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Original article

ANALYSIS OF MEDIUM-TERM RESULTS ACHIEVED AFTER MICROFRACTURES AND PERFORATIONS (DRILLING) IN LOCALIZED CHONDRAL LESIONS IN THE KNEE JOINT

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ABSTRACT

Introduction: The main advantage of perforative techniques is their atraumatic, non-invasiveness and possibly being done under arthroscopic control.

Purpose: This study aims to compare two methods of operative techniques in the treatment of chondral lesions of the knee.

Materials and methods: The clinical study included 237 symptomatic patients with chondral defects from the period of 2010 – 2018. Patients were divided into 2 groups. The first group included 49 (32.11%) patients with arthroscopic micro-fractures. The second group included 54 (35.49%) patients with arthroscopic subchondral perforation (drilling). The term of follow-up was 36 months. Each patient had at least 4 documented follow-up visits.

Results: Results from grading scales – Lysholm, KOS, MRI – scales, as well as our own scale for evaluating knee function (PS) scale, were documented in each patient's separate file. The average pre-operative Lysholm score was 41.5 ± 6.6 in the microfracture group and 43.0 ± 5.6 in the perforation group. At the 36th-month average, Lysholm's score increased to 86.9 ± 7.3 in the microfracture group and to 86.1 ± 6.6 in the perforation group. During the study, it was also found that a correlation exists between the received results and the age of the patient, the size of the chondral defect, and the tracking period.

Conclusion: The effectiveness of osteoperforative techniques relies on many factors: the age of the patient, the size of the defect, and the tracking period. In the end, mesenchymal stimulation of chondrogenesis results in positive mid-term results in patients with small-sized chondral lesion.

Keywords: Arthroplasty, Subchondral, Knee Joint, Lysholm Knee Score,

INTRODUCTION

Osteochondral defects are common problems with which patients present to the physician [1, 2]. Unfortunately for these patients, such defects rarely heal spontaneously, and they would commonly be offered an operative treatment [3, 4, 5].

The main advantages of the techniques stimulating pluripotent mesenchymal stem cells of the bone marrow are their atraumatism, non-invasiveness, and the possibility of performance under arthroscopic control. Perforation of the subchondral bone plate leads to the migration of the mesenchymal stem cells from the bone marrow into the area of the defect and results in the consequent filling of the defect with fibrous tissue.

The conditions required to achieve good results post microfractures and subchondral bone tunnelisation include the presence of a good blood supply of the subchondral bone, as well as the depth of the chondral lesion not being in excess of 7mm (as determined by MRI).

For us, the surgical community, it is crucial to have an objective outlook and evidence-based information to decide which procedure is best to use [6].

Clinical research was conducted in the Clinic of Orthopaedics and Traumatology of University Hospital Pleven "Dr Georgy Stranski" from 2010 to 2018. During this period, 237 patients with symptomatic osteochondral and chondral lesions underwent arthroscopy. The lesions were localized in the loading areas of the medial and lateral femoral condyles and had previously failed conservative treatment. Of these 103 cases that were studied and followed, all patients were operated on by the same surgeon in the same clinic. All patients included in the study have provided informed consent.

This study aimed to investigate and compare two methods of operative treatment of osteochondral and chondral lesions of the knee joint with the aim of developing a rational surgical approach which ensures optimal anatomical and functional results.

MATERIALS AND METHODS

Patients were divided into 2 groups in accordance with the used surgical technique used for treatment. The second group included 54 (35.49%) patients treated

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Original article

MOSAICPLASTY TECHNIQUES IN THE TREATMENT OF OSTEOCHONDRAL INJURIES

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ABSTRACT

Introduction: Articular cartilage damage is quite a common problem within the general population, especially in the younger and more athletic populations. These defects, if left untreated, would lead to post-traumatic osteoarthritis. Taking into consideration the high frequency and socioeconomic burden of osteoarthritis, the treatment of osteochondral lesions presents a unique challenge for surgeons.

Materials/Methods: Several hypotheses were formulated to discover whether mosaicplasty could be used in order to successfully treat osteochondral lesions. Furthermore, open mini and arthroscopic surgery were tested to determine whether they could achieve the same result as mosaicplasty. A sample of 45 patients from the general population volunteered for the study, of whom 13 patients underwent open mosaicplasty, 17 mini-open and 15 patients arthroscopic mosaicplasty. Assessment of the knee articular cartilage reconstruction was done during each visit, utilising Lysholm and the VAS scale. A histological examination was also performed.

Results: A significant difference was observed between pre- and post-surgical Lysholm score, as well as between pre- and post-surgical VAS score. Additionally, histological analysis confirmed the success of osteochondral autograft transfer and integration into the recipient's knee.

Conclusion: The study demonstrated that several mosaicplasty techniques could be used in articular cartilage reconstruction. Moreover, the histological examination further confirmed the viability of the autograft.

Keywords: Autologous osteochondral graft, Cartilage, Full-thickness defect, Knee, Osteochondral transfer,

INTRODUCTION

Osteochondral lesions, while occurring regularly, present an unremitting challenge to surgeons. The reason for this is that the therapy should not only consider anatomical reconstruction but also the prevention of osteoarthritis as a long-term complication and provide adequate pain relief [1]. This is particularly true for younger patients, for whom hemi or total knee arthroplasty is rarely advised [2, 3, 4, 5, 6]. Using multiple cylinders, mosaicplasty allows the restoration of the contour of the affected surface thus restoring the integrity of the joint surface.

Treatment of osteochondral lesions through mosaicplasty is shown to be an appropriate, cost-efficient method, which could restore the articular cartilage to its original condition in patients for whom arthroplasty is otherwise contra-indicated [2, 7, 8, 9]. Furthermore, mosaicplasty could be performed as a single-stage procedure as an open, semi-open or arthroscopic surgery.

MATERIALS AND METHODS

Clinical research was conducted at the Clinic of Orthopaedics and Traumatology of University Hospital Pleven "Dr Georgy Stranski" from 2010 to 2018.

A sample of 45 patients (27 males and 18 females, mean age 37 ± 10 years) from the general population volunteered for the study, of whom 13 patients were selected to undergo open mosaicplasty, 17 mini-open and 15 patients to undergo arthroscopic mosaicplasty.

Initially, each study began with a pre-operative assessment at the first meeting at the hospital (Table 1). After surgery, patients received follow ups several more times.

The assessment of the successfulness of the knee articular cartilage reconstruction was done during each visit utilising the Lysholm scale [10, 11] and the Verbal Analogue Scale (VAS) scale [12].

Ethical approval for the study was granted by the Medical University - Pleven Research Department. Informed consent was obtained from all individual participants included in the study, and all participants were provided with correct and adequate information to take part in the study. Furthermore, patients were informed about the possible necessity of taking a graft from the contralateral knee.

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Original article

IMPLANTATION OF CHONDROFILLER LIQUID® AS A SCAFFOLD MATERIAL FOR THE TREATMENT OF CHONDRAL LESIONS OF THE KNEE JOINT

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ABSTRACT

Introduction: Trauma, sports, or the normal aging degenerative process may damage the articular cartilage. Surgical methods that are most often used to manage cartilage defects include autologous chondrocyte implantation, mosaicplasty, microfractures, perforations, and joint arthroplasty in cases of severe damage. Another approach is to use collagen gel for cartilage defect reconstruction. Its biocompatibility, high tensile strength, and minimal invasiveness make it an attractive solution. ChondroFiller gel is a two-component collagen implant that could be used in the treatment of traumatic or degenerative chondral lesions. After application, it forms a protective cover for the damaged chondral area and provides structural support for the stem cells that migrate to its collagen matrix. Thus, with ChondroFiller, we aim to restore articular cartilage, prevent further degenerative processes, and return to normal joint function. In this research, we have investigated the application of ChondroFiller during knee arthroscopy to treat knee articular cartilage lesions.

Methods: The clinical study was conducted at the University Hospital—Pleven Clinic of Orthopedics and Traumatology between 2012 and 2023. Seventeen patients (ten males and seven females) with a mean age of 31 years underwent knee chondroplasty with ChondroFiller gel, and their data was analyzed. Knee function was assessed using the Lysholm scale and IKDC score. The follow-up period was twelve months.

Results: Statistical analysis has shown a significant difference between pre-operative Lysholm and pre-operative IKDC score and 3rd month, 6th and 12 months. Significant difference is detected between the 3rd month and 6th and 12th months Lysholm and IKDC scores ($p < 0.05$). No statistical difference was found between 6 and 12 month ($p > 0.05$).

Conclusion: Restoring joint congruity is challenging. Overall, we have found encouraging results by employing ChondroFiller to restore articular cartilage. We believe that Chondrofiller provides an excellent surgical solution to younger patients with chondral defects less than 2cm^2. In our opinion, further research in the field of collagen implants is needed to discover long-term effect.

