**SPECIAL SURGICAL HOSPITAL ‘MEDIKUS’**

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**‘ INSTITUE FOR CLINICAL REHABILITOLOGY TULA’**

**21 Оbornnaja, 300041 Tula,Russian Federation**

**STUDY**

**For the new medical technology named**

**Gradual fibrotomy by Ulzibat**

**Ćuprija 2016**

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**Special surgical hospital ‘ Medikus’ in Ćuprija in cooperation with the experts from**

**the ‘ Institute for clinical rehabilitology’ in Tula, The Republic of Russia, will introduce**

**a new method of surgical treatment of muscular conctractures at the patients with pathological**

**locomotory apparatus. At the beginning we will briefly discuss on the method:**

**DISCUSSION:**

Меdical technology ‘ Gradual fibrotomy in orthopaedics’ represents the method of surgical

elimination of muscular conctractures at the patients with pathological locomotory apparatus.

The technology boasts high efficiency and functionality thanks to the simultaneous affection

different groups of skeletal muscles taking into account their synergy and antagonism ,

which leads to correction of pathological deformity and elimination of painful syndrom in

orthopaedic diseases. The essence of the technology lies in the gradual cutting of painful

syndrom in ortopeadic diseases.

The construction of the scalpel makes the intervention minimally traumatic. The lack of

immobilisation by plaster in post-operational period leads to shorter recovery and higher

efficiency of rehabilitation.

Medical technology is designed for doctors: orthopaedic-traumatology surgeons, surgeons, and

rehabilitologists.

**Patent protection**: USSSR Patent number 1621901, ‘ Method of treating muscular-facial

pains, Ulzibat V. B., of 1.07.1991., with the priority of 24.09.1987., Russian Federation

Patent number 2124864, ‘ Method of treating orthpaedic concequences of infantile

cerebral paralysis’ of 20.01.1999., with the priority of 7.07.1998., USSSR Patent number

1560143, ‘ micro-fibrilotom by Ulzibat V.B. of 1.07.1991., with the priority of 17.08.1987.

**The author of the method**: professor, doctor of medical science, honoured inventor of

Russian Federation Ulzibat V.B.

**Prepared and fulfilled by the organization**: Special surgical hospital ‘ Medikus’ from

Ćuprija with the Closed Joint Stock Company ‘ Institute for Clinical Rehabilitology’

Tula, Russia.

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**INRODUCTION**

For successful treatment of patient with orthopaedic profile, it is necessary to reveal and

eliminate organic muscular contractures at the eary stage and this prevent the invalidisa-

tion of the patient.

In cases of innate and acquired orthopaedic pathology, the dystrophic and sclerotic

modifications in skeletal muscles are developed in different rates.

It was established that development of dystrophic and sclerotic modifications in skeletal

muscles is one of the reasons of muscle disfunction, myofacial pain and locomoroty distu-

rbnace being different by nosology.

Early revelation and elimination of muscular conctractures represents a necessary condition

in treating orthopaedic profile, since a long-term painful syndrom can lead to development

of conctractures and deformity of locomotor apparatus.

The method of gradual fibrotomy consists in elimination of organic muscular

contractures and myofacial pain syndrom based on the gradual under-tissue cross-cutting

of fibrotic modified muscle fibres in the area of their attachment to the bone. .

(USSSR Patent number 1621901 of 24.09.1987.) by means of specially designed scalpel

(micro-fibrilotom of Ulzibat V.B. , USSR Patent number 1560143 of 17.08.1987., and

Russian Federation Patent number 2124864 , ; Method of treating the consequences

of infantile cerebral paralysis’ of 20.01.1999. (priority of 7.07.1998.) and belongs to the

field of orthopaedics.

The suggested method differs from the exisiting ones in maximal functionality, thanks to

simultaneous affection on different groups of skeletal muscles taking into account their

synergy and antagonism, which leads to correction of pathological deformity

and elemination of painful syndrom in orthopaedic diseases.

