

1975

ADVANCES IN ORAL SURGERY

Volume 5 • 1975

Collected from ORAL RESEARCH ABSTRACTS

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PREFACE

The fifth volume of *Advances in Oral Surgery*, like its predecessors, contains abstracts of articles related to all phases of oral surgery. The original articles represented by these abstracts were published in hundreds of journals around the world. The abstracts have been prepared to provide the reader with significant new information originally published in journals devoted to clinical dentistry, dental research, medicine and the basic sciences. The scope of the abstract collection is deliberately broad so that developments which might be overlooked by the practicing clinician have been included.

This compilation is intended to be useful to all those who have a special interest in oral surgery. In addition to all the abstracts published in the Surgery section of the 1974 volume of *Oral Research Abstracts*, other abstracts which have a relationship to problems and progress in oral surgery also have been included.

The indexes have been prepared from the index to volume 9 of *Oral Research Abstracts*, with some editorial revision. Journal abbreviations are those used in *Index Medicus*, the list of journals abstracted begins on page 115.

Users of *Advances in Oral Surgery* should recognize that the abstracts were written to provide information only. No judgments are made in this volume, or in *Oral Research Abstracts*, about the value or the validity of any of the reported findings.

We hope that *Advances in Oral Surgery* and other volumes in the *Advances* series will provide a means for oral surgeons to stay abreast of developments throughout the world in their specialty and that the volume will be useful to teachers and students as well. Readers are urged to make suggestions about the organization, content or any other improvements in this volume.

ABBREVIATIONS

A: Angstrom units(s)
ac: alternating current
ACTH: adrenocorticotrophic hormone
amp: ampere(s)
aq: aqueous
assn: association

BP: British Pharmacopoeia
bp: boiling point
btu: British thermal unit

°C: degrees centigrade
Ci: curie
cm: centimeter(s)
cm²: square centimeter(s)
cm/sec: centimeters per second
count/min: counts per minute
count/sec: counts per second
CP: chemically pure
cycle/min: cycles per minute
cycle/sec: cycles per second

D-: dextro- (configuration)
def: decayed, extracted and filled (deciduous teeth)
DL-: optical configuration (a mixture of dextro- and levo-)
DEAE: diethylaminoethyl
DMF: decayed, missing, filled (permanent teeth)
DMFS, DMFT: decayed, missing, filled surfaces; -teeth
DNA: deoxyribonucleic acid
ED₅₀: effective dose, median
EDTA: ethylene diamine tetraacetic acid

°F: degrees fahrenheit
ft: foot
ft²: square foot
ft/min: feet per minute
ft/sec: feet per second

G: gravity
g: gram

Hb: hemoglobin
hr: hour

in²: square inch
IR: infra red
IU: international unit

j: joules

K: equilibrium constant
kc: kilocycle
kc/sec: kilocycles per second
kcal: kilocalorie(s)
kev: kiloelectron volt
kg: kilogram(s)
km: kilometer
kp: kilopond force (kilogram force)
kv: kilovolt
kva: kilovolt-ampere
kvp: kilovolt peak

L-: levo- (configuration)
lb: pound(s)
LD₅₀: lethal dose, median
L: liter

M: molar (as applied to concentration)
m: meter (only when used with another abbreviation)
ma: milliampere(s)
mas: milliampere-seconds
ma/sec: milliamperes per second
mCi: millicurie
mEq: milliequivalent
mg: milligram
mg/100 ml: milligram percent
mg/kg: milligram per kilogram
min: minute
ml: milliliter
mM: millimole
mm: millimeter
mΩ: milliohm(s)
mv: millivolt
mp: melting point
μm: millimicron(s)

n-: nano
N: normal (as applied to concentration)

Ω: ohms

p-: pico
pH: hydrogen ion concentration negative logarithm of
pK: dissociation constant, negative logarithm
pp: pages
ppm: parts per million
psi: pounds per square inch

R: roentgen
rad: roentgen absorbed dose
rem: roentgen equivalent(s) man
rep: roentgen equivalent(s) physical
RNA: ribonucleic acid

rpm: revolutions per minute

SD: standard deviation
SE: standard error (of the mean)
sec: second

μ: micron; micro (10⁻⁶)
μCi: microcurie
μg: microgram
μl: microliter
μM: micromole
μμg: micromicrogram
US: United States of America
USP: (with edition number): United States Pharmacopoeia
UV: ultraviolet

v: volt
vol: volume
vol%: volume(s) percent

wk: week
wt: weight

yr: year

/: per
°: degree (degree of angle)
(+): dextrorotatory (optical rotation)
(-): levorotatory (optical rotation)
(±): optical rotation (a mixture of dextrorotatory and levorotatory)
%: percent

Other abbreviations used in abstracts are explained at their first appearance. For example: "muscle adenosine triphosphate (ATP) concentration..." "Cysts of the temporomandibular joint (TMJ) were excised..."

Chemicals are designated by symbols whenever possible: international abbreviations, H, O, C, N, S, etc., are used. When the exact composition of the compound is not known, other designations may be used, thus, "Ca phosphate" may mean any of several phosphate salts of calcium.

Most journal abbreviations are taken from the "List of Journals Indexed in Index Medicus." A complete guide to journal abbreviations used appears in the back of this issue.

1975

ADVANCES DENTAL SURGERY

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Anatomy

1 Evaluation of a course in surgical anatomy with special reference to the value of self-instruction. H. Birn and E. Christophersen (Royal Dent Coll, Aarhus, Denmark). *Brit J Med Educ* 7(1):34-9 March, 1973. The past decade has seen an enormous explosion of knowledge in dental education. The practicing dentist is finding himself almost 5 yr-behind the same month he graduates from dental school. With the growing concern for the development of effective continuing education courses, many educators are exploring possible instructional techniques which reach the most number of dentists, require the least number of instructional personnel, and result in high instruction retention levels by the participants over a relatively long period of time. A course in surgical anatomy was given to 63 dentists from 10 different countries, all having a disparity in surgical anatomy aptitude. Two basic types of education techniques were used: lecture and demonstration (I) and self-instruction, using cassette recordings and specimens followed by seminar discussion (II). The course and the various teaching methods were evaluated by pretesting the participants, immediate post-testing, and retesting after a 6-month period. The same test was given all 3 times, each time shuffling the question order thereby reducing the possibility of question recognition by the participants. The type of instruction most widely received was II. This technique also required a minimum number of instructors, allowed a maximum number of participants, and resulted in considerably greater assimilation and retention of the material presented. Postgraduate courses of the greatest efficacy should use a pretest informing the participants of their need for the course, individualized learning requiring effort on the part of the participant followed by seminar discussions of unanswered questions, an immediate post-test, demanding of all participants the same level of academic or technological achievement, and a final test showing the participants how they benefited from the course and the instructors the value of their presentation thus enabling them to make necessary corrections for the next session.

Daniel E. Waite

2 Identification of the facial nerve in parotid surgery. A. G. D. Maran. *J Roy Coll Surg Edinb* 18(1):58-9 Jan, 1973. Several methods are available for identification of the facial nerve in parotid surgery. Electrical stimulation is useful in nerve filament differentiation. A safe technique for nerve identification which can be applied in most forms of parotid surgery is described.

George S. Nixon

3 Surgical anatomy of the intraglandular portion of the facial nerve. Franc Celesnik (Univ Clin Max-Fac-Surg, Ljubljana, Yugoslavia). *J Maxillofac Surg* 1(2):65-73 June, 1973. The main obstacle of parotidectomy is injury to the facial nerve. As the parenchyma of the supra- and subfacial portion of the parotid gland are fused, the varying number of branches has to be traced through the gland after the main trunk has been dissected. The length of the trunk and the number of branches are unpredictable. Grouping of the nerve distribution does not seem reasonable. Injection of 2 ml of 1% methylene blue into Stenson's duct stains parenchyma and ducts and leaves the nerve pinkish, thus facilitating its dissection. If possible, the veins are not ligated until toward the end of the intervention so as not to cause congestion and bleeding during surgery. Anastomoses between the peripheral branches are carefully preserved whenever possible.

Otto B. Kriens

4 A surgical approach to the ophthalmic-maxillary nerve trunks in the rat. J. M. Gregg (Univ North Carolina Sch Dent, Chapel Hill, North Carolina). *J Dent Res* 52(2):392 March-April, 1973. It is desirable to gain access to nerve branches other than the inferior alveolar branch of the trigeminal nerve. A surgical approach to the retroorbital, and pterygopalatine fossae of the rat for exposure of major ophthalmic-maxillary nerve trunks and their associated autonomic and peripheral nerve branches is described.

Thomas G. Barker

5 The facial nerve in acoustic tumor surgery. Gordon D. L. Smyth (Royal Victoria Hosp, Belfast, Northern Ireland). *Arch Otolaryng (Chicago)* 97(2):152-3 Feb, 1973. A method is described for increasing the safety of the facial nerve in acoustic tumor surgery by using the posterior semicircular canal and the medial aspect of the stapes foot plate as useful landmarks. The nerve is located in its horizontal course immediately superior to the footplate and followed to the lateral end of the internal auditory meatus. Its identity within the meatus and its relationship to the tumor are then apparent. The otolaryngologist can be of significant service to the neurosurgeon in preserving the VIIIth nerve.

Larry J. Peterson

6 The facial branches of the facial artery in adults. Typology, variations and respective cutaneous territories. V. Mitz, B. Ricbourg, and J. P. Lassau. *Ann Chir Plast* 18(4):339-50, 1973 (Fre; summary in Eng). After dissection of 50 facial arteries in adult subjects and comparison of the findings with those obtained by radiopaque and tissue-dye injections, 5 different types of facial artery are described. The "conventional" type is one of the most unusual, while the "nasal" type, found in 78% of samples, seems very frequent: the facial artery terminates at the upper edge of the alar cartilages, into an artery of the ala nasi anastomosing with that of the contralateral side to form the dorsal arch of the nose. The angular artery then seems to be a lower collateral of the ophthalmic artery, rather than an ending branch of the facial artery. Variations are plentiful, as is the left-right asymmetry. Accurate data are provided as regards certain tissue arteries as well as some little described arteries, such as the artery of the nasogenial fold, the A. facialis longa, the neurocutaneous perforating branches of the main arterial trunks, and the premaxillary pedicle. Dynamic consequences of the arrangements found have been analyzed; a "geographical map" of facial skin territories with the main variations has been proposed. Surgical consequences and prospects for facial vascular surgery have been considered.

Lloyd E. Church

7 Vestibuloplasty as related to the mimic musculature. G. H. Schumacher and D. Ivankievicz (Univ Med Sch, Rostock, East Germany). *Fogorv Szemle* 66(4):109-19 April, 1973 (Hun; summaries in Rus and Ger). The anatomy of the mimic musculature is described in detail, and the muscles involved in different types of vestibuloplasty are identified.

P. Adler

8 Surgical anatomy of the submandibular region. V. G. Smirnov (Med Dent Inst, Moscow, USSR). *Stomatologiya (Moskva)* 52(3):12-14 May-June, 1973 (Rus; summary in Eng). The anatomy of muscles, fascia and salivary glands was studied in 50 adult cadavers to investigate the individual differences in the anatomical structures of that region. In 9 of them there were fissures in the mandibulo-sublingual muscles, at the level between the 1st and 2nd premolars, through which purulent exudates could infiltrate. In 4 of these 9 instances the sublingual salivary gland had penetrated into the fissure and in 3 into the submental vein. In 12 cadavers the marginal branch of the mandibular or facial nerves was 4-8 mm below the mandibular margin and in 6 3-6 mm above it. The facial artery is generally situated 5-12 mm from the anterior margin of the masticatory muscle, but in some instances the artery was on that muscle; the artery's length varied from 78-96 mm. Individual variations exist in the topography of the submandibular region which must be taken into consideration during surgery.