Keywords: Cartilage repair, Knee Joint, Articular Cartilage, Acellular scaffolds.

INTRODUCTION

Currently, no universal technology exists for the repair of cartilage defects that is suitable for all patients [1]. Various techniques have been discussed, including microfracture, perforation, mosaicplasty, and autologous chondrocyte implantation, among others [1, 2]. Each of these methods was developed with the primary goal of reconstructing cartilage. However, the underlying biological challenge lies within the nature of cartilage itself [3]. Unlike many other tissues in the body, which possess a significant capacity for recovery or at least the formation of scar tissue, hyaline cartilage lacks this ability due to its avascular nature and the limited mitotic potential of chondrocytes [4]. Consequently, after surgical intervention, the injured area is typically covered by fibrous cartilage, which does not possess the same mechanical properties as hyaline cartilage and is more susceptible to degenerative changes [6]. Over time, this can lead to joint degeneration, which will ultimately necessitate arthroplasty.

To address this biological challenge, we need to find a biological solution. One such approach involves the use of an absorbable acellular collagen implant [7]. Ideally, after application, this collagen implant would provide a matrix for multipotent stem cells and chondrocytes, facilitating their migration and differentiation [8, 9]. It should also replicate the natural biological and mechanical properties of hyaline cartilage while providing mechanical support for the migrating cells [8, 9, 10]. At the same time, as a bioabsorbable material, it should also be gradually replaced by newly formed hyaline cartilage [11].

Chondrofiller is an example of an absorbable acellular collagen implant. When applied to the focal area of a cartilage lesion, it forms a protective layer over the injured area and provides a matrix for the migration of stem cells from bone marrow. Promising results have been reported in both in-vitro and in-vivo studies. The purpose of this study was to investigate the use of ChondroFiller liquid® in the arthroscopic treatment of focal articular cartilage lesions of the knee.

Simeonov E. ***Calcaneal reconstruction with a large bony defect with the aid of bioactive glass – case study*. Journal of IMAB, 2024, Jul-Sep, 30(3): 5673-5679; ISSN: 1312-773X**

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Case report

CALCANEAL RECONSTRUCTION WITH A LARGE BONY DEFECT WITH THE AID OF BIOACTIVE GLASS – CASE STUDY

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ABSTRACT

Bone defect reconstruction is a critical component of orthopedic surgery, aiming to restore bones' structural integrity and functionality after injury. Recent developments in biomedical technology have brought forward several advancements in this field, particularly in the development and application of bone graft substitutes.

These materials are engineered to mimic the biological and mechanical properties of the bone, thereby facilitating new bone growth and integration without the limitations and morbidity associated with traditional bone grafts.

Bioactive glass is an example of such innovation in bone graft substitutes. Composed primarily of silicon dioxide, along with calcium oxide and phosphate, it is designed to undergo a chain of reactions to form a layer of hydroxyapatite that is chemically and structurally similar to human bone.

Bioactive glass (BAG) has already found its place in maxilla-facial and spine surgery. However, it is surprising that limited data exist on the use of BAG in trauma patients.

We present a case of a 42-year-old male who arrived at the emergency department following a high-energy trauma to the calcaneus after a fall from 4-5 meters onto his left foot. CT imaging revealed a bone deficit in the affected calcaneus due to the impact trauma. The patient underwent open reduction and internal fixation (ORIF) with bioactive glass (BAG), which was used as an alternative to traditional bone grafting.

Keywords: Bone grafts and substitutes, bioglass, calcaneus fracture,

INTRODUCTION

Bone substitute use in the treatment of fractures has increased in recent years, as has the trend of less invasive surgical protocols [1, 2]. Nowadays, biomaterials' development and improved biomechanical stability provide a case to consider synthetic grafts over auto and allografts [1, 2, 3].

Bioactive glass (BAG) was developed and described by Prof. Larry Hench in the early 1970s. Over the next 50 years, it was extensively studied and developed [4]. Today, BAG is used in regenerative medicine, dentistry, bone infection treatment, and bone reconstruction surgery [5, 6].

Few clinical trials have explored the use of bioactive glass (BAG) in bone regeneration and reconstruction. In a randomized controlled trial (RCT), Heikkila et al. (2011) compared the use of BAG with autogenous bone transplants in a population with depressed lateral tibia plateau fractures [7]. After a one-year follow-up, they found no significant differences in clinical outcomes or the redepression of the articular surface between the two groups [7].

Calcaneal fractures are among the most common and challenging injuries encountered in foot trauma, predominantly resulting from high-energy impacts such as falls from height [8]. Though relatively uncommon, representing around 1-2% of all fractures, they nevertheless represent potentially debilitating trauma. Having a crucial role in weight bearing, gait, and foot biomechanics, fractures in this area significantly affect mobility and quality of life, and proper reconstruction of the bone is thus required [9].

PRESENTATION OF CASE

A 42-year-old male was admitted to the emergency department in University Hospital – Pleven following a fall from a height of 4 to 5 meters, landing on his legs. He presented with severe left ankle pain, rating it 8 out of 10 on the visual analogue pain scale, and was not able to bear weight on the affected limb. Clinical examination

Simeonov E. ***Femoral shaft fracture with total superficial femoral artery and vein rupture following traction mechanism type of injury – a case report.*** **Journal of IMAB, 2024, Jul-Sep, 30(3): 5627-5630; ISSN: 1312-773X**

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Case report

FEMORAL SHAFT FRACTURE WITH TOTAL SUPERFICIAL FEMORAL ARTERY AND VEIN RUPTURE FOLLOWING TRACTION MECHANISM TYPE OF INJURY – A CASE REPORT

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ABSTRACT

The majority of encountered femoral artery lesions are due to penetrating or stab injuries. In cases of closed femoral fractures, artery damages could be missed due to their rarity, as surgeons might not anticipate them on the first encounter with the injured person.

Damage Control Orthopaedics (DCO) provides a pathway to managing patients with severe orthopaedic injuries, particularly when the trauma is complicated by vascular injuries, such as femoral artery rupture. The DCO approach prioritizes stabilizing the patient before definitive bone fixation. This way, it provides a stable environment to reconstruct damaged arteries, prevent the secondary inflammatory response, provide hemodynamic stability, and prevent other complications associated with prolonged surgeries.

In this case, a 48-year-old man experienced high-energy trauma on his left leg and arrived at the emergency department eight hours after the incident. Upon his arrival, a noticeable deformity was observed in the lower thigh area. X-ray imaging disclosed a distal femoral fracture. Further examination revealed a lack of knee and ankle function, full paraesthesia below the knee region, and absent pedal pulses.

Following a CT angiography, a complete rupture of the superficial femoral artery was confirmed. This case was treated with temporary external fixation, femoral artery reconstruction, and prophylactic fasciotomy. External fixation has been later converted to definitive intramedullary fixation.

Keywords: Vascular injury, intramedullary interlocking nail, closed femur shaft fracture,

INTRODUCTION

Closed femoral diaphysis fractures, along with damage to the femoral artery and vein, are rare in clinical practice. The majority of traumatic femoral artery injuries occur due to penetrating injuries secondary to gunshot or stab wounds [1]. Klueger Y, et al., for instance, report that in a 6-year period, only 10 (1.3%) of 765 patients with closed femoral fractures also had femoral artery lesions [2]. Another study by Cargile JS, et al. 1992, which includes data from 1974 to 1991, found only 13 closed femoral fractures with concurrent femoral artery damage [3]. A 10-year retrospective study by Asensio JA, et al. 2006 provides information on 204 men who suffered femoral vessel injury [4]. 34 of them also suffered femoral fractures, although no exact information is available in the study about whether the fracture was closed, open, or caused by penetrating force. It is only reported that the overall majority of the traumas (86%) in this study were caused by penetrating injury [4]. If arterial trauma is not rapidly diagnosed in closed fracture or is missed, it might lead to prolonged ischemia, which may result in severe complications [1].

CASE REPORT

In this case, a 48-year-old man experienced high-energy trauma on his left leg and arrived eight hours after the incident at the emergency department at Pleven University Hospital.

The patient has complained about a lack of knee and ankle function, full paraesthesia below the knee region, and inability to keep weight on the limb. From anamnesis, he has suffered from traction type of mechanism of trauma.

No pedal pulses or Doppler signals were detected, and capillary refill was absent on the affected limb. The distal thigh region has been visually deformed with a visible hematoma.

Subsequently, he was examined by a multidisciplinary team, which included an orthopedic, trauma, vascular surgeon, and anesthesiologist.

