establish alternatives to its use. It is the aim of this prospective study to prove that the giving of banked blood, intraoperatively as well as postoperatively, can be avoided or reduced to a minimum through the constant use of blood-saving measures: autologous blood deposit, preoperative application of erythropoietin, normovolaemic haemodilution (NHD), intraoperative use of the Cell-Saver System (CS) and moderate induced hypotension.

Methods: Since June 1994, within the framework of a prospective investigation when a blood loss of at least 500 ml can be expected, the following measures have been carried out according to a standardized procedure of operation: NHD, moderate induced hypotension (MAP ≥ 60 mmHg), intraoperative autotransfusion (CS) and, since 1995, preoperative use of erythropoietin. In order to ensure a balanced homeostasis, the following intraoperative conditions must be adhered to: HR: 50–110/min, MAP: 60–80 mmHg, ZVP: 4–12 mmHg, PaO_2 ≥ 13 kPa, $PaCO_2$: 4.5–5.5 kPa, temperature: 35.5–36.5°C. In addition to the prospective investigation, the consumption of homologous blood from June 1990 to May 1994 was ascertained in retrospect.

Results: It can be shown that, during the last years, only 31 patients needed banked blood. This means that, thanks to the consistent use of blood saving measures since June 1994, 85% of patients did not require any homologous blood substitution.

Conclusions: Even in major cranio-maxillofacial and orthognathic surgery, bank blood requirements can be reduced to a minimum through the consistent combination of the above mentioned methods of autotransfusion. In addition to the necessary criteria that patients must fulfil in order to undergo a preoperative administration of erythropoietin, a NHD, a moderate induced hypotension and an intraoperative autotransfusion (CS), an acceptance of a relatively low haematocrit is very important. Moreover, the close-meshed perioperative judgement of the patients on cardiorespiratory, cerebral and laboratory-chemical levels forms a major corner stone in blood saving also.

Comparative Study between the Radial Forearm Free Flap and the Pectoralis Major Myocutaneous Flap in Orofacial Reconstruction

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The radial forearm free flap (RFFF) and the pectoralis major myocutaneous flap (PMMF) are the workhorse in the head and neck reconstruction. Their indications, advantages and disadvantages are numerous and can be different according to authors.

This is a comparative study between the RFFF and the PMMF designed to evaluate our results, to detect differences and possible problems with each method that may be useful for the decision.

From January 1989 and December 1993 we have performed 39 reconstructions with the RFFF and 48 with the PMMF in 87 patients.

With the application of quality of care indicators we have designed and applied a comparative study method establishing effectiveness, risk and costs variables.

Our results have showed with statistical significance ($P < 0.05$) that the patients reconstructed with the radial free flap have more primary cure without complications, less local and systemic complications, less hospital stay and more operating time than the patients reconstructed with the pectoralis flap.

Experimental Reconstruction of Condylomandibular Defects with Vascularized Bone Grafts during the Development of the Mandible

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Most of the experimental mandibular defects reconstructed with free flaps have been done only on the basal mandibular of developed dogs using the rib free flap. The aim of our poster is to present a technique for the reconstruction of condylomandibular segmentary defects during the development of the mandible using the microvascularized scapular bone free flap (SBFF). Nine female Landrace pigs underwent ostectomy of the mandibular ascending branch during grow up. Of them, 6 were reconstructed using the scapular bone free flap designed by our group and the other 3 only underwent mandibular ostectomy. Two of the reconstructed pigs were sacrificed 10 days after the intervention, and the remaining ones 12 weeks after the intervention. After sacrifice, silicone liquid was injected in the common carotid artery and later the mandible was extracted. We measured both the non-operated and the reconstructed mandibular ramus. The bony junction of the graft, its morphology and staining with silicone was assessed. Histology study with haematoxylin-eosin, Goldner's technique and fluorescence microscopy were also achieved. We believe that the (SBFF) is viable and useful as an experimental model of reconstruction of mandibular segmentary defects integrating the condyle and as an experimental model of study of the repercussion of the vascularized bone in mandibulofacial growth.

Properties of Hyaline Nasal Cartilage Cells in View of Possible Transplantation

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The biological similarity of hyaline cartilage of the so-called persisting type (not prone to mature, hypertrophy and calcify) found in joints, ribs and the nose in contrast to that of growth plates or ectopically induced ossicles prompted us to study the properties in culture of nasal cartilage cells with a view to evaluating their suitability for reparative surgery of the temporomandibular joint.

Materials and Methods: Fresh, sterile operative specimens of nasal cartilage up to 3 cm^2 in size from more than 60 patients (septum 60; alae 18; triangle 10) were minced and digested (18 h, 37°C) with collagenase (Worthington, Type II). The cells were grown in 12-well plates (2 x 10^4/well) in DMEM regularly supplemented with 10% autologous, homologous or fetal calf serum. Cells were also grown in 1% sera with or without rhIGF-I (0.5 mg/ml). Some experiments involved high-density cultures with late monolayer transfer onto a Tegapor® (3M) grid.