Germina Ron

9 **Surgical anatomy of the chorda tympani.** Barry J. Ansen, James A. Donaldson and Bruce B. Shilling (Univ Iowa, Iowa City, Iowa). *Ann Otol Rhinol Laryngol* 81(5):616-31 Oct, 1972. Major features of the anatomy of the chorda tympani are described and profusely illustrated, with special reference to the course and relationships which are of surgical significance.

A. K. Das

Anesthesia

10 **Experiences with general anesthesia in maxillofacial surgery.** I. Dauss (Univ Rostock Med Sch, Rostock, East Germany). *Z Prakt Anaesth* 8(5):304-10, Oct, 1973 (Ger; summary in Eng). Anesthesiology is taking on increasing significance in maxillofacial surgery; this development should be recognized and should lead to increasing interdisciplinary cooperation for the well-being of the patient. Various techniques and a wide choice of anesthetic agents are available. The most frequent application of general anesthesia is in surgery of clefts in infants. This type of surgery can be undertaken with local anesthesia but general anesthesia is assuming preference. Halothane (at first in 1% and later in 0.5-0.75% concentration) is preferred in infants. Tumor surgery in older children is also undertaken with low concentration halothane as the anesthetic, as are operations to correct jaw malformations. Intraoral surgery may be carried out under barbiturate or ethyl chloride anesthesia.

H. Kaye

11 **General anaesthesia for dental surgery.** J. K. Barclay (Univ Otago Dent Sch, Dunedin, New Zealand). *New Zeal Med J* 79(512):816-20 April, 1974. A mail survey of the dental profession was used to determine the role of general anesthesia in extractions in New Zealand. The response rate was 49.6%. Patients of 25% of dentists were given a general anesthetic. Approximately 1 patient in 7 who required dental extractions had teeth removed in this way, including almost all the very young children and considerably more females than males. Dentists operator/anesthetists gave 14% of all anesthetics and specialist anesthetists administered 40%. Sixteen percent of patients were admitted to hospital for dental surgery under a general anesthetic. Inhalation and intravenous methods were used. The majority of inhalation anesthetics were supplemented by halothane. Some expansion of training facilities for both dental and medical practitioners in out-patient anesthesia is desirable to reduce the number of anesthetics administered by the operator-anesthetist.

Grace W. Suckling

12 **Dangerous complications and fatal outcome in the use of general anesthesia in dentistry.** V. A. Dunaevsky, I. N. Mukovosov and V. S. Orlov (Med Inst, Leningrad, USSR). *Stomatologiya (Moskva)* 52(4):82-3 July-Aug, 1973. Two patients are described with complications, and 1 with fatal outcome, after general anesthesia. A 48-yr-old patient was hospitalized because of cellulitis of the floor of the mouth originating in the mandibular left 1st molar. The tooth was extracted. An incision in the floor of the mouth failed to produce pus and the intervention was followed by swelling and infiltration of the floor of the mouth, edema of the tongue, and difficulty of breathing; 2 surgical interventions were performed under general anesthesia with a solution of hexobarbital (Hexenal). The 2nd intervention was followed by asphyxia and the patient could only be saved by tracheotomy. A 41-yr-old patient had cellulitis of the oral cavity. After submandibular incision the patient's condition deteriorated, edema of the tissues of the oral cavity and tongue increased; a pus accumulation in the region of the root of the tongue was suspected. Surgical intervention was performed under general anesthesia with hexobarbital solution. The patient died during the intervention because of hypoxia. In instances of cellulitis of the oral cavity anesthetics with a barbiturate basis, which have a respiratory depressing effect, should be avoided.

Germina Ron

13 **The use of general anesthesia in the dental practice. Opinions and aspects of the Jassy Clinic of Buccomaxillofacial Surgery experience.** G. Timosca and Maria Panicu (Univ Jassy, Rumania). *Stomatologia (Bucur)* 20(2):135-42 March-April, 1973 (Rum; summaries in Fre, Ger, Eng and Rus). By discovery of new anesthetic agents and administration procedures, considerable progress has been realized in general oral anesthetics. Since World War II, general anesthesia has been used in Great Britain not only in complicated oral therapeutics and surgery, but for other, less complicated procedures also. Experiences of the application of various anesthetic methods during many years of surgical interventions at the Jassy Clinic of Buccomaxillofacial Surgery are described. Whenever technical conditions impede the administration of general anesthesia, barbiturate and nonbarbiturate premedication or local anesthesia should be administered. Dental treatment can be given by preanesthesia, base anesthesia, general autoanalgesia, as well as intravenous or intubation general anesthesia. After taking precautionary measures, general anesthesia may be administered, with due attention to its unforeseen risks.

C. T. Jiga

14 **Precautions to be taken during general anesthesia — operative incidents and their treatment.** A. R. Bergeron. *Rev Belg Med Dent* 28(1):57-60, 1973 (Fre; summary in Dut). The aim of anesthesia in orofacial surgery is sedation, analgesia and facilitation of the surgical intervention. The type of anesthesia depends on the age of the patient, the depth of anesthesia required for each type of intervention and the working conditions. Patency of the respiratory tract must be ensured because of the risk of aspiration of blood, mucus or tissue particles. Anesthesia should be as superficial as possible to ensure rapid awakening. A complete physical examination is required before intervention and premedication is given for sedation, reduction of the metabolic rate, irritability and reaction to pain and to neutralize the toxic effect of some anesthetics. Endotracheal intubation is required in orofacial surgery. This entails the risks of lesions of the mucosa of the lips, tongue and palate, the teeth, the mucosa and wall of the pharynx and the sinus pyiformis, the induction of edema of the glottis, damage to bronchi and bronchial impaction with mucus, and cardiac arrest during removal of the tracheal tube. Late sequelae may be laryngitis, bronchitis and bronchopneumonia.

I. S. Levij

15 **Dysrhythmia and oral surgery. II. Junctional rhythms.** J. P. Alexander, S. Bekheit and E. Fletcher (Belfast City Hosp, Belfast, Northern Ireland). *Brit J Anaesth* 44(11):1179-82 Nov, 1972. There is a high incidence of nodal rhythm (51%) and other junctional disturbances during oral surgery under light halothane anesthesia. However, precise location of ectopic foci from surface electrocardiographic leads may be difficult when tachycardia and ventricular aberration are present. Therefore, it was decided to monitor patients using an esophageal electrode to define atrial activity more clearly, so permitting a more confident diagnosis of the mechanisms of disturbances of rhythm during oral surgery. The term junctional rhythm was employed, in accordance with recent experimental electrophysiological evidence, to denote abnormal beats arising above the bifurcation of the main bundle of His and distal to the atrioventricular node whose fibers are not believed to contain pacemaker cells. Twenty-one patients were monitored using esophageal electrocardiography to determine the site of origin of ectopic rhythms occurring during oral surgery. In 12 patients these arose in the junctional system of the heart. One patient developed a bidirectional junctional tachycardia which is considered to be dangerous dysrhythmia. The investigations confirmed the increased automaticity of the atrioventricular junctional tissues during oral surgery under light halothane anesthesia. Because junctional rhythms occurred most frequently during tooth extraction, it appears that reflex stimulation of the cardiac sympathetic nerves played a part in their genesis. When surgical stimulation of the jaw ceased, sinus rhythm was restored. Afferent impulses from the trigeminal nerve endings may stimulate sympathetic nerve centers in the medulla, which results in impulses reaching the cardiac plexus via sympathetic tracts in the spinal cord.