The operative treatment course, consisting of 12-16 gradual fibriotomia

lasts for 15-20 minutes, which enables the surgery being done in ambulance

conditions , on the basis of daily surgical hospital. The lack of immobilisation by

plaster in postsurgical period leads to shorter recovery period and higher efficiency

of rehabilitation.

**INDICATION FOR APPLICATION OF THE MEDICAL TECHNOLOGY**

Indications for application medical technology are:

-availabilty of organic muscular concractures and chronic myofacial pain syndrom

that cause difficult muscle function deformity (МКБ - 10; Class 13, М 62. 4

Muscle conctractures; М 79. 1 Мialgy);

-absence of effect of convenctional therapy

**CONTRAINDICATION FOR APPLICATION OF THE MEDICAL TECHNOLOGY**

Absolute contraindications for application of the medical technology are:

-availability of congenital abnormalities and chronic illnesses at the decompesation stage;

-psychological illnesses at the deteorating stage

-pregnancy;

-difficult organ illnesses in deteorating stage;

-disturbance of function of vitally imoprtant organs.

Relative contraindications for application of medical technology are:

-acute infective and somatic ilnesses (including period of reconvalescence);

-acute and subacute neuroinfection, head injury and brain blood flow disturbance;

-chronic illnesses in the period of recrudescence;

-intolerance of medicinal preparation for anaesthesia

-availability of difficult allergies in the case history;

-availability of damages and inflamatory diseases of skin and soft tissues;

-condition after epiliptic seizures: after "small" – ate least 3 months, after ‘big’

(generalized) – at least 6 months, after epileptic sthatus – at least 12 months;

-codition after injected botox (dysport) – at least 6 months;

-post vaccination state – at least 1 month.

**MATERIAL- TECHNICAL STRUCTURES IN THE SPECIAL SURGICAL**

**HOSPITAL –MEDIKUS-**

1.Policlinical part of the hospital consists of: waiting room for the patients, reception desk,

examination office, wounds treatment ward, sanitary washroom and sewer system.

2.Operating theatre consists of: the outer green zone room- reception part,

changing room for patiens, changing room for personnel; inner green zone room –

premedication, preoperational room, room for surgical hand washing,

sterilization room and the operation room which meet the standards of ‘ Regulations

about the conditions of health practice in health facilities and other forms of

health service ''( State Register SR, no.43/2006, 112/2009 ).

3.Equipment and monitoring for anaesthesia,instrument room, sterilization equipment, surgical

light, operating table, electric scalpel, aspirator, laparoscopic equipment etc.

4.Instrument: microfibrilotom Ulzabat V.B. (USSSR Patent number 1560143, priority of

17.08.1987.), approved for the medical usage by the Committee for new medical

techology in the Russian Ministry of Health

(session protocol of the Committee for the appliances, devices and instruments used in

traumatology , orthopaedics and mechanotherapy number 4 from 24.06.1998.

state register of medical instruments no FSR 2008/02296 of 18.03.2008.)

**DESCRIPTION OF MEDICAL TECHNOLOGY**

Before surgery, the surgeon analyses the case history and the condition the patient is into

by examining the main coctractures and deformities of locomotor apparatus and determines

localization of myofacial painful syndrom

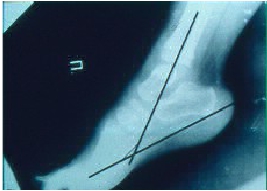
The standard methods of examination are used in determining the patient’s status:

observation, palpation, angulometry, X-ray, plantography and electromyography

(Images no 1 and 2)

Image no 1: X-ray of ankle, angle= 140 degrees

Image no 2: Plantograph before surgical intervention





The intensity of myofacial pain syndrom is determined by the means of psychological-

algometric scale. By deep palpation of standard muscle points which are used in the

process of motion we determine the idurated sections of the muscle which are algetic

during palpation and do not disappear after muscle relaxation. It is necessary to point

that a number of muscle conctractures eg. in oblique stomach muscles,

musculus gluteus, coctractures can not be determined by visual examination but only by

palpation.

