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ABOUT OPERATIVE TREATMENT OF THE INGUINAL HERNIA ASSOCIATED WITH THE CONJUNCTIVE TISSUE DYSPLASIA

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Abstract:

The article offers the view to the problem of dysplasia conjunctive tissue of the surgical patients. And also the results of investigation of 148 patients with inguinal hernias on the presence the signs of non – differentiated conjunctive tissue dysplasia are presented. It's important to have differentiated approach in the choice of surgical tactics. The new modification of plastic of inguinal canal by nets – endoprosthesis is shown.

Key words:

inguinal hernia, conjunctive tissue dysplasia, herniaplasty, interfascial herniaplasty, polypropylene implant.

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ORAL REHABILITAION ON SMALL SUBSTANCE LOSS CASES

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Abstract:

The purpose of this study consists of the identification of implantologic and prosthetic methods and techniques used in substance loss rehabilitation, associated with identifying the specific biomaterials in perfect accordance with each case particularities, without leaving aside the bone-tissue deficiency etiology.

A representative number of clinical cases were selected, cases which are relevant for the chosen theme. The possibility of reconstructing the natural parameters of the edentulous alveolar ridge areas is various, starting with augmentation materials of the autogenous and heterograft type biomaterials(Bio-Oss, Grafton, Cerasorb si MBCP) including the mixing of these two types of biomaterials, and going to epitheses, which are the best choise for complex substance loss.

Key words:

augmentation materials, biocompatibility, facial prosthesis, implanto-prosthetic therapy

Introduction

The implantologic and prosthetic territory represents a domain of excellence in operations of complex oral-maxillar-facial rehabilitation, and it is materialised during a specific and very important stage included in this complex algorithm. (1)

The causes of substace loss are represented by oral-maxillar-facial trauma, by cyst and tumour removal, etiologies which confer a high degree of difficulty to these cases. (2)

Purpose

The purpose of this study consists of the identification of implantologic and prosthetic methods and techniques used in substance loss rehabilitation, associated with identifying the specific biomaterials in perfect accordance with each case particularities, without leaving aside the bone-tissue deficiency etiology.

Material and methods

A representative number of clinical cases were selected, cases which are relevant for the chosen theme. The reconstruction of substance loss is of critical importance in re-establishing the optimal parameters which characterise the edentulous alveolar ridge areas.

The possibility of reconstructing the natural parameters of the edentulous alveolar ridge areas is various, starting with augmentation materials of the autogenous and heterograft type biomaterials, including the mixing of these two types of biomaterials, and going to epitheses, which are the best choise for complex substance loss.

Results

When it comes to the biomechanical and aesthetic reconstruction of the arcade, in the majority of the cases the implantologic variant was preferred, followed by the fixed or removable prothesis, which were realised either on a separate, post-augmentation stage, or in the same time with the augmentation stage.(2)

The most frequent losses of substance are the intraoral

Image 1- Aspects of intraoral losses of substance

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Image 2 - The epithesis framework

Image 3 - Final aspect of the epithesis

ones, their immediate solution being shown in these two clinical cases - the loss of substance is a consequence of the oral maxillofacial surgery intervention, the excision of pseudo tumor formations.(Image1)

In the both cases, we elaborated epitheses which aim the restoring of the alveolar and dental arch continuity, equally assuring aesthetic and functional rehabilitation by covering the loss of substance.

An important aspect of epithesis elaboration is the fidelity of the previous morphology restoring, which shows incongruence in both cases.