Charles C. Alling

- 16 **Measurement of reaction times during oral surgical interventions under analgesedation.** P. Tetsch (Westf Wilhelms Univ Dent Hosp, Munster, West Germany). *Deutsch Zahnärztl Z* 28(5):618-22 May, 1973 (Ger; summaries in Eng and Fre). The reaction times to optical or acoustical stimuli and the time necessary to choose between different optical and acoustical signals were determined in 15 patients who underwent oral surgical interventions under local anesthesia, after premedication according to the method of analgesedation; this consisted of pentazocine (Fortral) 0.03 g and diazepam (Valium) 0.01 g intramuscularly. The reaction times were measured repeatedly before and after premedication, during the intervention and in the postoperative period. There was a significant increase in each of the 3 reaction times studied for up to 90 min postoperatively. In addition, the patients showed an uncertain gait, with a positive Romberg phenomenon and disturbed coordination. This demonstrates that such patients cannot be released from the hospital immediately after surgery if no provision has been made for them to be escorted home. Furthermore, the patient should be warned against alcohol intake shortly after analgesedation, as this may cause intensification of the untoward effects. 26 references. I. S. Levij
- 17 **Relief of respiratory obstruction by intubation without the aid of general anesthesia.** I. R. Lang (Empilweni Hosp for Bantu, Port Elizabeth, C P, South Africa). *S Afr Med J* 47(47):2301-3 Dec 1, 1973. Polyvinyl chloride tubes of the Jackson Rees design are used, with a cross-piece of wide tubing for connection to a ventilator if necessary. This meets the lumen of the vertical tube of narrower dimension. The part below the cross-piece passes through the nose into the trachea. The short end above the cross-piece is plugged by a spigot which can be removed for endotracheal suction. Forty-nine instances of intratracheal intubation without the aid of general anesthesia are described. Tubes were selected of a diameter large enough for adequate ventilation, but sufficiently loose-fitting to prevent laryngeal trauma. The tubes were passed through the nostril into the nasopharynx and into the trachea with the aid of Magill's forceps and a laryngoscope. All instances of intubation afforded immediate relief from obstruction. The initial 35 patients were nursed in a steamy atmosphere and the other 14 in the humidified O₂ tent. Twenty-one patients died from the severity of the illness in the absence of respiratory obstruction. One patient died through premature extubation. Given the necessary guidance and experience, intubation is an asset in overcoming respiratory obstruction in the least possible time and leaves no unsightly scar. A. G. Farman
- 18 **Controlled hypotension in dental practice and otorhinolaryngological interventions under anesthesia.** N. G. Popov, P. V. Sergienko, E. A. Ermakov and E. I. Taranin (Regional Hosp, Voronezh, USSR). *Stomatologiya (Moskva)* 52(1):23-5 Jan-Feb, 1973 (Rus; summary in Eng). Controlled hypotension was carried out in 149 major surgical interventions (maxillary and mandibular resection, removal of tumors from the paranasal sinus, radical surgery of the maxillary and frontal sinuses, etc). The lowering of arterial pressure was started immediately after the beginning of anesthesia. Each patient's pulse, arterial and venous pressure, blood circulation, O₂ saturation in arterial blood and electrocardiograph and electroencephalograph recordings were studied before, during and after the intervention. After intravenous injection of ganglion blocking agents, trimetaphan (Arfonad) and Imekhin, systolic pressure decreased to 100 mm in 12 patients, to 90 mm in 40 patients, to 80 in 45, to 70 in 38 and to 50 mm in 1 patient. The postoperative course was uneventful in all the patients. The blood loss under controlled hypotension decreased by 35% in comparison with the usual endotracheal anesthesia and by 45% in comparison with local infiltration anesthesia. Germina Ron
- 19 **Anesthesiological aspects of maxillofacial traumatology.** Jozsef Hamori, Geza Arday and V. Maklar (Univ Med Sch, Debrecen, Hungary). *Orvoskepek* 48(4):284-6 July, 1973. The problems encountered by the anesthesiologist, when collaborating in surgical treatment of trauma of the maxillofacial region, are reviewed. Blind intubation is strongly contraindicated and dangerous. For intubation, intermaxillary fixations of jaw fractures should be removed temporarily. In polytraumatized patients, fixation of jaw fractures is usually postponed by not more than 1 wk, and surgical treatment is only given to secure the patient's life. During intubation through the mouth, jaw fractures may incur further dislocations that must be prevented by proper manual fixation of the fragments. P. Adler
- 20 **Drug-dependent, alcohol-dependent, and mental patients: clinical study of oral surgery procedures.** Ron Williamson and C. L. Davis (Corpus Christi State Sch, Corpus Christi, Texas). *JADA* 86(2):416-9 Feb, 1973. A clinical study was conducted to dispel some of the myths about oral surgical procedures for drug-dependent, alcohol-dependent and mental patients. The study was conducted during a 6-month period with approximately 3,620 patients and oral surgical procedures performed on 729 patients. Of 124 drug-dependent-patients, oral surgical procedures were accomplished with local anesthesia. Operative management was without any particular problems, but management during postoperative care was difficult and the amount of control needed was found to be related to the type and severity of the patient's dependence. In the category of alcohol-dependent patients, 387 were treated for oral surgical procedures. For most patients with long histories of chronic alcoholism, a significant increase in the quantity of anesthetic was needed. In comparison with drug-dependent patients, management of the alcohol-dependent patients was more difficult because of their severe depression, anxiety and muscle trismus. In the category of mental illness, 218 were treated for oral surgical procedures. The schizophrenic patient exhibits the most difficult patient-management problems. At no time should any treatment be performed without the patient's complete consent and willingness. Long treatment procedures should be avoided and the use of psychosedation or chemotherapy is necessary for successful dental treatment. All patients were treated with local anesthesia and its effectiveness was within expected limits. R. P. Thye
- 21 **Maxillary nerve block: a useful technique.** Thomas E. Poor and Francoise M. T. Carney (Mayo Clin, Rochester, Minnesota). *J Oral Surg* 31(10):749-55 Oct, 1973. A detailed extraoral approach is described for achieving regional analgesia of all regions supplied by the maxillary division of the trigeminal nerve. Several advantages are listed for this technique over general anesthesia, especially in the surgical risk patient. Contraindications and possible complications are discussed, and it is suggested that the procedure be performed only in a facility with proper resuscitative equipment. This is a useful procedure that can be of value to practitioners of several surgical specialties. J. R. Wightman
- 22 **Complications following anesthesia of dental patients.** V. S. Starodubtsev and V. M. Balagin (Central Inst Postgrad Med Studies, Moscow, USSR). *Stomatologiya (Moscow)* 52(4):67-9 July-Aug, 1973. Various complications after anesthesia for minor ambulatory dental interventions were analyzed in 174 patients; 148 patients (I) received Fluorform with HNO₂ and O₂, 11 (II) received trichlorethylene with HNO₂ and O₂, and 15 patients (III) received propanidid (Epontol). The postanesthetic complications were chill (6.77% in I, 0.44% in II, and 3.84% in III), vomiting (2.75% in I and 0.73% in II), temporary laryngospasm (1.86% in I and 1.44% in the III), and collapse (0.98% in I and 0.44% in II). Measures for the prevention of complications are indicated. The analysis showed propanidid to be the least dangerous of the intravenous anesthetics. Germina Ron

- 23 Anesthesia and reanimation in operations for diseases and injuries of the tongue and the oral cavity bottom.** N. M. Alexandrov and K. P. Shvedov. *Vestn Khir Grekov* 112(4):88-92, 1974 (Rus; summary in Eng). An analysis was made of clinical observations (304 operations), conducted during 1955 to 1972, on application of various kinds of anesthesia in surgical procedures on tissues of the oral cavity floor, tongue and lateral portions of the pharynx. Considerable peculiarities relative to specific topographic disposition, anatomical structure and function of tissues of the oral cavity bottom, tongue and lateral pharyngeal portions were demonstrated. Knowledge of these peculiarities could lead to avoidance of some complications during the operation and postoperatively. Author Abstract
- 24 The effects of vasoconstrictors in surgical interventions under local anesthesia.** L. Pässler and K. Neumann (Carl Gustav Carus Med Acad, Dresden, East Germany). *Deutsch Stomat* 23(3):187-92 March, 1973 (Ger; summaries in Rus and Eng). Pulse rate and blood pressure were recorded in 50 patients during Caldwell-Luc interventions. The effect of epinephrine and levarterenol, when added to lidocaine (Xylocitin), was evaluated in hypertonic and normal patients. The results of the investigations were evaluated statistically. Levarterenol leads to acute rise of both diastolic and systolic blood pressure especially in hypertonic patients, yet pulse rate was not different from normal patients. The indication of levarterenol and the special importance of endogenous epinephrine release are discussed. Anna Plackova
- 25 Anesthesia for operations on the upper airway.** Anthony C. Webster *Int Anesthesiol Clin* 10(3):61-122 Fall, 1972. The fundamental principles of anesthesiology are reviewed and applied to surgery of the airway in the head and neck. Special considerations for otolaryngology, oral surgery, and plastic surgery are outlined. A balance between the desires of the surgeon and the needs of the anesthesiologist is struck. Larry J. Peterson
- 26 Anesthesia with ketamine (Ketalar) in oral and maxillofacial surgery.** L. Haisova, J. Mazanek (Charles Univ, Prague, Czechoslovakia). *Cesk Stomatol* 73(1):24-6 Jan, 1973. Pharmacological properties of the general anesthetic Ketamine (Ketalar) and its use in dental and maxillofacial surgery in children and adults, administered intravenously or intramuscularly, are described. Ketamine is a valuable contribution to modern anesthesiology, especially suitable for interventions in children. A. Kraus
- 27 The problem of treating uncooperative children in pedodontics.** J. Ramba (Charles Univ, Prague, Czechoslovakia). *Prakt Zub Lek* 21(2):54-8 Feb, 1973. Difficult children in the pedodontic clinic of Charles University, Prague, are hospitalized 1 day before dental treatment, examined for their general state of health, and premedicated to reduce salivation. Treatment is mostly performed under general anesthesia with ketamine (Ketalar) injected intravenously or intramuscularly, with the child in a recumbent position, and using a small throat pack so as not to obstruct respiration. The mouth is kept open with Whitehead's forceps. First conservative treatment, then surgical intervention are carried out; the pockets are sutured and, if necessary prosthetic impressions are taken. Finally, the gauze is removed from the back of the mouth, the wounds covered with sterile swabs, and an adhesive dressing placed around the mouth up to the saddle of the nose to keep the swabs compressed until full consciousness has been regained. The child remains under intensive care until full recovery, and is usually not discharged until the next day. A. Kraus
- 28 Anesthetic contamination.** Anon. *Brit Med J* 1(5855):693-4 March 24, 1973. Evidence that operating theatre staff may be at special risk from atmospheric contamination with anesthetic gases includes a 30% rate of spontaneous abortion in nurses employed in operating theatres compared with 9% of nurses on general duties, and an even more striking 38% in women anesthesiologists compared with a 10% rate in a control group of women physicians in other specialties. A higher rate of reticuloendothelial malignancies also have been reported in American anesthesiologists. Hepatitis in anesthesiologists has been attributed to subanesthetic concentrations of halothane in the operating theatre atmosphere which may reach 9 ppm in some instances. It is not sufficient to vent the air to the outer atmosphere; the use of disposable cannisters containing activated charcoal is advocated. Ian Rannie
- 29 A new method for the elimination of pain during extra-oral opening of abscesses.** K. D. Brockmüller and N. Schwenzer (Univ Dent Hosp, Tübingen, West Germany). *Deutsch Zahnärztl Z* 28(10):1004 Oct, 1973. Extra-oral opening of abscesses requires preparation in layers with ligation of vessels, wide opening, evacuation of the abscess cavity, and satisfactory drainage. Good anesthesia is a prerequisite. When possible the patients receive premedication the night before the intervention with nitrazepam (Mogadon) 0.01 g orally or benzocaine (Tactin) 0.02 g orally. Forty-five minutes preoperatively droperidol (Thalamonal) 2 ml and atropine 0.0005 g are given intramuscularly, and 5 min preoperatively benzocaine 0.02 g intravenously within 15 sec. After 4-5 min pentazocine (Fortral) 0.06 g is given intravenously within 1 min. In some patients, additional small doses of diazepam (Valium) are necessary, up to 0.005 g. Of 82 patients who received this type of anesthesia, 61 felt nothing during intervention; 12 others showed no reaction, but afterwards they stated that they had felt the procedure. In 9 there were defense reactions during intervention, but it could be concluded without additional anesthesia. I. S. Levij
- 30 Surgical treatment of pain in the jaws and face in incurable tumors.** R. Schmidseider and G. Busch (Univ Dent Hosp, Mainz, West Germany). *Deutsch Zahnärztl Z* 28(10):1005-8 Oct, 1973 (Ger; summaries in Eng and Fre). In most instances, pain in the jaws and face in incurable tumors can be eliminated with a combination of centrally-acting analgetics including opiates and sedatives and hypnotics; however, in some patients, the pain is so intense that even higher and frequently repeated doses give no relief, and surgical treatment must be considered. The methods are those used in surgical treatment of neuralgia of the involved nerves. Preoperatively, the effect must be tested by anesthetizing the nerve. Peripheral interventions also may be useful. The technique used most commonly is that of exeresis of the nerve; an advantage is that the intervention can be performed with the patient under local anesthesia. In 2 patients with carcinoma of the mandible and a poor general condition because of intractable pain, this method was used successfully; in both patients, the pain disappeared and did not return before death, 3 and 5 months postoperatively, respectively. In 2 other patients with extensive carcinomas of the mandible and the maxilla, the Gasserian ganglion was electrocoagulated with good effect and without recurrence of the pain before death, 2 and 6 months later, respectively. The method used was that of controlled, fractionated, partial electrocoagulation of the ganglion in neuroleptanalgesia. 21 references. I. S. Levij
- 31 Ketamine anesthesia and intranasal or intraoral operations.** W. M. Bryant. *Plast Reconstr Surg* 51(5):562-4 May, 1973. Ketamine HCl is examined as an anesthetic agent in intranasal and intraoral procedures. The advantages of the drug which have popularized its use can also lead to precarious circumstances when blood or secretions pool in the pharynx. Three case reports demonstrating airway difficulties encountered with the drug are described. The use of ketamine anesthesia is contraindicated in intranasal or intraoral surgical procedures. Laurence H. Rubin