E. Simeonov. Long-stemmed hemiarthroplasty with cerclage wiring for the treatment of proximal humeral fracture: A case report of the multimorbid patient. Journal of IMAB, 2023, Jul-Sep, 29(3): 5120-5124; ISSN: 1312-773X

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Case report

LONG-STEMMED HEMIARTHROPLASTY WITH CERCLAGE WIRING FOR THE TREATMENT OF PROXIMAL HUMERAL FRACTURE: A CASE REPORT OF THE MULTIMORBID PATIENT

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ABSTRACT

Introduction: Complex multi-fragmentary fractures of the proximal humerus are a rare type of injury, which represent a major challenge, even to the most experienced shoulder surgeons. Hemiarthroplasty is commonly accepted as the first surgical choice of treatment for three or four-part fractures of the proximal humerus.

Case Report: A 62-year-old female who has sustained complex multi-fragmentary trauma of the proximal humerus presented to the clinic after a low-energy trauma. The patient was managed with a long-stemmed shoulder hemiarthroplasty and cerclage wiring of the fracture area. A good clinical and radiological outcome was observed 5 months post-operatively.

Conclusion: We report the functional, anatomical and radiological outcome of a case of a rare type of proximal humeral fracture that was managed with a long-stemmed hemiarthroplasty and cerclage wire and has shown a good early clinical outcome.

Keywords: Shoulder Fractures, Shoulder Joint, Hemiarthroplasty,

INTRODUCTION

Proximal humerus fractures (PHF) are common; in fact, they are the third most frequent osteoporotic fractures in adults, after hip and wrist fractures [1]. PHFs are also the second most common site of posttraumatic necrosis [2].

Needless to say, not all proximal humeral fractures could be adequately anatomically reconstructed, despite the availability of large numbers of modern fixed angle plates and nail systems [3]. Hence, the necessity for proper management of PHFs. A shoulder arthroplasty could be used for the clinical benefit of patients who have suffered severe trauma of the proximal humerus.

Anatomy

Restoration of Glenohumeral joint (GHJ) anatomy is paramount in order to achieve a good clinical outcome, and as such, a brief description is necessary. The GHJ, most commonly described as a ball-socket joint, permits more mobility than any other joint within the body [4]. The size of the head of the humerus is three times larger than the glenoid fossa. Resulting in the joint heavily depending on both static and dynamic stabilizers to provide both movement and stability. However, an important point to remember is that the shoulder joint acts synergistically with additional articulations, namely: acromioclavicular, sternoclavicular and scapulothoracic. Rotator cuff muscles, while stabilizing the joint, simultaneously allow a greater range of movement (ROM), fix the fulcrum of the GHJ, as well as permit the deltoid and pectoralis major to perform actions [4]. The glenoid labrum, on the other hand, also provides additional passive reinforcement for the GHJ, restricting any anterior or posterior displacement. Further passive stability is provided by the GHJ ligaments: superior, middle, inferior and spiral GH ligament [4].

The proximal humerus is marked by the articular surface of the humerus, lesser and greater tuberosities, neck of the humerus and bicipital groove. The proximal segment then joins the shaft at the site of the surgical neck, just below the metaphyseal flare and the tuberosities.

The reported ranges for humeral retroversion are from 18 to 32 degrees [5]. The average neck-shaft angle is 135 degrees [6].

Dimitrov N., T. Al-Sadek, Dimitrov A., Simeonov E. **Open reduction and fixation of fractures of the head and neck of the humerus in children with the use of intramedullary elastic osteosynthesis.** ***Trakia Journal of Sciences, 2016, Vol.14, No 4, pp. 344-347; ISSN: 1313-7050***

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Original Contribution

OPEN REDUCTION AND FIXATION OF FRACTURES OF THE HEAD AND NECK OF THE HUMERUS IN CHILDREN WITH THE USE OF INTRAMEDULLARY ELASTIC OSTEOSYNTHESIS

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ABSTRACT

Radial neck fractures are not common (5-10%) but are very difficult to treat and have many possible complications. [1, 2] In the conservative treatment it's impossible to reduce severe displaced fractures, resulting in malfunction. Open reduction frequently leads to intra articular calcification, avascular necrosis, and joint stiffness. [3] In most cases, intramedullary nailing allows complete reduction without capsulotomy and very low complication rate of infection.[4] The pin is left in the bone, stabilizes the epiphysis, and prevents secondary displacement. [8, 9]

Keywords: fracture, radial neck, radial head, children, pinning.

INTRODUCTION

Fractures in the proximal part of the radius are epiphyseal lesions of the head and neck metaphysical fractures. They occupy about 5-10% of all traumatic lesions in the elbow joint in children. (1, 2, 3) These fractures are difficult to treat and have many possible complications that affect the function of the elbow joint. Removal of the radial head is now completely abandoned a method of treatment in childhood. Surgical reposition indicated in some cases of severe displacements. Surgical method of treatment, however, is associated with complications, so that's why the first choice for treatment in the conservative treatment. Despite the large number of reposition methods proposed lately, reposition it is not always possible and the risk of secondary displacement of the fracture is too high.

The elastic stable intramedullary osteosynthesis (ESIN) was introduced in 1980 by French authors. (4, 5, 6) It consists in introducing long and slightly curved at the top titanium pin in the intramedullary radial canal percutaneously distal opening up to the proximal part. Reaching the lower aspect of the epiphysis of the proximal radius, the titanium needle elevates the fragment up, with the rotation of the needle axis fragment repositions and the needle remains in this position for a period of 6 to 8 months. The main advantage of this method is that it allows both precise and stable reposition and stable fixation of the fragments retaining periosteal vascularity of the radial head.

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Anatomy of the proximal radius

The blood supply of the radial head is through the periosteum. The whole epiphysis is surrounded by the articular cartilage so that the vessels can only enter into the bone through the periosteum. The supplying one or two arteries have a short intra articular entrance along the metaphysis, which is covered by the annular ligament. Fractures of the neck of the radius raptures a part of the periosteum vessels and reduce the blood supply to the head. Surgical approaches lead to an increased risk of damage to the periosteal vessels, leading to necrosis of the radial head.

Clinical Case

14 years old girl, with trauma in the right elbow joint from a fall, with abducted hand There is a fracture of the radial neck, third degree classification of Judet (7), with displaced fragments kept intact and angulation

Стефановски П., Радев Вл., Богданов Сл., Стефанов И., Симеонов Е, Ковачев М., Цанков Л., Ковачев В., Радев Р. ***Следоперативно обезболяване с LIA при ендопротезиране на колянна става.*** **Анестезиология и интензивно лечение, 2017, бр. 2, стр. 10-13; ISSN: 1310-4284**

СЛЕДОПЕРАТИВНО ОБЕЗБОЛЯВАНЕ С LIA ПРИ ЕНДОПРОТЕЗИРАНЕ НА КОЛЯННА СТАВА

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Абстракт

Увод. Постоперативната болка при ендопротезиране на колянна става (ТКА) обикновено е много силна и редуцирането и е едно предизвикателство пред всеки един анестезиолог. В настоящето проучване ние изследвахме ефикасността на техниката на локалната инфилтрационна аналгезия (LIA) спрямо стандартното обезболяване с опиоиди и нестероидни противовъзпалителни средства (НСПВС).

Методи: В това проспективно проучване ние разделихме 42 пациента, ендопротезирани в нашата клиника на две групи – A и B. Всяка група беше представена от 21 лица. При група A в края на оперативната намеса беше осъществена LIA с 300 mg Ropivacaine, 50 mg Dexketoprofen и 1 mg Adrenalin. При всички пациенти и в двете групи за постоперативно обезболяване бяха изписвани Tramadol и Metamizol, а силата на болката беше оценявана по визуалната аналогова скала (VAS) на 12-сти, 24-ти и 48-ми час, като беше засичана консумацията на аналгетици, стойностите на кр.захар, алкано-киселинно равновесие (АКР), сърдечна честота (СЧ) и артериално кръвно налягане .

Резултати: В групата с направена LIA ние установихме статистически значима редукция на болката, както и снижение на консумацията на опиоиди и НСПВС. Хемодинамиката и стойностите на АКР при двете групи изследвани пациенти не показаха статистически значими разлики.

Обсъждане: Локалната инфилтрационна анестезия при ТКА дава отлични резултати за постоперативно обезболяване с ниски странични ефекти и силно намаление на консумацията на опиоиди. Ние предлагаме нашата модификация на оригиналния метод на Kerr и Kohan като метод за контрол на болката при артропластика на колянната става , който води по-добра удовлетвореност на пациентите.

Проблемът с постоперативната болка не е от днес. В края на XX век според множество проучвания от болка в следоперативния период са страдали от 35 до 70% от всички оперирани (7,4,5).От тогава, до сега ситуацията не се е изменила коренно : по данни на Националната статистическа служба на САЩ годишно около 4,3 милиона американци страдат от остра болка в следоперативния период, а 50 % от тях считат обезболяването си за неадекватно (13). В едно от най-големите проучвания, проведено във Великобритания (2) , включващо над 20000 пациента оперирани в различни хирургически отделения болка със средна интензивност е наблюдавана в 29.7% (26.4-33 %) от случаите , а с по-голяма – в 10.4 % (8.4-13.4%) . При проучването PATHOS (4) , проведено в 746 клиники в 7 страни от Централна и Южна Европа за пореден път е установена неудовлетвореност на пациентите от постоперативното обезболяване и нуждата от оптимизация на протоколите.