These fixed prosthetic constructions are the results of a rigorous technological algorithm, the metallic frame will need special retentions in order to apply the aesthetic compound; the acrylic material can be flexible, protecting the muco-osseous support from traumatism of the aliments passing.(Image2)

The final retention of the epithesis is achieved by including the marginal teeth, assuring the restoring of the anterior dental arch, thus leading to the augmentation of the prosthetic construction stability. (Image3)

The morpho-functional and bio-mechanical characteristics of the clinical situation which ultimately resulted, after the quantification of the clinical and para-clinical data, pleaded for the election of 11 Perio implants, type X class, represented another cases, very important for this subject. The distribution of the implantations in the two dials was divided in 5 implants with a diameter of 3,3 and 4 mm, with lengths of 10, 11,5, 13 and 15 mm, with the full consensus of the dimensions of the bone support and of the organic structures substituted in the dial 1:14, 15, 16, 17, 18. At the second dial's level 6 implantations were applied, having the diameter of 3,3 and lengths of 10, 13, 15 mm, corresponding to the dental elements 22, 23, 24, 25, 26, 27. (Image4)

The optimal results were obtained through the rigorous compliance with the bio-mechanical principals and the correlation of the increasing method in the same session with surgical insertion of the implantations, based on the usage of the Cerasorb bio-material, having a granulation of 150-500 μm, with an inorganic, that reunites the derivatives of the calcium and phosphate, with a high degree of biocompatibility.(Image5)

The confirmation from the images of the clinical and para-clinical jaws offer the radiography of a deficient jaw prosthetic field, the remaining odontho-parodontal elements being characterized by negative clinical and biological parameters. The degree of the bone absorption, which stood at the basis of the pro-prosthetic preparation stage, will offer the optimal for the prosthetic bed's design.(3)

An important aspect in the case's success was represented by the increase of the ridge in the frontal zone, with the help of the Bio-Oss and of the Titan-made membrane. The manual labour was done at the same time with the implant, the intervention pleading for the advantage of the limitation for the surgical timing.

Image 4- The radiological aspects before and after implantation

Image 5- Aspects of augmentation with Cerasorb

Image 6- Aspects of augmentation with Bio-Oss

Image 7 - Aspects of Titan mesch in rehabilitation of frontal ridge

The balance between success and failure had relatively limited lines, but for the present case the age and the reaction of the tissue were in favour of the post-operation evolution.

The Bio-Oss is substitute of the natural bone, osteoinductiv that leads to the controlled bone increase at the level of the prosthetic fields characterised by a parodonthic affection or by substance losses at the bone level.(image 6) This therapeutic selection was based on the inducement of the bone crest at the situs' level, where it was transplanted. (4)This decision was correlated with the application of the metal membrane, which is going to adapt at the future volume of the crest. (image 7)

The immediate prosthetic was an important stage after the implant and increase, the final prosthetic offering the facial harmony and the confidence of the patient itself.(5)

Conclusions

⇒ The intraoral losses of substances is a sever mutilation and its elective immediate treatment indication is the elaboration of epitheses.

⇒ The importance of the substance loss rehabilitation – a stage which is precedent or concomitent to that of implantologic therapy – is reflected in the appreciation of the resorption and atrophy process on the edentulous crest level and this appreciation has a definitory influence upon accomplishing the final stage of the clinical case.

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РЕАБИЛИТАЦИЯ КОСТНЫХ ДЕФЕКТОВ НЕБОЛЬШИХ АМПЛИТУД ПРИ ПОМОЩИ ИМПЛАНТОВ

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Аннотация:

В этой работе анализируется сложность проблематики востановления костных дефектов небольших амплитуд и применение специальных терапевтических возможностей для их реабилитации. Полученные результаты демонстрируют что терапевтический ареал должен сумировать основные принципы реабилитации с разными методами и типами ртезирования. Специальную роль в этом играют использованные материалы, которые выбираются в соответствии с клиническими особенностями каждого пациента, биоматериалы такие как: Bio-Oss,Cerasorb,Grafton si MBCP .

Ключевые слова:

имплантация, костных дефектов, принципы реабилитации, протезирование, биоматериалы

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DYNAMICS OF LACTATE DEHYDROGENASE CATALYTIC ACTIVITY UNDER THERMOMODIFICATION

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Abstract:

Catalytic activity and kinetic characteristics of the rats (Wistar line) hepatic lactate dehydrogenase before and after thermodenaturation (15 minutes, 60°C) were studied. We found out that the enzyme thermodenaturation brings to activation of the direct and inhibition of the back lactate dehydrogenase reactions . This is confirmed by the enzyme activity rate and kinetic characteristics.