- 32** Cryosurgery of the oral mucosa: A study of the mechanisms of tissue damage. D. K. Whittaker (Welsh Nat Sch Med Dent, Cardiff, Wales). *Dent Pract (Bristol)* 22(12):445-51 Aug, 1972. Controlled experiments on hamsters and mice were carried out to determine the effects of freezing at minus -70°C for 1 min, on the blood flow, structure of the vessels and the epithelium of the sublingual mucosa and cheek pouches. The results were evaluated by the histology of the clearance of C particles from the micro-circulation, electron microscopy of cellular damage and by comparison of photographs of transparent cheek pouch chambers. C clearance was delayed by freezing, the permeability of the vessels was increased and stasis occurred after 2 hr. It was thought that this was the primary cause of the lesions rather than the temporary initial stasis caused by freezing. 34 references. A. J. MacGregor
- 33** Efficient cryotechnical methods and implements for selective tissue destruction. F. D. Ernst, P. Gängler and W. Pilz (Carl Gustav Carus Med Acad, Dresden, East Germany). *Deutsch Stomat* 23(2):136-40 Feb, 1973 (Ger; summaries in Rus and Eng). Various techniques of selective tissue destruction with extremely low temperatures are described. The relationship between the efficiency of instrumental parameters and several process variants are discussed. Special attention is paid to methods suitable for application of cryosurgery in the oral cavity. A hand applicator with a N_2 reservoir was used in the clinical-experimental investigation in intravital gingivectomy. This method seems to be the most suitable for intraoral application. The experimental results are demonstrated in thermometric measurements. Anna Plackova
- 34** Cryosurgery of oral white lesions. Marvin E. Chapin and E. Jeff Burkes, Jr. (Univ North Carolina, Chapel Hill, North Carolina). *J Oral Surg* 31(8):584-91 Aug, 1973. Therapy by cryosurgery relies on local tissue necrosis, produced by rapidly achieved, extremely low temperatures. Currently, the most favorable agent used to produce cryogenic necrosis is liquid N under pressure, which provides a temperature range of from 37°C to -196°C . Four representative patients with white lesions of the oral cavity to illustrate the usefulness of cryosurgery. A 50-yr-old white woman who was receiving warfarin sodium (Coumadin) as treatment for a cellulitis of her legs required dental extractions and the treatment of a small rough whitish plaque in the floor of the mouth adjacent to the lingual frenum. The central area showed ulceration. A biopsy indicated epithelial dysplasia. Treatment consisted of 2 freeze-thaw cycles with a $1 \times 1 \text{ cm}$ Au cryoprobe adapter-tip for 60 sec each at a temperature of 160°C . After 5 wk the area was completely healed with no evidence of scarring. The 2nd patient, a 46-yr-old woman, had a whitish area on the ventral surface of the tongue. The diagnosis of this tissue was mild epithelial dysplasia. Because of the diffuse nature of this lesion, cryosurgery was preferred after local anesthesia had been infiltrated. A Ag cryoprobe was applied and the temperature reduced to -180°C for 60 sec. After the initial thaw, a repeat freeze-thaw cycle was performed at the site. Subjective postoperative reaction consisted of moderate interference with normal speech and moderate to mild pain. This was relieved with buffered aspirin. The area of slough extended well beyond the clinical limits of the original lesion. The postfreeze healing was uncomplicated. The 3rd patient had a whitish lesion of the lower lip and the 4th a long-standing lesion of leukoplakia of the tongue. In both patients cryosurgery led to successful resolution of the lesions. Dysplasia is considered a premalignant condition and may also appear clinically as a whitish lesion. Cryosurgery, like scalpel surgery or electrosurgery, has advantages and disadvantages. Some of its advantages include a lessened pain or discomfort during the postoperative period than with other surgical methods. The areas treated with cryosurgery healed with a soft pliable new growth of tissue and an absence of dense scar. Sequestration was not a problem when bone was frozen during treatment for lesions of the hard palate or alveolar ridge. Bleeding was minimal and lesions that were not destroyed by initial treatment were successfully eliminated by subsequent treatment. These advantages serve to make cryosurgery the preferred modality for treating patients who classify medically as poor surgical risks. Among the disadvantages is the fact that currently, the standard cryoprobe lacks flexibility and adaptability to certain contoured and relatively inaccessible regions in and around the oral cavity. Liquid N is not easily stored or readily available when needed. The average length of time for healing is 2 to 3 wks longer than that for scalpel surgery. Pigmentation of tissue is frequently altered or destroyed by cryosurgery. N. Trieger
- 35** Application of low temperatures in oral surgical procedures. Grazyna Jarzab (Med Sch, Lublin, Poland). *Czas Stomat* 25(10):925-9 Oct, 1972 (Pol; summaries in Rus and Eng). The exact mechanism of low temperature treatment is not yet known. It is suggested that during repeated freezing of the tissue, ice crystals are formed in the intercellular substance and later in the cells and cause osmotic imbalance, toxic concentrations of electrolytes, change the cell pH and damage the protein-lipid complex. Twenty-four hours after the freezing, a hyperemia in the tissue ensues which together with the metabolic changes causes demarcation of the necrotic tissue. The lesion detaches 3-10 days after the freezing and healing follows without complication. Treatment consists of repeated application of a metal cryoapplicator cooled by fluid CO_2 down from -60° to -75°C , 30-120 sec each. This method is useful for the treatment of hyperplastic changes of the oral mucosa such as papilloma or fibroma. This procedure is preferable as it is painless, easy to perform and yields good results. Two instances are reported. Ilana Brunn
- 36** CDA assists in oral surgery performed under acupuncture anesthesia. Edna Johnson. *Dent Assist* 42(5):16, May, 1973. A report of the use of acupuncture in an oral surgical procedure. Joan Keisel
- 37** Oral surgery under hypnosis. Some case reports. P. O. Wikström. *Tandlakartidningen* 64(23):777-81 Dec 1, 1972. Six instances are reported in which oral surgery was performed under deep hypnosis. There was no pain during the surgery, and no postoperative edema or pain. The surgical procedures performed included extraction of erupted teeth, impacted teeth, gingivectomy and apicoectomy. L. B. Johannessen
- 38** Intravenous sedation in oral surgery. A report on 1,142 cases using diazepam. N. Bruce Litchfield (Univ Sydney, Sydney, Australia). *Aust Dent J* 17(6):429-33 Dec, 1972. Diazepam given orally provides reasonably good sedation for oral surgery procedures, but the intravenous route is preferred because of speed, reliability and ready determination of dosage. The effectiveness of diazepam sedation on 1,142 oral surgery patients was assessed by classifying them as severely apprehensive, moderately apprehensive and calm, categorizing 3 advantages of the procedure (lack of stress, discomfort and memory of the operation, amount of work done in one session and relaxed working conditions) and classifying the results of the operation as good, moderate or poor. Eighty-six children (3-12 yr), 326 adolescents (12-19 yr) and 730 adults (20-87 yr) were studied (552 males and 590 females). Premedication with 5 mg of diazepam orally was sometimes used. Disposable 5-ml syringes and 25-gauge needles or intravenous sets were used, and 20 mg diazepam with 0.6 mg atropine sulfate administered at a rate of 5.0 mg diazepam/min. Sedation was indicated by slurred speech, blurred vision and partial or complete eye closure. Local anesthesia was then administered. There was little difference between males and females, good and moderate results being obtained with 88% of children, 96% of adolescents and 98% of adults. Provision of resuscitation equipment, trained staff, an hour of post-operative supine rest and accompaniment home are essential. The degree of amnesia obtained is particularly advantageous for the apprehensive patient. 16 references. Barrie R. D. Gillings

39 Anesthesia by electropuncture. A. Limogee. *Inform Dent* 54(47):4637-9 Nov 23, 1972. Electricity, associated with various drugs, has been used extensively in anesthesia for major surgical interventions lasting from 2-7 hr. The need for drugs has been reduced considerably, not only during surgery, but also during the postoperative period. The patients had only a vague recollection of the intervention and slept the following night without a hypnotic. An arteriovenous shunt technique is described in which initial anesthesia was induced by a mixture of perimetazine, phenoperidine and diazepam. Electrodes were then applied and the intensity of the current was increased gradually until anesthesia could be maintained without additional drug administration during the 3-hr intervention. The patient awoke immediately after the electric current was shut off. Continuous electrocardiography during surgery was prolonged for 24 hr postoperatively. The type of electric current used does not provoke contracture, so the use of muscle relaxants was avoided. Among the problems which remain to be solved is the hypothermia developing during surgery followed by intense shivering. Minnie Bagus

40 Acupuncture anesthesia in surgery for trigeminal neuralgia. H. L. Wen and S. Y. C. Cheung (Kwong Wah Hosp, Kowloon, Hong Kong). *Amer J Acupuncture* 1(3):105-7 July-Sept, 1973. Neurological examination of a man, aged 63 yr, who had experienced intermittent right facial pain for 10 yr, and had been treated with carbamazepine (Tegretol) for 4 yr for temporary relief, revealed a trigger point at the right side of the mandible. He was given daily acupuncture therapy for a month in a Hong Kong hospital. Subsequently, right temporal craniectomy was performed under acupuncture anesthesia for the removal of a bony spur projecting into the Meckel's cavity pressing on the gasserian ganglion. The patient experienced no pain except when the deep structure was touched. Anesthesia obtained under acupuncture and electrical stimulation procedure was comparable clinically to local anesthesia. John M. Grewe

41 Sedation with intravenous diazepam. E. J. Driscoll, Z. H. Smilack, P. M. Lightbody and R. D. Fiorucci (Nat Inst Dent Res, NIH, Bethesda, Maryland). *J Oral Surg* 30(5):332-43 May, 1972). A survey was undertaken of the practical benefits of undergoing surgical procedures under local anesthesia complemented by diazepam sedation. Of 77 individuals who required removal of impacted teeth, multiple extractions or routine alveolectomies, 62 had paired or nearly identical interventions which were performed at separate sittings. The 1st intervention (control) was conducted with the use of local anesthesia alone and the 2nd with diazepam sedation used in conjunction with local anesthesia. The concurrent surgical trial involved 15 unpaired subjects receiving diazepam only. Blood pressure, pulse, electrocardiogram and respiration were checked throughout. The drug was administered intravenously at the rate recommended by the drug manufacturer. When half-way ptosis (Verrill's sign) was achieved, a final assessment of the drug action was made. The dose had varied from 12.5 to 30 mg. Psychomotor tests were conducted postoperatively. The conclusions reached from this intensive clinical study were that diazepam medication had no clinically significant effect on blood pressure, heart rate or rhythm or respiratory rate. Good sedation and relaxation was achieved with minimal side effects and complications. A considerable number of patients experienced amnesia for the respective surgery when tested 1 hr postoperatively. L. W. Kay