To establish the form and the intensity degree of conctractures, deformation and diferentiation

of functional and organic level of muscle contctractures, inhalation narcosis is applied, surgical

level (2-3 level).

In the state of complete relaxation functional conctractures disappear, while оrganic

muscular conctractures remain in the form of indurated fibrotic fold.

Image 3. Clinical examination in the condition of relaxation.

Under total anesthesia or after local anesthetic infiltrated, with the previous

appilcation of standard antiseptics , in the projection of muscle conctracture

a punction of skin in the length of the scalpel is done with the sterile scalpel (microfibrilotom)

all the way to the zone of dead muscular fibres.

Then with the working part of the scalpel , its wider side, we search for the coctractures,

and by turning the instrument with sharp edges towards it we do the cutting of fibre fold.



Image 4. Intervention scheme

Image 5. Skin punction





Image 6. Cutting dead muscle fibres

The action is always followed by characteristc ‘crunching", which, when it stops, confirms

the end of procedure. The construction of the scaplel makes the procedure least traumatic.

After cutting the fibre fold in one muscle section the procedure is repeated in other

sections in which other muscle conctractures had been noticed before.

Spotted wound are then covered with sterile bandage. Aseptic bandages can be removed

after 24 hours.

For successful treatment of patients with orthopaedic syndrom, it is necessary to reveal

and eliminate organic muscular contractures at an eary stage, since their development

may lead to a greater and more traumatic surgical intervention.

However, if the flexion conctracture which is usually in the knee, is bigger than 40°,

redresation should not be bigger than 20° per phase of operation.

Underestimation of this fact may lead to the traction damage of fibular nerve.

Image 7. Achieved result scheme



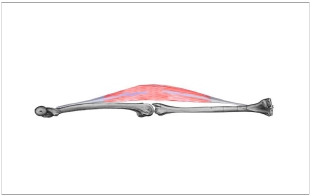


Image 8. Post-operative clinical examination

Image 9. Post-operative clinical examination

Image 10. Post-operative X-ray





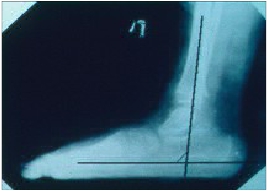


Image 10. Post-operative plantograph

**POSSIBLE COMPLICATIONS AND THE MEANS OF ELIMINATING**

As with all surgical interventions the complications may occur:

**EFFICIENCY OF THE MEDICAL TREATMENT**

Data analysis of the efficiency of gradual fibrotomy application is dane on the personal

computer using the standard methods of stathistics . What was assessed was the research

done by the orthopaedist and neurologist taken in each phase of patient treatment,

data on the analysis of the patients’ condition were collected by the independent physicians-

experts and the data from the medical documentation (ambulance charts, discharge papers)

and survey of catamnesis filled by patients or their parents.

The institute for clinical reahabilitology deals with the patients with different congenital

or acquired orthopaedic diseases:



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| **Complications** | **Means of eliminating** |
| Damage of the blood vessel | Tying off the vessel |
| Breaking of the tip of the scalpel | Extracting |
| Infection of post-operative hematoma | Treatment with the standard medicine |
| Peripheral nerve injury  А) complete injury  Б) partial injury  В) тraction injury | Surgical recovery of the nerve by treatment  and healing.  Medicamentous treatment |
| Tеndion injury  Occurence of pain in other muscles | Tendion stitching  Elimination in the next treatment phase |

congenital muscular torticollis, congenital scoliosis and foot deformities, orthopaedic

consequences of infantile palsy, effects of traumatic and inflamatory damage of loco-

motor apparatus, траumatic brachial plexus injury at giving birth, scoliosis, muscular-

tonic syndrom at osteohondrosis, scapulo-umeral peri-arthritis, epicondilitis, sti-

loiditis, Dupuytren’s conctracture, myofacial pain syndrom. For 25 years of Institute operation

more than 45000 patients were taken for treatment (data on 17.01.2018.), including

37000 children. Annualy we operate on about 3500 patients, among which 1500

primary patients, with more then1200 children. On average, every patient had

two phases in the treatment ( 2 operations), and within the scope of one phases there

were 12-16 gradual fibrotomies.