В хирургията можем да класифицираме степента на травматичност на оперативните намеси по следния начин (1) :

Табл.1 Класификация на хирургичните оперативни намеси по степен на травматичност

Степен на травматичност		
Ниска	Средна	Висока
Артроскопски операции на колянна става	Тотално ендопротезиране на тазобедрена става	Тотално ендопротезиране на колянна става
Лапароскопска холецистектомия	Отворена холецистектомия	Гастректомия
Ендоскопски операции в гинекологията	Отворена хистеректомия	Радикална простатектомия
Флеботомия	Остеосинтеза при счупвания на крайници	Торакотомия
Операции на щитовидна жлеза	Операции в лицево-челюстната хирургия	Операции в горния етаж на коремната кухина

Една от тежките оперативни намеси свързани със много силна болка в следоперативния период е тоталната артропластика на колянната става (Total knee arthropastic-TKA) (15) В опит да оптимизират мениджмънта на болката, Кер и Kohan в Сидни, Австралия през 2008 година предложиха локалната инфилтрационна анестезия (LIA) с ropivacaine, нестероидно противовъзпалително средство(НСПВС) и епинефрин, като метод на избор при ТКА (8).От тогава, са публикувани множество проучвания в подкрепа на ползите на оригинални-

N. Kirilov, F. Bischoff, M. Kovachev, V. Kovachev, E. Simeonov, H. Gigov, S. Vladeva, M. Nikolov, N. Nikolov, E. Bischoff. *Clinical case of pulmonary cement embolism and adjacent fractures as a complication after vertebroplasty*. Rheumatology, 2023, 31(3): 55-63; ISSN: 1310-0505

CLINICAL CASE OF PULMONARY CEMENT EMBOLISM AND ADJACENT FRACTURES AS A COMPLICATION AFTER VERTEBROPLASTY

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Abstract. *Osteoporosis is a skeleton disease with reduction in bone mass and disruption of the bone microstructure. A rare secondary form is pregnancy-associated osteoporosis. The standard method for determining bone density is DEXA measurement (dual X-ray absorptiometry). With the radiofrequency echographic multi spectrometry (REMS) method this is done using ultrasound without radiation exposure. Osteoporosis often leads to pathological fractures of the vertebrae. In case of severe pain and immobilization vertebroplasty is considered standard procedure. However, it can have side effects such as cement leakage into surrounding tissue, pulmonary embolism and adjacent fractures. We present a 27-year-old female patient with compression fractures of the Th8 and Th12 5 months after labor. DEXA measurements showed values of the T-score at hip neck -2.5 SD (total) and -3.5 SD (L1-L4) at spine. The fractures of the Th8 and Th12 were then treated with vertebroplasty. A post-operative CT showed cement leakage and extravasation, as well as bilateral cement embolism of the proximal branches of the pulmonary arteries and progression of the height loss of Th5, Th7 and L1. Pulmonary cement embolism is a rare complication of vertebroplasty. Cement leakage is more frequent complication, although most of the time asymptomatic. These risks of complications make the alternative conservative treatment worth considering before proceeding to surgical interventions. Only after failure to achieve adequate pain management kyphoplasty or vertebroplasty should be considered, due to the risks of prolonged immobilization of the patient leading to further bone and muscle loss. Pregnancy associated osteoporosis is very rare. The radiation free REMS method is suitable for pregnant women. Vertebroplasty offers pain relief and rapid mobilization of the patient. However, it poses a risk of numerous complications. The osteoporotic fractures of the vertebrae are usually stable and a conservative treatment prior to surgical interventions should always be considered.*

Key words: *pregnancy associated osteoporosis, compression fracture, vertebroplasty, complications, cement pulmonary embolism*

INTRODUCTION

Osteoporosis is a systemic disease of the skeleton with a reduction in bone mass and the resulting disruption of the microstructure of the bone [1]. It is becoming increasingly important in the current aging population. For this reason, the WHO included osteoporosis in the list of the 10 most important diseases worldwide.

In addition to the classic primary osteoporosis, in which there is a loss of bone mass due to the reduction in movement and the general reduction in muscle mass, there is secondary osteoporosis. Secondary osteoporosis can have many different causes, e.g. metabolic, neoplastic or hormonal.

A rare disease is pregnancy-associated osteoporosis (PAO). With a prevalence of 0.4/100,000 women, it is one of the very rare type of secondary osteoporosis [2]. Due to the rarity, a high number of unreported cases can be assumed. Only about 120 cases have been reported in the literature [4]. The disease usually occurs in the 3rd trimester of pregnancy or during the subsequent lactation period, which is why it is also referred to as pregnancy and lactation-associated osteoporosis (PLO) [2, 4]. The average age of the affected women is around 27 years [5].

The definition of pregnancy-associated osteoporosis is based on the WHO definition of osteoporosis with a reduction of the T-score in the DEXA measurement under -2.5 standard deviations with or without a fracture [1]. However, there must be a direct temporal connection to pregnancy or breastfeeding.

The human bone is subjected to a continuous process of formation and resorption throughout life. About 4-10% of the total bone mass is renewed an-

Н. Димитров, Я. Николов, Й. Иванов, Е. Симеонов, Ц. Ценков. *Висок процент на увреди на ротаторния маншон при пациенти с предна нестабилност – данни от една институция*. Български медицински журнал (БМЖ) бр. 3/2024 г. ISSN: 1313-1516

ВИСОК ПРОЦЕНТ НА УВРЕДИ НА РОТАТОРНИЯ МАНШОН ПРИ ПАЦИЕНТИ С ПРЕДНА РАМЕННА НЕСТАБИЛНОСТ – ДАННИ ОТ ЕДНА ИНСТИТУЦИЯ

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HIGH RATE OF ROTATOR CUFF INJURIES IN PATIENTS WITH ANTERIOR SHOULDER INSTABILITY – DATA FROM A SINGLE INSTITUTION

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Резюме. Въведение: *Стабилността на раменната става се определя от анатомичния комплекс от статични и динамични стабилизатори. Мускулите на ротаторния маншон спадат към динамичните стабилизатори; те осъществяват балансиране на двойките сили около гленохумералната става. Така се създава баланс между функционална мобилност и стабилност на рамото, подпомаган от отрицателното ставно налягане. При увреди на динамичните стабилизатори (в частност ротаторния маншон) първично се лекува тази патология, като понякога се неглижира ролята на статичните стабилизатори. Това води до понижени нива на пациентска задоволеност и до понижени резултати. Неясен е процентът на съпътстваща нестабилност при пациенти с болест на ротаторния маншон.* ***Целта*** *на проучването е да се проследят артроскопски оперирани пациенти в една институция по повод болестта на ротаторния маншон и да се определи какъв е процентът на открита съпътстваща нестабилност и влиянието ѝ върху лезиите на маншона.* ***Материал и методи:*** *Извършено бе ретроспективно проучване за периода 2002–2018 г.+ в една институция. Бяха определени критерии за включване и изключване на пациенти – артроскопски лекувани пациенти с диагноза нестабилност на раменна става. Беше проследена и анализирана съпътстващата документация на пациентите, включително данни от клиничен преглед, предоперативен и следоперативен обем движения, образни данни и функционални резултати. Бяха отчетени усложненията.* ***Резултати:*** *Оперирани бяха 326 пациенти с нестабилност на раменната става, от които 297 с предна нестабилност; 24 – със задна нестабилност, и 5 пациенти – с мултидирекционна нестабилност. 75/326 имаха съпътстващи лезии на ротаторния маншон, от тях: 45 пациенти – с пълни руптури на поне един от мускулите, 25 пациенти – с частични руптури на маншона, и 5 пациенти – с неубедителни обективни данни за лезии, но с обективни клинични признаци. При 30% от пациентите, оперирани артроскопски по повод на импиндӂмънт синдром, лезии на ротаторния маншон, SLAP – лезии или друга патология на сухожилието на дългата глава на м. бицепс брахи и тъканите около него, се открива различна степен на нестабилност. При 80% от тези пациенти се е наложило различно оперативно лечение в добавка към лечението на основната патология.* ***Заключение:*** *Анализът на патологията на рамото като раменен комплекс, а не като отделни патологии на различните му структури, може както да ни предпази от пропуски, така и да доведе до бързи, удовлетворителни резултати при всички пациенти, особено при тези, които имат високи изисквания към физическото си състояние и спортно-техническите си умения.*