Cleft Surgery

42 A review of the treatment methods in cleft lip and cleft palate. R. Van Clooster (Acad Hosp, Ghent, Belgium). *Rev Belg Med Dent* 27(3):334-44, 1972 (Dutch; summary in Fre). Clefts in the lips and palate are caused by lack of fusion of 1 or more of the 5 embryonal processes in the facial region during the 1st trimester of pregnancy. Clinically, various combinations of faulty development of the primary (lip and alveolar process) and secondary palate (incisor foramen up to the uvula) may be observed; minor forms show only a slight dimple in the lip, and in the most severe forms there are bilateral clefts involving the lip as well as the palate. The etiology is unknown, and different factors have been proposed. In most instances hereditary factors appear to play an important part, and the genetic factor may be dominant as well as recessive. The patients should receive immediate orthodontic treatment, when possible within a few weeks after birth, to regulate the growth of the jaws and to close the palatal cleft with a simple plate; this facilitates feeding, and prevents chronic infection of the nose and the middle ear. Clefts of the lip should be treated 3-6 months after birth, and clefts of the palate after 20 months. Lip clefts are closed according to the techniques of Millard and Tennison; in these techniques a Z-shaped incision is made either in the lateral or medial part of the upper lip, and the incision is closed as far as possible without tension. In bilateral cleft lip it is sometimes necessary to use a bone transplant to close the defect in the alveolar crest. Wardill's technique is used for closure of palatal clefts; 2 mucoperiosteal flaps are prepared, which remain connected to the palatal artery dorsally, and which are moved medially and sutured. In some instances collapse of the maxilla causes prognathism and makes a secondary osteoplasty necessary at a later age (16 yr). When the opening between the oro- and nasopharynx remains too large, the patient has a nasal speech (also after closure of the palatal defect), and pharyngoplasty is indicated. It is most important that all patients receive logopedic training after palatal surgery to learn correct speech techniques. I. S. Levij

43 Some current treatment procedures for cleft lip and cleft palate. K. Bamberadeniya. *Ceylon Dent J* 3:5-9 Dec, 1972 (Eng). The anatomical defects known as cleft lip and palate and their possible etiology are examined briefly. The contributions of surgery for repair of the lip and palate, of prosthodontics for construction of obturators, of speech therapy for improving defective sounds, and of understanding friends and family are described. Larry J. Peterson

44 Healing process and complications after surgical closure of cleft lip, jaw and palate. W. Bethmann, R. Frommholdt and A. Grimm (Clin Plastic and Reconstructive Maxillofacial Surg, Thallwitz, East Germany). *Deutsch Stomat* 23(9):633-6 Sept, 1973 (Ger; summaries in Rus and Eng). A control examination and evaluation of treatment success was performed on 600 cleft lip patients and in 830 instances of primary plastic surgery in cleft palate, treated from 1957-1969. Results show that 32 out of 600 (5.33%) surgically closed cleft lips showed dehiscences (24 partial and 8 complete dehiscences). After treatment, 21.16% of these infants had subfebrile temperatures and in 4.33% the temperature had risen. The hospitalization time varied from 11 to 20 days. In 17% of patients weight remained constant, whereas 53.5% gained weight and 29.5% lost weight. In 3.61% of the 830 patients with primary cleft palate who had undergone surgery, the closure was incomplete. Most patients were provided with prophylactic antibiotic treatment. Anna Plackova

45 Clinical problems of congenital abnormalities. Cleft lip-cleft palate. P. Kakaras. *Iatriki* 23(1):98-102 Jan, 1973. The classification adopted by the International Association of Plastic and Reparative Surgery for cleft lip and cleft palate is given. The preferred time for surgical treatment is the age of 3 months for the cleft lip, 12 months for cleft of the soft palate and the first weeks of life for combined cleft lip and cleft palate. Anomalies and deformities which may remain or develop after surgical treatment are discussed briefly and the possible treatment of these defects is described.

J. Hatziotis

46 Intra- and postoperative complications in surgical repair of clefts in infancy. Dietrich Schettler (Univ Clin Maxillofacial Surg, Westdeutsche Kieferklinik, Dusseldorf, West Germany). *J Maxillofac Surg* 1(1):40-4 March, 1973. A report is made on 414 complications which arose during and after surgical repair of cleft lip and palate in 1,565 infants operated from 1953-1969 in the Clinic for Maxillofacial Surgery, Dusseldorf. Until 1969, the proportion of complications averaged 26.5%, but, in the last 5 yr, this number was reduced to 8.5% due to precautionary measures, change of operative technique, and careful intra- and postoperative controls of blood gas and acid base balance. Operative mortality (13 of 1,565) dropped to 0.8%. From 1966-1971, not a single death of 440 cleft repairs in infancy was registered. To diminish intra- and postoperative complication in the past 5 yr, the preoperative nutritional abstinence for infants was reduced to 4 hr, and approximately 250 ml of Glucose-Ringer's solution was infused in the ratio of 4:1 to compensate for the omitted meal, irrespective of blood loss. A continuous electrical temperature-control was maintained during operation, and at the same time, the arterial blood gas and acid-base balance was determined. Base deficiency is normalized with injections of Na bicarbonate.

Edward C. Hinds

47 Surgical correction of the deformed maxilla in adult patients with cleft lip, jaw, and palate. P. Egyedi (State Univ, Utrecht, The Netherlands). *Nederl T Geneesk* 117(25):950-3 June 23, 1973. Possibilities of correcting the deformed maxilla in adults who at an early age have been subjected to surgery for cleft lip, jaw, and palate, are examined. Two instances are reported.

Frans P. G. M. van der Linden

48 Alveolonasopalatal secondary osteoplasty in the sequelae after congenital clefts of the palate. O. Iliescu, G. Stanicioiu and R. Belcescu (Milut Hosp Dent Clin, Bucharest, Romania). *Stomatologia (Bucur)* 19(6):517-23 Nov-Dec, 1972 (Rum; summaries in Fre, Eng and Rus). A study was conducted on a series of patients with secondary osteoplasty has been necessary in some instances as a consequence of the dilation of the jaw, which led to the development of a oronasal fistula. A modified surgical technique of the Pfeiffer method is recommended. For the present, the results were the best that could have been expected, but further developments have to be made to prevent these malformations.

C. T. Jiga

49 Modern views on treatment of clefts of the upper lip, the alveolar process and palate. Wiesława Perczynska-Partyka (ul Kopcinskiego 22, Lodz, Poland). *Czas Stomat* 26(5):547-52 May, 1973 (Pol; summaries in Rus and Eng). The modern tendency is to let a team treat cleft-lip patients because the treatment given formerly by surgeons proved unsatisfactory. The specialists in the team are an orthodontist, a surgeon, a pediatrician and a speech therapist. Simultaneous participation of the team in the whole treatment rather than successive treatment of the patient by one specialist at a time is preferable for the full cooperation of all the specialists.

Ilana Brunn

50 Esthetic aspects in the treatment of complete clefts. W. Koberg (Westdeutsche Kieferklinik, Dusseldorf, West Germany). *Zahnärztl Prax* 24(15):402-6 Aug 3, 1973. Esthetic rehabilitation in patients with complete clefts aims to achieve symmetry with the opposite side, construction of an ideal lip-height, maximum possible preservation of structures to preserve the philtrum, release from tension of the lower third of the lip, especially of the vermillion margin to obtain the important pouting effect, almost invisible cicatrization, accurate esthetic shaping of the margin and avoidance of cicatricial deformity and plane fixation of the upper lip to the gingiva of the alveolar ridge. To avoid a long upper lip postoperatively in bilateral cleft-lips, an arched, lateral-convex incision without Z-plasty is preferred. It is stressed that the long-term rather than the immediate result of the operation is decisive for esthetic judgment. Correction of nasal deformity is of peculiar difficulty. To avoid endangering growth, concessions must be made for the bow of the ala and the accentuation of the nose tip. Esthetic demands for the shape of the nose include accurate symmetrical position of the ala and well balanced alar base (by positioning the triangular alar flap into an incision behind the columella and correction of the deflected columella). Further esthetic aims in the shaping of the nose should be achieved by later surgical correction. They include correction of the unilateral flattened tip, kink in the ala, intranasal obstructions and of the deflected septum. In closing of the palate, alignment of the premaxilla must be stressed. Final esthetic aims can often be achieved only in adult life, by means of prosthodontics. The esthetic goal of palatoplasty are a smooth, scar-free epithelial cover without perforation and a well shaped uvula.

Hubert G. Stieve

51 New concept of the surgical treatment of soft palate clefts. Cardoso da Tocha. *Rev. Port Estomatol Cir Maxilofac* 12(3-4):69-81 July-Dec, 1971. Although the anatomic, physiologic and psychologic problems of patients with soft palate clefts have been solved to a great extent, the problems concerning the Passavant's bar have not been solved phonetically. Several methods of treatment were tried, but reexamination of these patients showed that some phonetic were still noticeable. A new method was devised, and was used successfully on 82 patients. The surgical technique involves dissecting and approaching, in an anterior and superior direction, the palatopharyngeal muscles of the posterior pillar of the tonsils. An active muscular sphincter is obtained, dynamic and effective for nasopharyngeal closure, avoiding an open rhinolalia. An artery on the base of the uvula is ligated. As for innervation, the anastomosis which the vagus nerve gives to the facial and which this sends to the sphenopalatine ganglion reaches the muscles of the soft palate through the posterior palatine nerve. The nerve fibers of the vocal chords have the same origin. Now the contraction of both palatopharyngeal muscles approaches the posterior borders of the pillars, reduces the isthmus of the fauces and increases the retropulsion of the velum. The advantages of this intervention are: better phonetic results; surgery does not go against the normal structures of the operated region; no muscles have to be sectioned; normal surface anatomy is maintained, avoiding psychological problems for the patient; the suture of the nasal plane is accomplished easily because there is no tension at the uranostaphylorrhaphy; no prostheses are needed to lengthen the soft palate; all procedures are done in one surgical intervention; and complementary pharyngoplastics is avoided. This method can be used for clefts of the incomplete secondary palate, but it is primarily used for complete clefts with wide spacing. If needed at a later time, a tonsillectomy can be performed.

Hans Freudenthal

52 Animal experiments in relation to medical prophylaxis of congenital cleft palate. J. Schubert. *Deutsch Zahn Mund Kieferheilk* 59(7-8):217-26 Oct, 1972 (Ger; summary in Eng). The causes and prophylactic intervention of cleft palate are reviewed and discussed. The material used and the research technique are presented in table form together with the results.

