cal prerestorative therapy with prosthodontic restoration, to enable esthetic harmony and functional efficiency of dental arches.

The case reports describe:

- unfitting orthodontic treatment with central incisor extrusion,
- bone defect after implant disintegration,
- polytrauma after traffic accident,
- status post partial resection of the right upper jaw after fibrosarcoma - rest oroantral communication and total bilateral cleft,
- hypertelorism, hands and feet malformation, left side oronasal communication from palate to fornix.

The methods of reconstruction are unusual and some of them are presented in the 5 clinical cases.

100.

Measurement of the Electromagnetic Field in Dentistry

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The aim of this study was to measure the magnetic field in dentistry together with simultaneous substraction of direct ground component of the magnetic field. The research instrument used to measure the power of the magnetic field was of our own design. It measures the magnetic field by the Hall sensor that is powered with 5 to 10 V and is integrated in one chip together with preamplifier. The sensor output is differential (Q1-Q2) and proportionate to measurement values of magnetic induction. As the values of alternate fields in a laboratory setting are small the differential output voltage should be increased by about 100 times. Our study samples consisted of instruments currently available in dentistry: halogen lamps, polymerizing lamps, amalgam mixers, micromotors and dental chairs. On the basis of our study results and statistical analysis the following conclusions are made magnetic field spreads through space in ISOTROPIC manner. The greatest frequency obtained at the smallest distance was 100 kHz. The sensitivity of the measurement instrument was 0.0001 μT and the majority of instruments produce magnetic radiation higher than 4o G. The power of the magnetic field decreases with increasing distance from the source. The investigated instruments produce a relatively mild magnetic field. The instruments with stronger magnetic fields are located far enough from the persons on whom they act. The newly produced instrument acts on their environment by smaller magnetic fields.

101.

Surface Modification of an Experimental Silicone Rubber Maxillofacial Material to Improve Wettability

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OBJECTIVES: Good wettability of maxillofacial prosthetic materials is important so hat a lubricating layer is formed with supporting tissues thus reducing patient discomfort. The purpose of the study was to surface modify an experimental silicone rubber material in order to improve wettability.

METHODS : Samples of experimental silicone rubber were surface modified by first argon plasma treatment followed by chemisorption of ethyleneoxy functional silanes. These were compared with the same silicone rubber which had ethyleneoxy functional surfactants incorporated into the polymer matrix. In all cases contact angles, tear strength and water uptake were measured.

RESULTS: Surface modified materials had comparable contact angles to surfactant modified silicone rubber, all being significantly lower than the unmodified material. Surface modified materials however had a significantly higher tear strength and lower water uptake in comparison to surfactant modified materials.

CONCLUSION: Argon plasma treatment followed by chemisorption of ethyleneoxy functional silanes proved an effective way of improving the wettability of an experimental silicone rubber maxillofacial prosthetic material without altering bulk properties.