Ключови думи: *ротаторен маншон, предна раменна нестабилност, артроскопия*

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Abstract. Introduction*. The stability of the shoulder joint is determined by an anatomical complex of static and dynamic stabilizers. The muscles of the rotator cuff are part of the dynamic stabilizers and play a role in balancing the force couples around the glenohumeral joint. This creates a balance between functional mobility and stability of the shoulder, supported by negative intra-articular pressure. When injuries occur to the dynamic stabilizers (specifically the rotator cuff), treatment often focuses primarily on these pathologies, sometimes neglecting the role of static stabilizers. This can lead to lower levels of patient satisfaction and suboptimal results. The percentage of concurrent instability in patients with rotator cuff*

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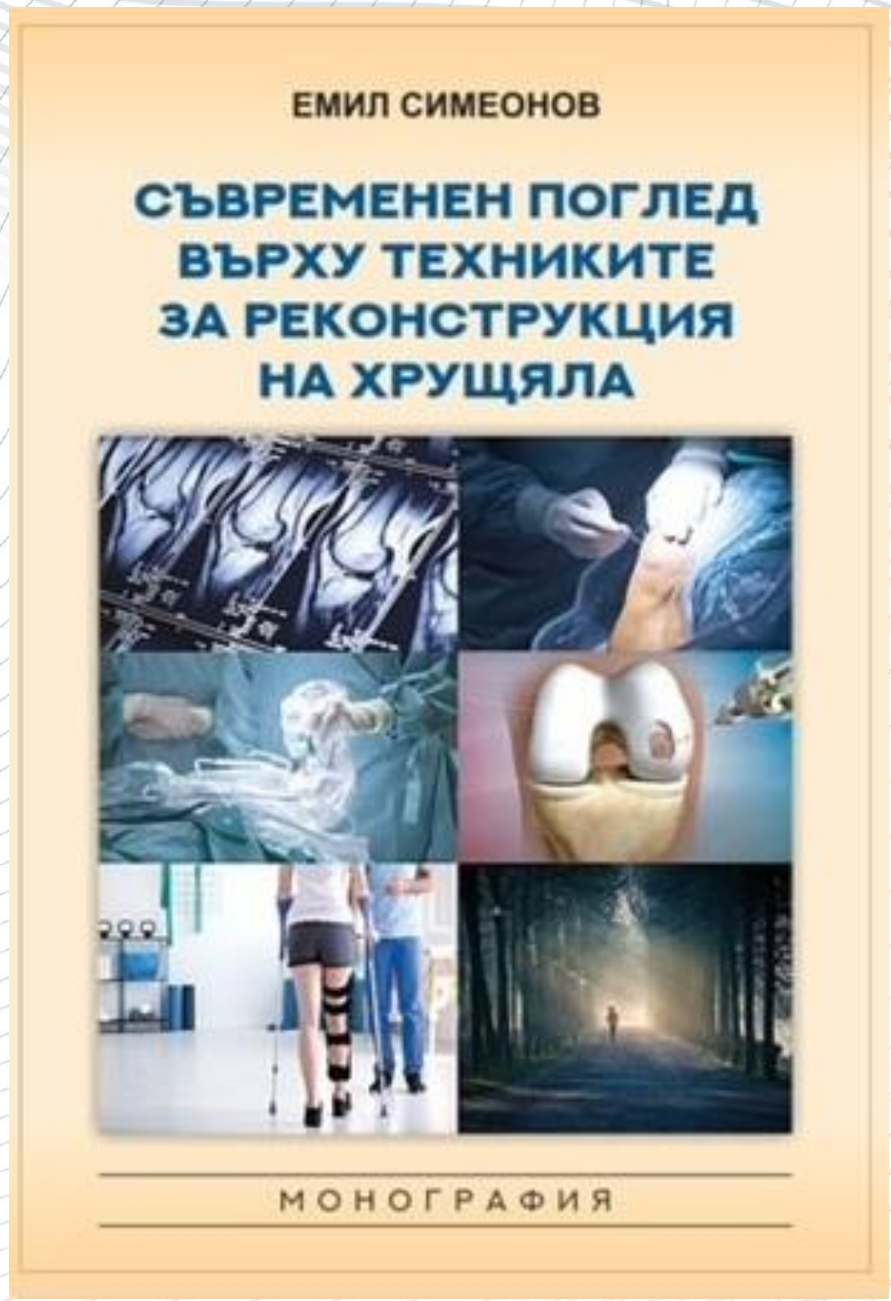

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Катедра по ортопедия и травматология

СЪВРЕМЕНЕН ПОГЛЕД ВЪРХУ ТЕХНИКИТЕ ЗА РЕКОНСТРУКЦИ НА ХРУЩЯЛА

МОНОГРАФИЯ

д-р Емил Симеонов, д.м.

ПЛЕВЕН, 2024

СЪВРЕМЕНЕН ПОГЛЕД ВЪРХУ ТЕХНИКИТЕ ЗА РЕКОНСТРУКЦИЯ НА ХРУЩЯЛА

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Simeonov E. ***Neglected both-bone forearm fracture with distal radioulnar joint dislocation: a case report.*** **J of IMAB. 2024 Oct-Dec, 30(4): 5806-5810. ISSN: 1312-773X.**

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OPEN ACCESS

Case report

NEGLECTED BOTH-BONE FOREARM FRACTURE WITH DISTAL RADIOULNAR JOINT DISLOCATION: A CASE REPORT AND BRIEF LITERATURE REVIEW

Emil Simeonov
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ABSTRACT

Introduction: In this case, we discuss a patient with a neglected and malunited both-bone forearm fracture with distal radioulnar joint dislocation. This pattern of fracture by itself is uncommon, but the initial negligence of this trauma makes it even more rare and challenging for surgical treatment.

Case report: The main aim of the surgery was to restore the forearm's function and anatomy. After thorough preoperative preparation, including planning the level of resections, the patient was treated with open reduction and internal fixation with a limited contact dynamic compression plate. The distal radio-ulnar joint was fixed with 2 K-wires. On control follow-up six months later, the resection sites were fully consolidated, with no visible deformation of the forearm. Pronosupination was restored up to 60% of normal functional arc.

Conclusion: This case has shown that even with careful restoration of forearm anatomy, results of the surgical treatment in neglected and malunited both-bone forearm fracture with distal radioulnar dislocation will not be a priori good or excellent. Surgeons need to remind the patients that the return of the function of the upper limb to the degree before the trauma cannot be guaranteed.

Keywords: Forearm, Galeazzi, Reconstruction, Deformity, Malunion,

INTRODUCTION

In 1934, Ricardo Galeazzi presented a series of 18 patients with a specific fracture pattern to the Lombard Surgical Society [1]. This combination of a radius shaft fracture with a dislocated distal radioulnar joint (DRUJ) is now known by his name [1]. Interestingly, this fracture pattern, originally described by Cooper in 1822, is named after Professor Galeazzi, who thoroughly described the incidence, pathomechanics, and treatment of this specific fracture pattern. [1, 2].

For fractures involving both the radius and ulna with DRUJ dislocation, terms such as Galeazzi-like or Galeazzi-variant fracture are used, following a report by Mikic in 1975 [3, 4, 5], even though this combination was first described by Knight and Purvis in 1949 [6, 7].

Later, Albert SM, et al. (1963) also published a report on DRUJ dislocation with concomitant forearm bone fractures, although the study lacked thorough details [7, 8]. Vesely's research in 1967 similarly did not provide extensive information on the management or outcomes of Galeazzi fractures, only noting that out of 201 cases managed over five years, only six involved both-bone forearm fracture with DRUJ dislocation [7, 9]. Few reports since have been published regarding this special pattern of fracture (including those by Mikic ZD, et al., Dabas V, et al., Ryan MK, et al., Bruckner JD, et al., Budgen A, et al., Jenkins NH, et al., and Vaishya R, et al.), still, none of them have addressed neglected Galeazzi-variant fractures (both-bone forearm fracture with DRUJ dislocation) [3, 5, 7, 10, 11, 12, 13].

The optimal approach for treating acute forearm fractures in adults involves restoring anatomical alignment, ensuring stable internal fixation, and maintaining the blood supply to the periosteum using a limited contact–dynamic compression plate (LC-DCP) [14, 15]. Failing to achieve these goals can result in malunion, nonunion, or pseudoarthrosis, necessitating complex reconstructive surgery [15, 16]. In our case, the challenge and uniqueness arose from the initial neglect of the fracture, which required special reconstructive surgery.