R. P. Steigerwald

- 53** **Rehabilitation of congenital cleft palate.** V. Mulfay and Ecateriana Puskas (Univ Tigu Mures, Romania). *Otorinolaringologie* 18(5):359-65 Sept-Oct, 1973 (Rom; summaries in Fre, Ger, Eng and Rus). The symptoms of congenital cleft palate include stagnation of nasal secretion, hypoxia, hyposmia, anorexia, asphyxia during sleep, hypoplasia of the nasal cavities and of the paranasal sinuses, and dysphagia. Normal oral functions are considerably impeded. Complications may occur in patients arising from respiration problems generated by the cleft, chronic rhinitis, and stenosal nasal malformations. In the complex rehabilitation program of cleft palate patients, retraining in nasal respiration should be included. 26 references. A. Stan
- 54** **Cleft lip and palate: therapy and prevention.** Samuel Pruzansky (Univ Illinois at the Med Center Abraham Lincoln Sch Med, Chicago, Illinois). *JADA* 87(5):1048-54 Oct, 1973. Clefts of the lip or palate or both (I) are one of the most common major birth defects. They pose a multifaceted problem: medical, dental, social, emotional, educational, and vocational. Research at NIDR in this area has 2 main goals: to improve methods of diagnosis and treatment and to extend the benefits of these methods to the greatest number of patients; and to support investigation into the causes and mechanisms of I. Research done in the past has identified and defined many genetic and environmental factors which cause I. The tendency to group all I together without discrimination has been the greatest drawback to clinical, genetic, and epidemiologic research. Current research points to a multifactorial threshold system as the most frequent cause. The ability to change any one of these factors could shift development back to the normal side of the threshold. More comprehensive and multi-disciplinary surveillance of patients with I is needed. Identification of syndromes in children with I is directly proportionate to the sophistication of the personnel in contact with the patients. One approach to future care and training is to pool the personnel and facilities in a given geographic area to provide optimal care, better record-keeping, and improved research. Jack L. Stewart
- 55** **Submucous cleft palate and its participation in the developmental shortened palate syndrome.** M. Fara, J. Hrivnakova and E. Sedlackova (Charles Univ Med Fac, Prague, Czechoslovakia). *Rozhl Chir* 50(11):555-63 Nov, 1971 (Cze; summaries in Rus and Eng). The most important feature of the submucous cleft palate is the speech defect resulting from incomplete palatopharyngeal closure caused by the short and insufficient palate. Eighty-three patients treated surgically for submucous cleft palate were evaluated. Diagnosis, differential diagnosis, incidence, historical data, clinical material, therapeutic interventions, anatomic and histologic findings, postoperative complications and phonation before and after surgery are discussed. The surgical procedure of choice is considered to be repositioning of the palate and reconstruction of the muscle ring combined with pharyngofixation by a superior pedicle flap. Pre- and postoperative speech therapy is essential. A. Kraus
- 56** **Actual tendencies in primary osteoplasty for cleft palate.** R. Van Clooster (Univ Ghent, Ghent, Belgium). *Acta Stomat Belg* 69(3):309-15, 1972 (Dut). The term primary osteoplasty was introduced by Schrudde and Stellmach to indicate bone transplantation into the defect at the moment of closure of the lip. Even with this intervention pseudoprognathia can occur. It is not clear if the hypoplasia of the maxilla is caused by the osteoplasty itself or by the disturbance of the periosteum in preparing the mucoperiosteal flap. One should either delay the osteoplasty to the age of 14 or respect the periosteum and use a Pilcher flap or a Campbell flap. K. A. van de Putte
- 57** **Surgical correction of cleft palate.** B. Meksupa. *J Dent Assn Thai* 21(6):318-22 Nov-Dec, 1971. A 17-yr-old boy with a cleft palate who was treated by the Von Langenback technique showed appreciable results 7 days postoperatively. Chanpen Sakarin
- 58** **The use of free periosteum for bone formation in congenital clefts of the maxilla.** Veijo Ritsila, Sakari Alhopuro, Uno Gylling and Aarne Rintala (Finnish Red Cross Hosp, Helsinki, Finland). *Scand J Plast Reconstr Surg* 6(1):57-60, 1972. In 11 instances of congenital clefts of the maxilla, free periosteum grafts from the tibia were used to repair the alveolar arch. The grafts were fixed with chronic catgut, bone side inward to the periosteum of the maxilla, thus establishing periosteal continuity between the maxillary segments across the cleft. The whole flap was covered carefully on the oral side with mucosal flaps. A periosteal graft does not produce the immediate orthopedic effect which can be achieved with a bone graft, but if good alignment of the alveolar arches is achieved preoperatively, or postoperatively by pressure of the reconstructed lip, the transplanted periosteum provides rapid fixation of the arches. A periosteal graft, unlike the bone graft, does not undergo a resorptive stage before the formation of bone. Noah R. Calhoun
- 59** **Repair of cleft lip and palate by the method of W. M. Manchester.** Tetsuya Akagawa (Showa Univ, Tokyo, Japan). *Jap J Reconstr Surg* 14(5):394-404 Sept, 1971. The method of W. M. Manchester for the repair of cleft lip or cleft palate, or both, is described in detail. The method of bilateral cleft lip repair is a 1-stage procedure, resulting in the vermilion of the prolabium becoming as thick as that of both cleft sides by means of a flap on the prolabium. For the repair of cleft palate, the operative procedure is to obtain primarily closure of the cleft lip and hard palate at the same time (approximately 3 months after birth); the secondary push-back intervention is performed 8 months after birth. The procedure is easy and reliable. The incision sites are the inner side of the alar base, columella base, inner side of the alveolar process and vomer, producing a vomerine flap so that the flap might be obtained widely to close the cleft easily without any fistula formation. The incision in the push-back procedure is based on the 3-flaps method. The nasal lining flap is made and sutured to the palatal flap after separation of the mucoperiosteum of the medial pterygoid plate. Several other surgical methods are reviewed briefly: pharyngeal flap; fistulotomy, bone graft and rhinoplasty. Takuro Wada
- 60** **Operative methods of palatoplastics in consideration of the posterior neurovascular bundle.** S. Demjen (Komensky Univ, Bratislava, Czechoslovakia). *Acta Chir Plast (Praha)* 14(3):149-56, 1972 (Eng; summaries in Fre, Ger and Spa). Clefts of the soft palate are closed by a 3-flap procedure (V-Y palatoplasty), while complete clefts of the secondary palate are closed using 4 flaps (W-Y palatoplasty). Complete clefts of the primary and secondary palates are closed in 2 interventions. During the first intervention (cheiloplasty), the nasal base and the anterior palate back to the incisive foramen are closed by means of mucoperiosteal flaps. In the second intervention the remaining cleft in the secondary palate is closed by means of 4 flaps (W-Y procedure). Mobilization of the soft palate in posterior direction is achieved by ligation and cutting of the posterior neurovascular bundle from the pterygopalatine canal, and by complete detachment of the muscles from the edges of the cleft hard palate. Follow-up studies of 100 patients treated according to these principles (50 patients 5 yr control and 50 patients 10 yr control) have revealed that in 87% the speech was good. In no instance was secondary reconstruction necessary. It is postulated that the ligation of the posterior neurovascular bundle has no reverse influence on the development of the soft palate or the maxilla. Jens K. Petersen

61 Acute emergencies after cleft palate surgery in children with the Pierre Robin syndrome, and their therapy. F. Harle, U. Philipp and J. Duker (Univ Freiburg Dent Hosp, Freiburg/Breisgau, West, Germany). *Oest Z Stomat* 70(4):131-5 April, 1973. Among 19 children with the Pierre Robin syndrome who were treated for a median palatal cleft, only 4 had no postoperative complications. Intubation in 2 and suturing of the tongue caused a decrease in, but not the disappearance of, the respiratory disturbances. Such complications did not occur in 4 children who received a splint adapted with circumferential wiring, aimed at anterior displacement of the mandible. This was done immediately after the cleft intervention; an opening was made in the splint for a wire on which a weight of 100 or 500 g could be hung. This displaced the mandible together with the tongue anteriorly and kept the airways free. This mandibular extension was well tolerated, and sedation was not necessary. The splint could be removed on the 5th day postoperatively; at this time there is no longer any danger of infection along the circumferential wires. I. S. Levij

62 The current states of cleft lip, alveolus and palate surgery. H. J. Hochstein (Hosp Plast Reconstr Maxillofac Surg, Thallwitz, Germany). *Deutsch Gesundh* 27(21):993-7 May 25, 1972 (Ger; summaries in Rus and Eng). Of the 1,778 primary and 703 secondary interventions performed at the Thallwitz Hospital between 1964-1968, there were 143 osteoplasties of the alveolus and palate. Another 1,059 interventions were done on cleft lip and palate patients (692 tonsillectomies and adenoidectomies, 142 nasal corrections, 156 stomatological interventions, 44 endonasal procedures, 8 tongue reductions, 8 dysgnathia corrections, 7 tubed pedicle flaps and 2 jaw fractures). Still, a third of all interventions are corrective. Of the 3,637 cleft patients treated during the last 10 yr, 526 had been treated previously and 56% required extensive surgery. Among 100 randomly selected treated patients, 52% had been treated elsewhere, 21% had a cleft lip and 12% had a cleft lip and alveolus. One hundred cleft lip patients treated by means of the Millard procedure were re-examined 3 yr postoperatively. Evaluation was based on 4 esthetic and functional criteria. Of the 100-patient sample, 54% were grouped among the 2 best groups, and only 2 patients were considered grade 3 or 4; 22% had a cleft palate. The average age of the first 100 randomly selected Thallwitz patients was 5.3 yr in 1956 and 5.6 yr in 1966. The frequency of palatal fistulas was reduced from 31 to 1 during the same period, and there were 18 velopharyngeal fistulas in 1956 in contrast with only 1 in 1966. The data collected demonstrated a statistically significant improvement of surgical treatment. O. Kriens

63 Primary, early secondary or late secondary osteoplasty in cleft surgery? A clinical and animal experimental study. F. Harle (Univ Dent Clin, Freiburg/Breisgau, West Germany). *Deutsch Zahnärztl Z* 28(5):612-7 May, 1973 (Ger; summaries in Eng and Fre). In 16 of 30 children with palatal clefts, early secondary osteoplasty of the palate had been done at the age of 4-5 yr. At the age of 7 yr the occlusion in this group was more abnormal than in children who had not undergone osteoplasty; there was a significant deviation of the midline towards the operated side ($P > 0.05$) and there was more need for orthodontic treatment ($P > 0.01$). In 3-wk-old rats, an anatomical defect was induced in the hard palate. In some groups this defect was left open, in others it was closed with autologous bone from ribs or pelvis. The animals were killed at the age of 7 months and examined after maceration. There was a greater deviation of the mandible from the midline in animals in which the defect had been closed immediately than in the controls. No differences were found regarding deviation of the maxilla. Thus, both clinically and experimentally, it was shown that in cleft surgery there is only place for late secondary osteoplasty, ie, when the patient is more than 15 of age. I. S. Levij

64 Celesnik procedure in the surgical treatment of bilateral complete clefts. Zvone Zajdel (Clin Maxillofac Surg, Ljubljana, Yugoslavia). *J Maxillofac Surg* 1(3):137-42 Sept, 1973. The Celesnik plan for treatment of bilateral complete clefts includes a definite sequence of procedure. The 1st procedure is bilateral, but only the alveolar clefts and the floor of the nostrils are closed. The total bilateral cleft is reduced to a partial bilateral cleft. Symmetry is maintained and pressure is applied at the base of the premaxilla moving it backward but not downward or inward. Immediately postoperatively, the child is provided with an orthodontic appliance which stimulates and directs the adequate development of the maxilla. The 2nd procedure, while the child is in his 1st yr, is closure of the soft palate. This facilitates development of the soft palate and pharyngeal wall muscles, giving a better chance for development of normal speech. At least 6 months after the first procedure, or preferable even later, the complete closure of the lip is performed. In a 4th procedure, usually when the child is 3-5 yr old, the columella is lengthened to allow development of the tip of the nose. The last procedure, after the age of 7 yr, when growth of the jaw is mainly complete, is closure of the hard palate. The premaxilla is repositioned dorsally, the development of the prolabium is better, and symmetry is achieved with ease. With an orthodontic appliance, shifting of the premaxilla downward is prevented and expansion of the lateral segments is ensured. Robert A. Middleton

65 Surgical procedures for the repair of large defects of the palate. Corbelio M. O'Connor, E. Cordova, P. Kelly, A. Lauria, J. Salazar and E. Cavilla. *Prensa Med Argent* 59(26):992-5 July 28, 1972 (Spa; summary in Eng). The etiology of large developmental defects of the palate are described. Some of the procedures which are used to repair such defects are mentioned. A new procedure is described in which a cheek flap is used for the repair of large palatal defects. The advantages and disadvantages of this procedure are pointed out. Mirta Diana Dahl