Key words:

Lactate dehydrogenase, thermodenaturation, spectroscopy

Modern combustiology is predominantly a clinical discipline while fundamental basis of thermal trauma forming mechanisms and molecular aspects of burn disease pathogenetic therapy are not adequately explored [3]. A significant moment of thermal lesions pathogenesis is disturbance of supramolecular enzymatic cellular complexes functioning [4]. Moreover it is necessary to say that a distinct toxemia which is a considerable component of burn disease, brings into changes of enzyme activity including lactate dehydrogenase. As a result accurate definition of this enzyme functional activity changed character under thermal effect is fundamental from the theoretical and applied positions.

In connection with it our research aim was study of rats hepar lactate dehydrogenase catalytic characteristics under thermal effect in vitro.

Materials and methods

Catalytic activity and kinetic characteristics of lactate dehydrogenase (LDG) were studied. In the research we used hepatic LDG of white laboratory male rats (Wistar line) with weight of 180-200 grams. 1 g of hepatic tissue cut very small, homogenized in 10 ml of distilled water and centrifugated for 15 minutes under 6000 turns per minute. We threw away a sediment and determined enzyme activity in supernatant.

Enzyme activity was determined spectrometrically by using as a substratum lactic acid (for the direct reaction) [1]. Enzyme activity in the back reaction was also determined spectrometrically by using methylsuccinic acid as a substratum. LDG activity was evaluated in nanomole (nmole) of nicotinamide-adenine dinucleotide reduced disodium salt (NADH) in 1 minute per 1 protein mg. Then we made thermomodification of the supernatant. The protein solution was put in thermostat for 15 minutes (under 60ºC) and after that was cooled for 15 minutes. Afterwards enzyme activity was determined again.

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Table 1

Activity and kinetic characteristics of lactate dehydrogenase under its thermomodification

Index	Before thermodenaturation		After thermodenaturation	
	Direct reaction	Back reaction	Direct reaction	Back reaction
Activity, nmole/min×protein mg	16,74±4,90	98,65±8,97	42,84±6,51*	26,38±7,07*
K_t, min	4,89±1,74	2,24±0,77	0,79±0,31*	13,70±6,40*
V_{max}, mkmole/min	1,98±0,87	3,64±2,34	0,91±0,86*	16,80±8,80*

Note: significant distinctions with the starting exponents p<0,05 – ""*

We studied kinetic characteristics of the lactate dehydrogenase reaction (time of substratum half reaction - Kt – and rate of reaction products accumulation - Vmax) which were calculated by Kostir formulas [2]. Statistic processing of the data was accomplished by Microsoft Excel 2003 spreadsheets and program Primer of Biostatistics Vers. 4.03.

Results

LDG catalytic characteristics dynamics under thermomodification was evaluated by the above mentioned kinetic characteristics (time of substratum half reaction and rate of reaction products accumulation) and enzyme activity (table 1).

It was determined that the activity of the direct reaction catalysed by the enzyme, increased significantly from 16,74±4,90 nmole HADH/min×protein mg (starting level) to 42,84±6,51 nmole HADH/min×protein mg (after thermal treatment) (p<0,05). There was an inverse tendency concerning the back reaction – significant reduction of LDG activity (from 98,65±8,97 nmole HADH/min×protein mg to 26,38±7,07 nmole HADH/min×protein mg accordingly) (p<0,05). It should be mentioned that significant distinctions were marked for all kinetic characteristics.

We calculated time of substratum half reaction (K_t) and maximum rate of reaction products accumulation (V_{max}) of the lactate dehydrogenase reaction for the mechanism specification of the enzyme activity revealed dynamics. Based on