P. Vasilev, S. Ramadan, I. Yordanova, E. Simeonov. Erythema multiforme- like eruption induced after immune checkpoint inhibitor and target therapy in a patient with Melanoma Malignum – a case report. Acta Medica Bulgarica; ISSN: 2719-5384 - ***приета за печат***

Abstract

Introduction

Erythema multiforme is an acute polyetiological hypersensitivity reaction characterized by polymorphic rashes of the skin and the mucous membranes. The triggering factors for the disease might be viral and bacterial infections, tumors, autoimmune connective tissue diseases, drugs. Immune checkpoint inhibitors are used for the treatment of multiple oncological diseases but they often cause cutaneous immune-related adverse events. Pembrolizumab is a monoclonal antibody that blocks the programmed death 1 receptor and leads to T-cytotoxic lymphocyte activation. Vemurafenib is a BRAF inhibitor which is used for the treatment of metastatic melanomas positive for BRAF V600E mutation and blocks tumor cell proliferation. Both of these agents improve survival of melanoma patients, but the modified immune condition often results in severe side effects.

Case presentation

We report a 77-year-old male patient who developed severe erythema multiforme-like eruption associated with Vemurafenib target therapy and Pembrolizumab immunotherapy for metastatic melanoma malignum.

Conclusion

Immune checkpoint inhibitors and target therapy prolong the patient's live, but various immune related cutaneous adverse reactions like erythema multiforme-like eruption or even Stevens–Johnson syndrome and toxic epidermal necrolysis can occur. Dermatologists play an important role in evaluating and managing these cutaneous toxicities. Our case leads to the conclusion that physicians must carefully observe general and dermatological status during the melanoma management and follow up.

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СЛУЖЕБНА БЕЛЕЖКА

Настоящата се издава в уверение на това, че статия **Erythema multiforme-like eruption induced after immune checkpoint inhibitor and target therapy in a patient with Melanoma Malignum** с авторски колектив Preslav Vasilev, Sibel Ramadan, Ivelina Yordanova, Emil Simeonov е ОДОБРЕНА за печат в списание **Acta Medica Bulgarica** (реферирано многопрофилно периодично издание на ЦМБ, МУ – София).

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Case report

A CASE REPORT FOR PHYSIOTHERAPY PROGRAM IN ADULTHOOD PATIENTS WITH IDIOPATHIC CERVICAL SCOLIOSIS – ANALYSIS AND RESULTS

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ABSTRACT

When scoliosis is inadequately treated during childhood and adolescence, it persists into adulthood, often contributing to more pronounced degeneration of the intervertebral discs and more severe pain. In this study, we investigated the effect of physiotherapy on neck pain and cervical spine mobility in adult patients with idiopathic cervical scoliosis.

Three adult patients diagnosed with adolescent idiopathic scoliosis were included, each presenting with three spinal curvatures. Clinical complaints were related to cervical scoliosis. Treatment comprised paraffin wax application, TENS therapy, and Schroth exercises. Outcome measures included anthropometric assessments and a visual analogue scale for pain. Patients were monitored for three months, with the initial 14 days dedicated to conventional physiotherapy and Schroth exercises, which were continued at home for the remaining 3-month period.

All patients reported a significant reduction in neck pain and improved cervical spine mobility, reflecting short-term benefits for both subjective and objective complaints associated with idiopathic cervical scoliosis in adulthood. Adding Schroth exercises to standard physiotherapy provides further advantages in improving posture among patients with idiopathic cervical scoliosis.

Keywords: Idiopathic scoliosis, Neck pain, Physiotherapy, Schroth exercise

INTRODUCTION

Today, scoliosis remains one of the most common spine deformities [1, 2]. It is a complex three-dimensional spine deformity, usually clinically defined as a lateral curvature of the spine greater than 10 degrees on a coronal plane. According to the Scoliosis Research Society, it is the most common spinal deformity, affecting around 2% to 3% of the pediatric population [3]. Around 80% of scoliosis cases are idiopathic scoliosis. Adult patients usually present with a higher number of complaints than the pediatric population.

From the point of view of biomechanics, the spine's curves absorb the load imposed during the movement of the vertebrae. When these physiological curvatures are changed, unfavorable biomechanical conditions arise for the spine, intervertebral discs, and the other adjacent structures. In individuals with scoliosis, all normal spinal curvatures are altered, causing a significant change in the load distribution on the intervertebral discs [4]. The cervical and lumbar regions bear the greatest load. Typically, intervertebral joints carry 3–25% of the axial load, but this load increases with the progression of arthrosis and narrowing of the intervertebral space. The load on these joints may reach 70% in patients with spondylosis. Intervertebral discs provide essential mobility for the spine, absorbing most of the load and redistributing it in all directions. Ligaments and muscles reinforce and protect the spinal motion segments from excessive stress and limit spinal movements [5, 6].

From an etiological standpoint, back pain is categorized into structural (90%) or non-structural causes, with scoliosis and spondylarthrosis classified as having structural origin of back pain [7]. Degenerative changes in the spine's structures are primarily caused by aging, genetic predisposition, and developmental abnormalities

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Case report

PAINLESS NEURALGIC AMYOTROPHY (PARSONAGE-TURNER SYNDROME) – A CASE REPORT

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ABSTRACT:

Background: Neuralgic amyotrophy (NA) is a rare disorder typically characterized by an abrupt onset of upper extremity pain followed by progressive muscle weakness, atrophy and occasional sensory loss. Although NA has been hypothesized to be an autoimmune-mediated disorder. It is considered a primarily clinical diagnosis, electrodiagnostic evaluation is essential for the diagnosis confirmation and can exclude other etiologies. Electrodiagnostic findings can reveal patchy damage to any nerve within the brachial plexus.

Case Description: In the current case report, we are presenting a 43-years-old man admitted to the Neurology Department of "UMHAT Dr. Georgi Stranski" in Pleven, Bulgaria, with decreased muscle strength and limited active movements in the left upper shoulder for approximately 3 weeks. The patient denied feeling any pain during the onset and afterwards. He had no previous infections, vaccinations and history of other diseases. The detailed neurological examination showed the left upper extremity decreased antigravity strength in the deltoid and infraspinatus muscles with marked atrophy of the same. Hyporeflexia of the left biceps and brachioradialis deep tendon reflexes was present. Electromyography findings showed denervation of the deltoid and infraspinatus muscles. Initial reinnervation of supraspinatus and cervical paraspinal muscles was present. The diagnosis of NA was confirmed by both the neurological examination and the electrophysiological findings.

Conclusion: We are presenting a clinical case of idiopathic neuralgic amyotrophy with atypical painless presentation and discussing the most significant aspects of the disorder with regards to the difficulties in approaching the correct diagnosis. A better understanding of the NA clinical symptoms and signs variability improves the diagnostic and therapeutic approach.

Keywords: Neuralgic amyotrophy, Personage-Turner syndrome, painless,

BACKGROUND

Neuralgic amyotrophy (NA), also known as Parsonage–Turner syndrome (PTS) and idiopathic brachial neuritis, is a rare disorder typically characterized by an abrupt onset of upper extremity pain followed by progressive muscle weakness, atrophy and occasionally sensory loss. Although PTS has been hypothesized to be an autoimmune-mediated disorder, its etiology is still unknown. NA is considered a primarily clinical diagnosis, electrodiagnostic evaluation is essential for the diagnosis confirmation and can exclude other etiologies. [1, 2, 3, 4] Electrodiagnostic findings can reveal patchy damage to any nerve within the brachial plexus. NA is often misdiagnosed as cervical radiculopathy, spinal cord compression, adhesive capsulitis, rotator cuff impingement, labral tear, glenohumeral osteoarthritis, malignancy and even amyotrophic lateral sclerosis. [5]

CASE DESCRIPTION

We present a 43-year-old man, admitted to the Neurology Department of "UMHAT Dr. Georgi Stranski" Pleven, with decreased muscle strength and limited active movements in the left upper shoulder for about 3 weeks. He reported that his complaints started the following morning after heavy physical activity related to his job. The patient denied any feeling of pain at the onset and afterwards. He had no previous infections, vaccination and history of other diseases. The detailed neurological examination showed that the left upper extremity decreased antigravity strength (2/5) in the deltoid and infraspinatus muscles with marked atrophy of the same. Hyporeflexia of the left biceps and brachioradialis deep tendon reflexes was present. The left arm exteroceptive sensation was normal. Normal strength, sensation, and reflexes were present in the right upper extremity without increased tone, fasciculations, or atrophy. Provocative tests for radiculopathy, musculoskeletal shoulder pathology, and peripheral nerve entrapment were negative. The initial laboratory workup was completely unremarkable. (image 1) (image 2) Photos of the patient show limited movements of the left arm and atrophy of the left deltoid and infraspinatus muscles. (image

Kambouraova M, Ivanova B, Tihomirova R, Mineva-Dimitrova E, Ivanova A, Dimitrov D, Yordanova Z, Simeonov E, Vitkova T. *Health services consumption and barriers in the health care of persons of Roma origin in Bulgaria.* J of IMAB. 2024 Sep – Dec. ISSN: 1312-773X

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Original article

HEALTH SERVICES CONSUMPTION AND BARRIERS IN THE HEALTH CARE OF PERSONS OF ROMA ORIGIN IN BULGARIA

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ABSTRACT:

Introduction: Persons of Roma origin often face serious inequities concerning their state of health and their access to good quality health services.

