whitaker, M.D.
Hospital of the University of Pennsylvania

Soft tissue deficiency problems about the face remain difficult reconstructive problems. Existing methods, including dermal grafts and dermal fat grafts, are less than optimal. The pericranial flap, introduced by a number of reconstructive centers, including ours, offers a superior and more reliable alternative. Although this has been presumed to be a vascularized flap, fluorescein injections fail to corroborate this. In spite of this, the flap is reliable, and long term results appear to be superior to previous methods of correction.

COMPUTERIZED TOMOGRAPHIC SCANNING AND BONE GRAFT SURVIVAL

James E. Zins, M.D.
William Vasileff, M.D.
Linton A. Whitaker, M.D.
Hospital of the University of Pennsylvania

Currently, there is no noninvasive method for assessing bone graft volumes clinically. This paper demonstrates that the Phillips 300 Computerized Tomographic Scanner accurately determines bone graft volumes in rabbits. These scanning techniques provide an excellent research tool for the noninvasive study of bone graft volumes, and they are finding broader applications in the preoperative planning of craniofacial procedures.

POSTER SESSION

COSMETICS AS AN AID TO CLEFT LIP SURGERY

K. Porter

CRANIOFRONTONASAL DYSPLASIA

Samuel Pruzansky, D.D.S., M.S.
M. Costaras
B. Rollnick, Ph.D.

READING DISABILITY SUBTYPES IN CHILDREN WITH CLEFT LIP AND PALATE

Lynn C. Richman, Ph.D.

ANALYSIS OF THE CLEFT LIP NOSE

Richard Sadove, M.D.

PREDICTION OF MODELED VELOPHARYNGEAL ORIFICE AREAS DURING STEADY FLOW CONDITIONS AND DURING AERODYNAMIC SIMULATION OF VOICELESS STOP CONSONANTS

Bonnie E. Smith, Ph.D.
Bernd Weinberg, Ph.D.

THE PARENT LIAISON COMMITTEE: ITS EDUCATIONAL EFFORTS

Philip Starr, M.S.W.

SPEECH CHANGES FOLLOWING ORTHODONTIC TREATMENT WITH THE FUNCTIONAL REGULATOR

Mary Ellen Tekieli, Ph.D.
Dennis M. Ruscello, Ph.D.
Michael P. Kerr, D.D.S.
Robert N. Moore, D.D.S.

FOLLOW-UP CLINIC

L.F. Wilson, Co-Chairman
R.C.A. Weatherley-White, Co-Chairman

Lateral Port Control in Pharyngeal Flap Surgery	W. M. Hogan
Sphincter Pharyngoplasty in V.P. Incompetence	I. T. Jackson
Primary Bone-Grafting in Complete Clefts	D. A. Kernahan
The Millard Island Flap in Primary Palatoplasty	L. Ketch

ONE-STAGE CORRECTION OF MASSIVE CRANIAL VAULT ENLARGEMENT AND TRIGONCEPHALY

Richard E. Albin, M.D., Ph.D.
Henry Fieger, M.D.

A STUDY OF MASTOID PNEUMATIZATION IN MATURE PATIENTS WITH UNILATERAL CLEFT LIP AND PALATE

Robert M. Bumsted, M.D.
Kenneth D. Dolan, M.D.

COMPUTER-GENERATED REPORTS OF SPEECH AND LANGUAGE EVALUATIONS

Rodger M. Dalston, Ph.D.

THE RADICAL REPAIR OF CLEFT-LIP AND PALATE: A 15-YEAR FOLLOW-UP

David Davies, F.R.C.S.
Capetown, S. Africa

FACTORS DETERMINING WIDTH OF THE CLEFT FOLLOWING LIP REPAIR IN COMPLETE UNILATERAL CLEFT LIP AND PALATE

Alvaro Figueroa, D.D.S.
Samuel Pruzansky, D.D.S.

GENERAL AND SPECIAL EDUCATORS' BASIC INFORMATION AND EXPERIENCE WITH CLEFT PALATE

Denis E. Finnegan

PHONOLOGICAL ANALYSES AT TWO AND FIVE YEARS IN CHILDREN WITH CLEFT PALATE

D.R. Fox, Ph.D.
J.I. Lynch, Ed.D.
B. Brookshire, M.A.

A LONGITUDINAL STUDY OF T.M.J. IN UNILATERAL AND BILATERAL CLEFT PATIENTS FROM AGES FOUR TO FIFTEEN

Lawrence S. Harte, D.D.S.

ROTATIONAL OSTEOTOMIES OF THE MIDFACE AND MANDIBLE—CORRECTION OF PRIMARY AND COMPENSATORY ABNORMALITIES IN MIDFACIAL HYPOPLASIA

Michael C. Kinnebrew, D.D.S., M.D.
David R. Hoffman, D.D.S.

CURRENT CLINICAL PRACTICES IN THE ASSESSMENT OF VELOPHARYNGEAL CLOSURE

Grace Middleton, D.Ed.
Norman Lass, Ph.D.
Mary Pannbacker, Ph.D.

FILM/VIDEO SESSIONS

Videotape Format for the Education of Health Professionals, Patients, and Families

Marcia Aduss, B.A.
Debra Dorf, M.A.
Margaret Novy, R.N., C.P.N.A.
Center for Craniofacial Anomalies, University of Illinois Medical Center

Autogenous Marrow Grafting Of Residual Alveolar Clefts

Philip J. Boyne, D.M.D.
Loma Linda University Medical Center, Department of Surgery

Cleft Lip & Palate: Investigating the Experience

Canadian Broadcasting Corporation and The Canadian Cleft Lip and Palate Family Association

Nasendoscopy And Midface Deformity

D.J. David, M.B., B.S., F.R.A.C.S., F.R.C.S.
J. White, M.B., B.S.
R. Sprod, I.M.B.I.
A. Bagnall, L.C.S.T.
South Australian Cranio Facial Unit
Adelaide Children's Hospital, Australia

Videofluoroscopy and Nasopharyngoscopy: A Comparison of Two Diagnostic Techniques

R.J. Shprintzen
Montefiore Hospital and Medical Center and the Albert Einstein College of Medicine