Table 1. The analysis of the sample group patients treatment results in the period 1993- 2016

Post- operatively, for 15 days any types of activities are not recommended, and

after that period physical therapy with the accent on hydro-therapy and water massage is

necessary .

Analysis of long-term treatment of 3849 patients that was carried out by physicians

from various cities in Russia and by the Institute collaborators during the period of 1993-

2016 has shown the ‘good’ clinical effect in 92.87 %. By eliminating muslce

conctractures the following results were achieved: improvement of intromuscular

hemodinamics,normalization of muscle tone, increased volume of motion and the intensity

of spasms and relaxation and decreased volume of joint contractures served by the given

muscles.At these patients a complex of new motor functions has developed,

a qualitatively new motor stereotype was formed as well as the elimination or

reduction of pain syndrom and hyperkineses.With 4.34 % of patients a ‘satisfactory’

result was noted – improvement of some motor skills expanison of functional within

the initial level of motor development..

In 2.79% cases, patients’s state remained ‘without dinamics’. With 0.03% patients,

appearance of pain in muscle areas that were not operated earlier was considered as

‘aggravation’, these modifications were eliminated at the subsequent stages of treatment.

With regard to local organic muscular contractures or point of reference, efficiency

of gradual fibrotomy amounted in average to 97.5 %.

In more than 50% cases the changes of motor functions have shown qualitative

character. In addition to improvement of loco-motor development with

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| **The result** | **no. of patients 3849** | **Percent (%)** |
| Good | 3573 | 92.84% |
| Satisfactory | 167 | 4.34% |
| No changes | 108 | 2.80% |

the elimination of muscular contractures, additional positive effects were noted:

**Table 2: Additional positive effects**

The frequency of qualitative changes (occurence of speech and chewing, dissapearance

of salivation) was 35%.

Follow-up monitoring (catamnesis) of patient’s condition confirms that for reaching the maximal

positive clinical result with minimal number of surgeries and treatment phases

it is necessary to apply the method of gradual fibrotomy at an early stage of muscle conctractures

forming, before the appearence of ankle conctractures and the deformity of

locomotor apparatus.

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| **Additional positive effects** | **no of patients 3849** | **percent %** |
| Speech improvement | 2386 | 62,00% |
| Mastication | 1886 | 49,00% |
| Deglutition | 1924 | 50,00% |
| Mimics | 847 | 22,00% |
| Emotional behaviour | 2463 | 64,00% |
| Sleep | 1886 | 49,00% |
| Orexia | 2232 | 58,00% |
| **Decrease** | | |
| Strabismus | 2117 | 55,00% |
| Salivation | 2155 | 56,00% |
| Nystagmus | 847 | 22,00% |
| Frequency and severity of epi seizures | 962 | 25,00% |
| **Improvement** | | |
| sight | 654 | 17,00% |
| hearing | 577 | 15,00% |

**Table view of this method compared to the classical**

This table also shows economic and social benefits compared to

classical opeartion at the patients where both methods can be applied.

**1.THE LIST OF WORKS PUBLISHED IN MAGAZINES**

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the priority of 17.08.1987.

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| --- | --- | --- |
|  | **fibriotomy by Ulzibat** | **Classical operation** |
| Number of conctractures | 12 - 16 | 1-2 |
| Number of days spent in hospital | 1 | 7 - 10 |
| Post-operative plaster | no | yes 4 – 6 weeks |
| Invasion of the method | мinimal | big |
| Home care | Only in first 2 days after intervention | 4 – 6 weeks |
| Possible muscle athrophy | no | big |

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