Results: The rate of growth was higher with autologous vs

homologous or FC serum but roughly twice as high with IGF-I irrespective of serum type. Within the first 3 weeks, cells grew with elongated shapes and very sparse extracellular matrix to confluent monolayers. In some cases, after mechanical transfer of the high-density monolayers onto a Tegapor® support, nodular assemblies of cells suggestive of clonal growth were seen and the production of abundant extracellular matrix consisting predominantly of cartilage-specific acid mucopolysaccharides and type II collagen could be demonstrated (10 mm methacrylate sections; Alcian Blue; sandwich type antibody procedure with peroxidase reaction, respectively). Such cultures sometimes could be maintained for up to 120 days.

Discussion and conclusions: With the conditions described, adult nasal cartilage cells, normally in a permanently resting state, could be induced to divide to roughly 10 times their original numbers within about 3 weeks and after this period of matrix-poor fibroblastoid growth and subsequent transfer in monolayer assembly to a Tegarpor® grid the cells could revert to the chondrocyte appearance and resume production of specific matrix. These cells could, therefore, be envisaged to serve as substitutes for lost articular cartilage surfaces. The favorable result in a TMJ patient recently, treated thus supports this contention.

A Case of Bone Formed in a Pleomorphic Adenoma

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Pleomorphic adenoma is the type of salivary adenoma with the highest incidence. We encountered a 37-year-old male with pleomorphic adenoma in the right submandibular part. Osteogenesis was clearly observable in the lesion, which was the size of a child's fist. A qualitative diagnosis was made on the basis of the results of computed tomography (CT) scan, magnetic imaging resonance (MRI), ultrasonography and sialography. In this rare case, CT and MRI could only vaguely reveal the outline of the lesion, but could not clearly show the relationship between the lesion and the circumferential tissues. Ultrasonography, however, showed the capsule uniformly formed around the lesion. Irregular echoes were present within the lesion, and ^{67}GA scintigraphy showed the high-density area corresponding to tumour. Malignant potential was denied, however, because of the ball in hand-like findings obtained in sialography, and the intact excretory ducts, which showed no discontinuity or leakage. Histopathologically, the lesion showed a typical image. Diffuse osteogenesis was also observed, and the newly formed bones were surrounded by interstitial, capillaries, osteoclasts and osteoblasts. Immunological staining was performed to clarify the characteristics of the tumour cells. The inside of the duct structure was positive for cytokeratin, and the external cells were positive for S-100 protein.

Odontogenic Tumours and Dental Anomalies in Children

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On many occasions, the maxillofacial surgeon must confront unusual cases, such as congenital malformation. Two complex clinical cases are presented in which there are no references in the literature. They belong to the group of dental anomalies of size and form. In one of them, the principal anomaly is the presence of multiple odontoma in the maxillary and mandible, with the child in dental eruption phase. In this poster we present the clinical history of the family and the clinical photograph of the patients.

Cherubism: Report of a Case with Renal Pathology

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Cherubism, an inherited, fibro-osseous condition is characterized by firm, painless, swelling of the jaws producing a cherub-like appearance. The condition is transmitted as an autosomal dominant trait with greater, penetrance in males (100%) than in females (50–70%). In this research an 8–year–old girl patient with renal osteodystrophy was treated in Ankara University's Faculty of Medicine, Department of Pediatric Nephrology. During the treatment, bilateral jaw lesions were detected and the patient was sent to Gazi University's Faculty of Dentistry, Department of Oral and Maxillofacial Surgery. The patient's detailed medical and dental history was taken and she was clinically and radiologically examined. An incisional and excisional biopsy was performed and there was a diagnosis of cherubim. The purpose of this report is to present an extensive case of cherubism with no apparent familial involvement and to discuss its radiographic features, histopathologic appearance and surgical management. In addition, the difficulty in distinguishing between cherubism central giant cell granuloma, brown tumour and renal osteodystropy will be discussed.

Histopathological Investigation of the Effects of Two Different Biomaterials used With and Without Bioabsorbable Membrane on Bone Regeneration

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Recently, studies have been concentrated on investigating the effects of bioabsorbable membranes to improve bone regeneration due to the necessity of a second surgical operation for removal of the nonbioabsorbable membranes. This study was aimed at the comparison of biocompatibility and ability to support bone regeneration of a bioabsorbable membrane and two different biomaterials being utilized altogether. New Zealand rabbits were used and three standardized defects were constructed on each side of their mandibles. One of the defects was filled with allogenic bone chips and the other with coral on each side. The third defect was left empty to form the control group. The defects were covered with a bioabsorbable membrane consisting of lactide and glycolide copolymer on one side. The animals were divided into 3 groups and were sacrificed on the third, seventh and fourteenth days. Histological analysis after the three healing periods demonstrated all of the materials to be well tolerated by the tissue, no hypersensitivity reaction was observed, only a mild local inflam-