66 Palatal gaps. Problems in their repair. M. Stricker, F. Flot and M. Gosserez (Serv Chir Plast, Nancy, France). *Ann Chir Plast* 17(4):267-74, 1972 (Fre; summary in Eng). The palate is an ambivalent anatomic structure having a static and dynamic function. The static portion is the frontal or bony part. The palatal arch or roof of the oral cavity ensures a competent separation from the nasal fossa and support for the tongue. The dynamic portion is its posterior part. It is the muscular area or velum; this occludes the nasopharyngeal isthmus during swallowing and speech. Palatal gaps occur most often in the arch portion. The breach is probably: a traumatic one, which is rather infrequent; or residual, which occurs after treatment of an impacted tooth or a maxillopalatal cystic condition. The velum is involved less frequently, usually by tumor formation. The large palatal defects that result from resections of the maxilla and the result of surgical intervention should be mentioned. A prosthesis may be used to correct the defect. The tongue is a unique reservoir for tissue for repair. The use of the cutaneous tissue is last choice. Tubed pedicle flaps should be avoided, as nasal or frontal cutaneous tissue is preferable. Lloyd E. Church

67 Congenital lateral fistula of upper lip. A case report. Otto Kriens, Helmut Schmidt and Otto Mueller-Driver (Univ Erlangen-Nuremberg, West Germany). *J Maxillofac Surg* 1(2):122-4 June, 1973. The clinical, radiographic, and histological findings in a patient with congenital lateral fistula of the upper lip are reported. This anomaly is extremely rare; only six instances have been reported in the literature. The lesion was removed surgically. Otto B. Kriens

- 68 Bilateral cleft lip repairs. Review of 160 cases and description of present management.** T. R. Broadbent and R. M. Woolf. *Plast Reconstr Surg* 50(1):36-41 July, 1972. Methods of surgery used to restore the lip form are discussed and their advantages and disadvantages are analyzed. The Manchester technique is discussed and the results of 23 such interventions are described. Laurence H. Rubin
- 69 Congenital midline sinus of the upper lip.** R. J. Bartels and R. C. Howard. *Plast and Reconstr Surg* 52(6):655-8 Dec, 1973. Only 6 instances of a midline sinus of the upper lip have been reported in the literature. The midline sinus described was associated with orbital hypertelorism and a cleft in the upper lip. The combined anomalies in the upper lip region were related to an abnormality of the frontonasal process. The embryology of the sinus formation is discussed and the surgical procedure performed on the patient is described. Laurence H. Rubin
- 70 Planning the repair of cleft lip deformities.** Takuya Onizuka (Showa Univ Fac Med, Tokyo, Japan). *Brit J Plast Surg* 26(2):181-3 April, 1973. An equation which can be used in designing the repair of any cleft lip deformity is described and its use illustrated in 2 instances of secondary cleft lip deformity. This technique combines the advantages of the triangular flap of Millard's method to repair the nostril floor, and the triangular flap of Tension's and Randall's techniques to correct the cupid's bow deformity. The equation can also be used for primary cleft lip intervention. Promod K. Sarin
- 71 Selection of procedure in unilateral cleft lip repair.** Sam D. Theogaraj. *Indian Pediatr* 8(11):774-8 Nov, 1971. The objectives of cleft lip repair are outlined and several methods of repair are described briefly. Methods suggested as most suitable for cleft lip repair are: Millard repair for most incomplete and type B complete clefts; triangular flap repair for narrow complete cleft lips; and David-Davies repair for wide, complete cleft lips. P. Kumar
- 72 Surgical repair of congenital lower lip sinuses.** D. G. Bowers. *Plast Reconstr Surg* 49(6):632-6 June, 1972. The anatomy of congenital lower lip sinuses is reviewed. The material presented on the sinuses weighs heavily toward careful anatomical surgery and the need to fully explore the sinus tract defect in each instance. Surgical planning is discussed and precautionary measures for successful surgery are outlined. Laurence H. Rubin
- 73 Single stage repair of bilateral cleft lip.** C. T. Yarrington. *Arch Otolaryng (Chicago)* 97:263-64 March, 1973. A single-stage method for repair of bilateral cleft lip is described. The procedure can be accomplished over a normal or mildly protruding premaxilla using lateral lip and skin flaps with a single straight-line closure on the less-deformed side. The more-deformed side requires a rotation-advancement, triangular-flap repair. Skin and vermilion from the prolabium are used to reconstruct the labial sulcus. Stability is achieved by using subcutaneous wires tied over dental cotton rolls at the nasolabial creases. These remain in place for 10-12 days. Larry J. Peterson
- 74 Restoring the overhang of the upper lip in repairs of the oral commissure.** N. R. Wall, R. R. Cameron and W. D. Latham. *Plast Reconstr Surg* 49(6):626-8 June, 1972. A surgical technique for treating a patient with a defect of the oral commissure is outlined. Laurence H. Rubin
- 75 Surgical management of the bilateral cleft lip.** M. Viale-González, F. Barreto and F. Ortiz-Monasterio. *Plast Reconstr Surg* 51(5):530-5 May, 1973. A codification of many approaches to bilateral cleft lip surgery is presented in an effort to have a logical and simple operation which can consistently fulfill most of the ideal requirements in bilateral cleft lip reconstruction. Timing of surgery, the design considerations and the procedure are described. Laurence H. Rubin
- 76 Clinical features of median cleft of nose.** L. A. Krikun (Moscow Scientific-Res Inst of Cosmetology, Moscow, USSR). *Acta Chir Plast (Praha)* 14(3):137-48, 1972 (Eng; summaries in Fre, Ger and Spa). The clinical features of 64 patients with median cleft of the nose are described. Subjects consisted of 13 men and 51 women. The 20-29 yr age group was the largest (29 patients). Six patients were characterized by having a history of hereditary transmission of this disorder, but no such relationship could be demonstrated in the remaining 58. The disorder can involve all structural components of the nose, including skin, chondro-osseous skeleton, muscles, and vessels. Three basic variants of median cleft of the nose are found. One is hypotrophy and cleft in the anterior edge of the septal cartilage, the other one is hypotrophy and deformation of the alar cartilages with abnormal position of the triangular cartilages and the nasal bones, and the third one is hypotrophy of the apex of the nose and the columella. Occasional accompanying features are hypertelorism, divergent strabismus, a wedge of hair on the forehead, deformation of the frontal bone, wide separation of the eye brows, median cleft of the vermilion border of the upper lip, and abnormal development of the maxillary dentition. Jens K. Petersen
- 77 Rhinolalia aperta.** John B. Gormah (Med Center, Lynchburg, Virginia). *Virginia Med Monthly* 99(10):1077-80 Oct, 1972. The hypernasality of speech characteristic of submucous cleft palate may be corrected by a surgical procedure which has been highly successful, Rhinolalia aperta or nasality in speech from a specific cause, namely, pharyngopalatal incompetence associated with submucous cleft palate, is discussed. Surgical care is but one of a number of services required by the cleft palate patient. Most of these patients require prolonged and sustained efforts by the plastic surgeon, a dental team, the speech therapist and the otologist. Ideally, the object of the correction of submucous cleft palate is the functional union of the parts, the establishment of intelligible speech and the avoidance of injury to the growing maxilla. Most patients with a submucous cleft palate can be rehabilitated after a diagnosis has been established, treatment depending on the degree of cleft and the extent of mesodermal lack. In review, the principle is: the velum must be able to occlude to the posterior pharyngeal wall. The methods developed to secure this effect currently are: a pad in the posterior pharyngeal wall eases the demand on the velum to accomplish closure; the retrodisplacement of the palate decreases the distance from the velum to the posterior pharyngeal wall; and the nasopharynx and oropharynx are separated by an obturator of tissue or by an appliance. Pushback is done by elevation of the mucoperiosteum of the hard palate with lateral extension of the incisions posteriorly, freeing the mucoperiosteum. The pharyngeal flap forms a functioning nasopharyngeal pad. The chief advantage of this procedure is the coverage of the raw nasal surface of the soft palate, preventing any creeping of the retrodisplaced mucoperiosteum to its former anterior placement. The pharyngeal flap keeps traction on the palate, eliminating any tendency of the palate to return to the position it had occupied before the pushback. Ear defects are found concomitantly in a large number of such patients. Adenoidectomy performed on patients with hidden submucous cleft palate exposes the palatal deficit by removing the adenoidal mass, making surgical correction necessary. Velopharyngeal insufficiency may be corrected by use of the combination of palatal pushback and superior based pharyngeal flap. R. L. Miner

78 Correction of noses associated with clefts of lip and palate.

Norbert Schwenzer (Univ Tübingen, Tübingen, West Germany). *J Maxillofac Surg* 1(2):91-5 June, 1973. A correction in one session of the characteristic malformations of the cleft lip and palate nose is suggested: the flattened ala with the alar cartilage displaced in the ipsilateral and caudal direction, a deviation of the septum, and the anterior nasal spine towards the unaffected side and the deficiency of support of the ala on the cleft side. In patients older than 15 yr of age, the cartilages of the nose are exposed and corrected from a Réthi incision. Autogenous cartilage grafts help to stabilize the operative result. Elongation of the columella is achieved with a triangular flap in unilateral clefts. Osteotomy, if necessary, is performed during the same session.

Otto B. Kriens

79 Combined correction of the maxilla and the nose in patients with clefts.

P. J. W. Stoelinga and R. T. R. Wentges. *Nederl T Geneesk* 117(43):1604-9 Oct 27, 1973. In cleft patients with maxillary retrognathia, the maxillonasal complex may be moved in the ventral direction in 1 session. The great functional and esthetic improvement that may be obtained by this method is demonstrated in descriptions of 2 patients.

Frans P. G. M. Van der Linden

80 Corrective plastic surgery of the cleft nose.

Otto Neuner (Univ Berne, Berne, Switzerland). *J Maxillofac Surg* 1(1):50-61 March, 1973. Secondary corrective plastic operations on the osseous framework, the septum, and triangular cartilage are necessary for cleft nose patients. The procedures for unilaterally or bilaterally involved noses differ; lateral deviation and asymmetry being the main deformities in the 1st instance, and underdeveloped septum and columella and a widened nasal tip in the 2nd. Techniques are illustrated through clinical cases reports.

Edward C. Hinds

81 The importance of connatal palatal velum insufficiency in childhood.

Jeno Hirschberg, P. Votisky, and Z. Horvath (Mandaras Str Child Hosp, Budapest, Hungary). *Gyermekgyógyászat* 23(2):153-60 May, 1973 (Hun; summaries in Rus and Ger). Causes of connatal velum incompetency (I) are developmental anomalies such as shortness of the palatal velum, submucous clefts of the palate, open clefts of the palate, excessive depth of the epipharynx, and also encephalopathies, rudimentary paresis of the velum musculature (occurring in the perinatal period), and Mobius' nuclear aplasia. In 1968-72, 31 patients with I were reported and underwent interventions under intubation narcosis. Seventeen had congenital shortness of the palatal velum, 12 submucous clefts, and 2 muscular paresis. Speech disturbance was combated successfully by the intervention, but surgical procedures on 20 patients with open cleft palate were less successful.