The **purpose** of the study is to analyze the health services consumption and barriers in the health care of persons of Roma origin in Bulgaria.

Material/Methods: The cross-sectional study was conducted, and a semi-structured face to face interview were applied in 2018. Adult citizens of Roma origin were covered as follows: residents of Knezha - a total of 59 people and households from the towns of Kneja and Kotel - 18 families (50 persons). The cities are representative of settlements of medium size with separate neighborhoods of Roma origin. Data processing was performed by SPSS v.24.

Results: Over two-thirds of the covered persons of Roma origin do not have health insurance. Due to a lack of health insurance, 14% of the households were reported a refusal to provide health care by general practitioners (GPs) and specialists in out-hospital care. 82.1% of Roma women have never had a mammography, and 71.4% a smear test. 83.3% of the households required direct payment for the provision of health services, which corresponds to the high share of informal payments in health care in Bulgaria (34 % in 2023), but among the Roma population, this share is significantly higher.

Conclusion: The Roma population in Bulgaria is characterized by an unfavourable health profile, and the health services provided to the persons of Roma origin are inadequate to their needs.

Keywords: Roma's health, health insurance, health inequities, access to health care,

INTRODUCTION

Persons of Roma origin often face serious inequities concerning their state of health and their access to good quality health services.

The poor health status of Roma is closely linked to the social determinants of health. In the specific context of the health status of Roma, it is important to understand that the health status of the Roma population, and differences in health status among the Roma population in different countries, may be due to factors that are not related to an individual's status as a member of the Roma ethnic group but may be the result of other socioeconomic, cultural or natural conditions in the country in which Roma live [1].

The WHO Commission on Social Determinants of Health views the process of social exclusion as a major cause of health inequalities among both migrants and ethnic minorities [2]. Health policies aimed at reducing health inequalities for Roma must be tailored to education, the economy, the labour market, housing, the environment and territorial development and must form part of an overall policy framework enabling effective integration [3].

Population surveys implemented show that the socioeconomic status of the Roma population is very low and the lack or insufficient education and low incomes are associated with an unhealthy lifestyle [4]. Different health practices and traditions, lack of empathy and cultural sensitivity of medical staff also play a role according to the International Organization for Migration [5].

Data on vaccination coverage in the Roma population show that it is generally lower than in the non-Roma population, with variations across European countries. Vaccination coverage in Croatia, Hungary and the Czech Republic is almost equal to that of the general population. In other countries with the highest proportion of Roma population, such as Bulgaria, Romania, Slovakia, etc., coverage is at a relatively low level [6].

A number of studies have reported that Roma com-

Публикации и доклади, публикувани в нереферирани списания с научно рецензиране или публикувани в редактирани колективни томове

Симеонов Е., Балтов Е., Ковачев В. ***Възможности на метода "Мозаечна пластика" при лечението на локализирани остеохондрални дефекти в колянна и глезенна става.*** **Сборник доклади X конгрес на БОТА (Българска ортопедична и травматологична асоциация), 17-21 окт. 2007 г., Боровец, стр. 149-157; ISBN: 978-954-561-230-5**

12. ВЪЗМОЖНОСТИ НА МЕТОДА "МОЗАЕЧНА ПЛАСТИКА" ПРИ ЛЕЧЕНИЕТО НА ЛОКАЛИЗИРАНИ ОСТЕОХОНДРАЛНИ ДЕФЕКТИ В КОЛЯННА И ГЛЕЗЕНА СТАВИ

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Въведение: *През последните години бяха разработени и въведени в практиката редица оперативни методи за възстановяване на остеохондрални лезии, засягащи носещи ставни повърхности. Целта на настоящото съобщение е да представи възможностите на метода " мозаечна пластика" за осъществяване на хиалинно, или хиалиноподобно възстановяване в засегнатите зони както и ранните следоперативни резултати.*

Материал и методи: *За периода октомври 2004 – май 2007 год. е направена " мозаечна автоостеохондропластика" на 16 пациента /6 жени и 10 мъже/ на средна възраст 32 /23 – 47/ години. Хирургичната процедура е извършена както следва: медиален бедрен кондил – 13 случая, латерален бедрен кондил - 1 случай, тибиално плато – 1 случай, талус – 1 случай. Големината на остеохондралния дефект е от 15 – 35 мм в диаметър с дълбочина под 10 мм. При всички е направена "мозаечна пластика" с артротомия. Срокът на проследяване е 16 /2 – 30/ месеца. При оценката на резултатите са използвани клинични тестове /knee score/, CT, MRI, диагностична артроскопия, хистологично изследване на реципиентната и донорната зона, Bandi score.*

Резултати: *Използвайки горепосочените методи за оценка, много добри и отлични резултати са получени при 14 пациента. При направените диагностични артроскопии се установи наличие на конгруентна ставна повърхност, а хистологично – хиалинно покритие на трансплантираните присадъци и фиброхрущял в донорната зона. В два от случаите се наблюдава транзиторна постоперативна болезненост в донорната зона и изливи в колянната става.*

Заключение: *Изхождайки от получените резултати и опита на по-широки студии, може да се приеме, че остеохондралната трансплантация е ефикасен метод за възстановяване на ограничени остеохондрални и хондрални дефекти в носещите стави, особено в активна възраст.*

Ключови думи: *остеохондрални дефекти, mosaicplasty, OATS, ACI, микрофрактури*

POSSIBILITIES OF THE "MOSAICPLSTY" METHOD IN THE TREATMENT OF LOCALIZED OSTEOHONDRICAL DEFECTS IN THE KNEE AND ANKLE JOINTS

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Introduction: *in the recent years a number of operating methods for repairing of osteohondric lesia concerning the carrying joint plains were developed and introduced. The purpose of the present announce is the represent the possibilities of the mosaic plastic method for applying of hialin or hialin-like recovery in the damaged zones as well as in the early post-operative results.*

Materials and methods: *for the period October 2004-May 2007 mosaic auto steohondroplastic was made for 16 patients (6 women and 10 men) at average age 32 (23-47). The surgical procedure was done as follows: medial hip condil – 13 cases, lateral hip condil – 1 case, tibial plateau – 1 case, talus – 1 case. The size of the osteohondric defect is from 15-35 mm in diameter and depth under 10 mm mosaic. In all cases plastic with arthrotomy was used. The time of observing is 16 (2-30) months. Clinical tests (knee score), CT, MRI, diagnostical arthroscopy, histological tests of the recipient and the donor zone, and Bandi score were used in assessing the results.*

Results: *Using the fore mentioned methods of assessment, the results were very good and excellent in 14 patients. In the completed diagnostical arthroscopies presence of congruent joint surface was found, and histologically – hialin cover of the transplanted grafts and fiber cartilage in the donor zone. In two of the cases we saw transitory post-operative pain in the donor zone and leakage in the knee joint.*

Conclusion: *Having in mind the results and the experience from larger studies, we can accept that the osteohondric transplantation is an effective method for recovery of limited osteohondric and hondric defects in the carrying joints, especially in active age.*

Ковачев В., Ковачев М., Матков О., Симеонов Е., Благоев Е., Гигов Хр. ***Нашият опит при лечението на обширни костни дефекти и патология на костното сращване.*** **Ортопедия и травматология, 2017, 54(2): 67-74; ISSN: 0473-4378**

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НАШИЯТ ОПИТ ПРИ ЛЕЧЕНИЕТО НА ОБШИРНИ КОСТНИ ДЕФЕКТИ И ПАТОЛОГИЯ В КОСТНОТО СРАСТВАНЕ

В. Ковачев, Б. Матев, М. Ковачев, О. Матков, Е. Симеонов, ХР. Гигов, Алшаргаби, Е. Благоев
КОТ – МУ ПЛЕВЕН

OUR EXPERIENCE IN THE TREATMENT OF EXTENSIVE BONE DEFECTS AND PATHOLOGY IN BONE HEALING

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РЕЗЮМЕ

Авторите анализират клинични резултати при 24-ри пациента за периода 1991-2014 г., лекувани с васкуларизирани костни присадъци при дефекти от различно естество и костна патология. Проследявани средно 10 год, средна възраст 40 години (от 21 год. до 61 год.). Дължината на костния присадък варира от 6,5 см - 23 см

- Локализации на костните дефекти: тибия -8, антебрахиум – 3, хумерус – 2, мандибула – 1, калканеус – 1, асептични некрози на бедрена глава – 4.

Петима от пациентите не бяха проследени поради това че трима не се явиха на контролни прегледи, а двама загинаха при ПТП.

ИНДИКАЦИИТЕ СА:

1. Посттравматични дефекти (дефект-псевдоартроза) на дългите тръбести кости с дължина над 6 см. Три случая с локализация на дистална тибия след Gustilo-3A фрактури.