P. Adler

82 Vestibuloplasty in childhood.

H. J. Hochstein (Wolfgang Rosenthal Clin Plastic Surg, Thallwitz, East Germany). *Deutsch Stomat* 23(1):33-40 Jan, 1973 (Ger; summaries in Eng and Rus). One hundred twelve cleft patients, aged 4-11 yr, who were treated between 1956-1970 by means of vestibuloplasty, were followed up, and the surgical technique used is discussed. Special attention is given to reconstruction of the vestibulum and lip, scar formation and its prevention and epithelialization of the wound. Plaster of paris models were used in the control examination for comparison of pre- and postoperative conditions. Vestibuloplasty with secondary epithelialization gave better results than cutaneous flap transplantation; the latter should be reserved for special instances.

Anna Plackova

83 Paranasal (oro-ocular) cleft of the face. Report of a case.

W. Poradowska, M. Jaworska, Z. Pudkiewicz and S. Rezek (Res Inst Mother and Child, Warsaw, Poland). *Acta Chir Plast (Praha)* 15(1):1-6, 1973 (Eng; summaries in Fre, Ger and Spa). The surgical management of a rare type of paranasal cleft in a male infant is described.

Anna Plackova

84 The prevention of hearing impairment in cleft patients.

H. Koch, R. Neveling, W. Hartung and M. Quante (Univ Düsseldorf, Düsseldorf, West Germany). *Deutsch Stomat* 23(11):816-42 Nov, 1973. Frequency of hearing impairment was investigated by re-examination of 1,755 cleft patients, of whom 49.3% claimed to be affected. Statistical evaluation of the type of cleft anomaly and the type of ear disease was performed. In a 2nd investigation, audiometric, otoscopic, and tympanal puncture examination were performed in patients who had undergone intervention for cleft lip or palate or both. Results showed a hearing impairment of varying degrees in 72.6%. The cause of the hearing impairment was mostly effusion into the tympanic cavity and its complications. Frequently repeated transtympanic drainage must be performed. Prevention of hearing impairment should be integrated into rehabilitation of the cleft patients.

Anna Plackova

85 Characteristics in the development of children with congenital cleft palate and the role of the pediatrician in its treatment.

N. S. Kuznetsova and V. Y. Bulamovskaya (Sverdlovsk Scientific Res Inst of Traumatol and Orthoped, Sverdlovsk, USSR). *Pediatriia* 50(5):72-5 May, 1971. An analysis of data on 893 children born with cleft palate who have been under continuous pediatric observation indicates presence of feeding difficulties (63.3% were artificially fed, 17% were breast-fed and 19.7% were fed by both methods); presence of various diseases in 37.6% (most frequently respiratory disorders, anemia, rachitis, hypotrophy); and other developmental defects in 17.7%, with congenital heart defects being the most frequent. In addition to clinical observation and supervision, the pediatrician must prepare the child for corrective plastic surgery by conducting preoperative medical examination, and supervise postoperative care, consulting with parents and others involved in the child's development.

Edna J. Samonek

86 Speech results in cleft palate surgery.

S. O'Riain and B. N. Hammond. *Brit J Plast Surg* 25(4):380-7 Oct, 1972. In a selected group of 249 cleft palate patients, various factors affecting speech were analyzed. The children were treated and assessed over a 16-yr period by the same surgical team, ward nurse and speech therapist. There were 126 instances of complete clefts, 93 of post-alveolar clefts and 30 of post-alveolar clefts with lip involvement. Articulatory defects were a considerably more frequent characteristic of poor speech than nasality, the ratio being approximately 3:1. The highest incidence of appreciable articulatory defects was apparent in the patients with complete clefts and lowest in those with post-alveolar plus lip clefts. Four surgical procedures were used in these instances. There was no correlation between any particular surgical intervention and speech results. The highest percentage of satisfactory linguistic and general development at 2 yr (52%) was found in those children whose speech was subsequently graded perfect, and the lowest (19%) in the unacceptable plus grossly defective speech group. Between the ages of 2-5 yr, there was an overall increase in satisfactory grading from 41% to 70%, those with perfect or acceptable speech having a combined total of 83%, whereas of the unacceptable speech group only 43% could be assessed as satisfactory. Of the children with perfect speech, 58% had had an encouraging parental influence. In the unacceptable and grossly defective speech groups the comparable percentage was 40%. 15 references.

Promod K. Sarin

87 **Circulatory changes in the premaxilla during treatment for bilateral complete cleft lip and palate.** A. Lahti, G. Kvist and A. Rintala (Finnish Red Cross Hosp, Helsinki, Finland). *Scand J Plast Reconstr Surg* 6(2):132-4, 1972. The premaxilla and the prolabium in instances of bilateral complete cleft lip and palate receive blood supply from the anterior ethmoidal arteries, posterior septal branches and lateral nasal arteries. By measuring the half-time of injected ^{133}Xe , it is possible to follow quantitatively circulatory changes in the premaxilla. Closure of complete cleft lips and palates was accomplished in 3 successive interventions in 5 patients while following the circulation in the premaxilla. The circulation appeared to decrease as a result of the surgery performed, but was, generally, restored after surgery and healing. The premaxilla circulation in these patients was better on an average in all stages of reconstruction compared with a control group of 4 patients with only cleft palate. It is therefore ascertained that there is no causal relationship between the growth and circulatory disturbances in the premaxilla in patients with bilateral complete clefts.

Jens K. Petersen

88 **Team work and clinical research in the treatment of cleft lip and palate.** R. Helquist (Univ Hosp, Uppsala, Sweden). *Svensk Tandlak T* 66(2):145-55 March, 1973 (Eng). Constituting a cleft palate team are the speech therapist, the orthodontist and the plastic surgeon, and also the ear, nose and throat surgeon, the oral surgeon and the prosthodontist. The orthodontist will assume a bilateral responsibility on the cleft palate team. He is familiar with cephalometric radiography and model analysis and can contribute to the analysis of craniofacial and maxillary structures, and provide information regarding objectives of treatment procedures on craniofacial growth, type and frequency of malocclusion. Much of the progress in treatment can be attributed to these factors—research and close cooperation of qualified specialists.

Helge Berggren

89 **Cleft patient rehabilitation from the viewpoints of orthodontics, maxillofacial surgery and logopedics — a report on experience with cooperation.** M. Busau, C. Opitz, D. K. Shetty and C. Wiemann (Humboldt Univ, Berlin, Germany). *Deutsch Stomat* 23(7):510-19 July, 1973. (Ger; summaries in Rus and Eng). In 1964, a group composed of specialists in the fields of oral surgery, orthodontics, and logopedics was established at Humboldt University. These specialists organized a complex rehabilitation program for patients with cleft lips, palates, or both. The organization and planning is described, and the Berlin model for cleft-patient rehabilitation is presented.

Anna Plackova

90 **Morphology of the adult face following repair of unilateral cleft lip and palate in childhood.** L. G. Garkas and W. K. Lindsay. *Plast Reconstr Surg* 52(6):652-5 Dec, 1973. Superficial dimensions of the face were measured by anthropometric methods in 74 Canadian adults who had had unilateral cleft lip and palate surgery in childhood. Sixteen metric and 3 qualitative signs of the upper lip and face were evaluated. These data were compared with a similar data from 100 Canadian men and women. The clefts are categorized according to completeness or otherwise. The same general features of the face were found in adults with repaired unilateral cleft lips and palates as in adults with repaired bilateral cleft lips and palates, and in those with isolated cleft palates. These features encompass a longer facial profile, a horizontally narrower face, and a narrower labial fissure. The prenatal and postnatal developments of the middle third of the face are similar in all patients with cleft lips or palates, or both, of whatever degree. The unaffected side of the face in unilateral cleft lip and palate patients was also examined. Laurence H. Rubin

91 **The development of the jaw in patients with clefts after primary and secondary velopharyngoplasty.** W. Bethmann and U. Barth (Nurnbergerstr 57, Leipzig, East Germany). *Deutsch Zahn Mund Kieferheilk* 60(6):370-7 June, 1973 (Ger; summary in Eng). Follow-up studies 10 yr or more after primary or secondary velopharyngoplasty in 52 patients included a clinical examination of the pharynx and dentition, preparation of plaster models of the maxilla and mandible, and telerradiograms. There were 6 patients with bilateral and 24 with unilateral clefts of lips, jaws, palate, and velum, 17 with palatal clefts, and 5 with clefts of the velum. In 47 patients, the surgical technique of Schonborn-Rosenthal was followed (17 primary plasty, 28 secondary plasty, 2 unknown), and in 5 patients the technique of Schonborn-Rosselli (3 primary, 2 secondary). In 62.7% of all patients the length of the maxilla was normal, and closure of the nasopharyngeal space was good in 84.3%. Development of the jaws was less inhibited by primary than by secondary plasty ($p < 0.05$), and it was optimal when the intervention was performed at the age of 11-15 yr (77.8% good results compared with 55.6%-75% in other age groups). No relationship was found between the type of cleft and later deviations of the midline, transversal or sagittal deviation, or prognathism. The length of the maxilla was normal in 83.3% of those with bilateral and in 54.2% of those with unilateral clefts of lips, jaws, palate, and velum, in 62.5% of those with clefts of the palate, and in 80% of those with clefts of the velum. The results after the Schonborn-Rosenthal and Schonborn-Rosselli procedures were not significantly different. The development of the maxilla was best when the width of the pharyngeal flap was 10 mm or more. Patients who underwent no postoperative orthodontic treatment had a normal maxillary length in 80%, but this was only so in 51.6% after orthodontic treatment. After preliminary surgery of the lip cleft the length of the maxilla was normal in 58.1%; this was 70% in those who had not undergone surgical treatment of the lip cleft as a first step. Better results were obtained in patients where a tonsillectomy was done, and in patients with better developed pharyngeal muscles. When the velum showed good mobility, the length of the maxilla was normal in 50%; this was 63.8% when there was reduced mobility of the velum. All patients with good mobility of the velum had transversal or sagittal deviations. 19 references.

I. S. Levij

92 **Surgical-prosthodontic reconstruction of maxillary retrognathism in patients with clefts.** R. M. Berns and K. Kekkass (Catholic Univ St. Radboud Hosp, Nijmegen, The Netherlands). *Nederl T Tandheelk* 79(12):457-63 Dec, 1972 (Dut; summary in Eng). In patients treated surgically for clefts of the lips, jaws and palate, there is often an abnormal profile combined with malocclusion, usually caused by maxillary retrognathism. This can be treated by mobilization and forward displacement of the maxilla, but good results can also be obtained with a combination of surgery and prosthodontics. This treatment is only possible in patients with a healthy dentition and periodontal tissues. A plaster model is made, and in this model the vestibulum is carved to the required depth. A cap splint is now made on this model, in addition to 2 removable metal rasters. For the surgical intervention, a free skin transplant is taken from the upper part of the leg or arm, and an incision is made in the upper vestibulum at the transition between attached and free gingiva. The required depth is obtained by suprapariosteal preparation. The metal rasters are covered with heated and plastic rubber, and this is modeled so that it fits exactly in the space created by the above preparation. The skin transplant is placed on a mold and fixed to the cap splint. The transplant is fixed to the mold with cement. Formation of hematomas is prevented by pressure on the upper lip with an elastic bandage. The mold and the rubber are removed after about 3 wk, and a new mold is inserted which is covered with a resin. The mold is removed every 10 days for cleaning, but it should not remain outside the mouth for more than 10-15 min. After approximately 2 months the mold and cap splint are replaced by a removable prosthesis to which a mold is attached. This plate can be removed for cleaning by the patient himself. Prosthodontic treatment can start approximately 6 months after the surgical intervention, because after this period no significant contraction of the scar