2. Инфект псевдартрози след обширен дебридман, включващ и резекция на част от коста при три антебрахиума, три дистални тибии и една мандибула, един хумерус.

3. Забавено сращване и несращване. Локализация: две тибии.

4. Асептична некроза на бедрана глава 4-ри случая/ 2-ра – 3-та степен по Ficat/.

При васкуларизиран костен трансфер със имедиатна съдова анастомоза, имаме тенденция за костна хипертрофия на присадъка в областа на долния крайник, а в областа на горния с костна ремоделация без видим рентгенологичен костен

ABSTRACT

The authors present the clinical results amongst 24 patients with different defects and bone pathology during the period between 1991 and 2014, treated with vascularized bone grafts. Checked on every 10 years, average age 40 years old (between 21 and 61). The length of the bone graft varies from 6,5 cm to 23 cm.

- Localization of the bone defects: tibia – 8, antebrachium – 3, humerus – 2, mandible – 1, calcaneus – 1, aseptical necrosis of the femoral head – 4.

Five of the patients were not completely monitored as three of them did not come for check-ins and two died in car accidents.

INDICATIONS:

1. Posttraumatic defects (pseudarthrosis) of the long bones over 6 cm long. Three of the cases had distal localization of the tibia after Gustilo-3A fractures.

2. Infected pseudarthrosis after extensive debridement including bone resection in three antebrachiums, three distal tibias, one manidible and one humerus.

3. Prolonged healing or non-union. Localization: two tibias.

4. Aseptic necrosis of the femoral head – four cases (second and third Ficat stages).

When using vascularized bone grafts with imme-

V. Kovachev, L. Stokov, M. Kovachev, E. Simeonov, G. Georgiev. *Primary fibrosarcoma of the distal femur. Report of a rare case*. Ортопедия и Травматология, 2022, 59(3): 151-157; ISSN: 0473-4378

Primary fibrosarcoma of the distal femur. Report of a rare case

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Abstract— Fibrosarcoma of bone is a relatively rare malignant neoplasia, representing less than 5% of all bone tumors. It is distinguished from other bone sarcomas by the presence of spindle-shaped tumor cells located among intertwining bundles of collagen fibers, without any other type of histological differentiation, such as the formation of cartilage or bone.

In the present report, we present a rare case of primary fibrosarcoma in the distal femur in a 45-year-old patient with complaints of mild pain and swelling in the right knee joint for approximately 6 months. After imaging evaluation, a biopsy was performed; in the second stage, a subsequent resection of 16 cm of the distal femur and its replacement with a tumor endoprosthesis was performed. Three months postoperatively, no local recurrence or metastasis of the tumor was observed.

Keywords— fibrosarcoma, diagnosis, surgical treatment.

1. Introduction

Fibrosarcoma (FS) of bone is a malignant mesenchymal tumor characterized by immature proliferating fibroblasts or undifferentiated anaplastic spindle cells. On immunohistochemical study, the tissue is negative for the specific markers characteristic of other bone tumors, so the diagnosis of FS is a diagnosis of exclusion. FS of the bone can be primary or less often secondary after radiotherapy in the area or other pathological conditions (Paget's disease, chronic osteomyelitis, progression or dedifferentiation, mainly from chondrosarcoma, bone marrow infarction, fibrous dysplasia, etc.)[8,12].

MacDonald and Budd[9] in 1943 and Phemister[11] in 1948 were among the first to distinguish FS of bone as a separate neoplasm of the skeleton. Its incidence ranges from 4% to 8% of all primary bone tumors, occurring in the second to seventh decades of life. Secondary FS comprises approximately 25-30% of bone FS. FS involves the meaphyses of long bones, especially the distal femur. Isolated diaphyseal or epiphyseal localizations are extremely rare. Exceptionally, multiple fibrosacromas are also found.

M. Kovachev, V. Kovachev, E. Simeonov, H. Gigov, B. Sadursanska. *Single Nerve Transfer in Case of Partial Pre-Ganglionic Injury C5 and Avulsion Injury C6.* Clinical Case Reports Journal, 2023, 4(4): 1-6; ISSN: 2767-0007

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Single Nerve Transfer in Case of Partial Pre-Ganglionic Injury C5 and Avulsion Injury C6

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Abstract

Introduction: Loss of active abduction and external rotation of the shoulder, as well as flexion of the elbow, at high lesions C5 C6 present challenges in orthopedic surgery.

Aim: The study aimed to estimate the possibility of recovery of the shoulder girdle and elbow function through a single intrapleural nerve transfer in stated lesions.

Materials and methods: We present a case of a patient with a partial high lesion of C5 and avulsion C6, who was treated through single nerve transfer from the radial nerve and median nerve to the musculocutaneous and axillary nerve.

Results: A significant improvement in active shoulder abduction of 120 degrees was achieved by the patient, as well as actively resisted flexion in the elbow (M4, M5, able to move 2 kg against gravitation and resistance).

Paraesthesia in the region of the radial nerve disappeared after three months. After three months, a positive monofilament test of Weinstein and normal flexion of the wrist were observed. The active function of the triceps brachii was not changed. Results were reported 6-, 8-, 12- and 18 months post-operation.

Conclusion: Single nerve transfers are acceptable in case of partial preganglionic C5 lesion and C6 avulsion injury in case of a preserved function of C7-Th1.

Introduction

Treating Peripheral Nerve Lesions (PNL) presents a constant problem for neurosurgeons, orthopedics, and microsurgeons. It is a still small number of successful outcomes that define the actuality of a problem, which could lead to severe disability, which could be compared to the loss of a limb. Ultimately, it leads to social and psychological problems and resocialization.

Surgical reconstruction of the nerve, nerve transfers, nerve augmentation as well as tendon transfer, and free muscular graft transfer became the choice of treatment instead of conservative treatment. In our opinion, as well as the number of modern authors [1–3], results from nerve transfer are much better compared to neurorrhaphy and nerve graft.

In problematic cases (preganglionic / L1), denervation of longer than six months, nerve transfer has a number of advantages. Decreased distance and quicker nerve regeneration are some of them. According to us, as well as other authors [1–3], intrapleural transfers have advantages over extraplexial transfers.

Madzharova R., Simeonov E. ***Comparing the effect of conventional physiotherapy and radial shockwave therapy in patients with capsulitis adhesive on shoulder joint.*** **Евразийский союз ученых, 2020, Том 2 № 11(80): 4-7; ISSN: 2411-6467**

МЕДИЦИНСКИЕ НАУКИ

COMPARING THE EFFECT OF CONVENTIONAL PHYSIOTHERAPY AND RADIAL SHOCKWAVE THERAPY IN PATIENTS WITH CAPSULITIS ADHESIVE ON SHOULDER JOINT

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ABSTRACT

Purpose: Capsulitis adhesive is a degenerative disease of soft tissues around the shoulder joint. Characterized by pain and limited movements in the shoulder joint. It has always been considered important because of the impact on the quality-of-life and long period of illness. Therefore, the use of noninvasive and safe techniques that can speed up the healing process of the disease is important.

The aim of the follow-up the effect on pain and range of motion (ROM) after conventional physiotherapy versus radial shockwave therapy (RSWT) in the same patients with Capsulitis adhesive.

Method: 10 patients ware treated for 2 months with a conventional physiotherapy without improvement and followed 6 weeks treatment with RSWT. Visual analogy scale (VAS) used for pain assessment, goniometry for the ROM and Neer test, Upper limb Activity of daily living (ADL) to objectitize the patient state before and after both therapies.

Results: The patient's condition has not improved after conventional therapy. The treatment with RSWT provides a significant reduction of pain, increase ROM in the shoulder joint and improve ADL for the upper limb.

Conclusions: Usage of RSWT alone is much better option compared to the conventional physiotherapy in patients with Capsulitis adhesive.

Key words: Capsulitis adhesive, physiotherapy, radial shockwave therapy

INTRODUCTION

Capsulitis Adhesive is an inflammatory degenerative disease of soft tissues around the shoulder joint. Characterized by pain and limited movements in the shoulder joint. The disease has chronic course and prolonged illness of patients.

Nontraumatic etiologies include degenerative chances, secondary dysfunctions, non traumatic injuries as well as muscle wasting or osteoporotic changes, where these predispose damage due to traumata. Age and excessive repetetive motions also lead to injuries and predispose damage.

Adhesive capsulitis (AC), often referred to as frozen shoulder is characterized by initially painful and later progressively restricted active and passive glenohumeral joint range of motion with spontaneous complete or near complete recovery over varied period of time.

This inflammatory condition that causes fibrosis of the glenohumeral joint capsule is accompanied by gradually progressive stiffness and significant restriction of range of motion (typically external rotation). In clinical practice it can be very challenging to differentiate early stage of AC from other shoulder pathologies (1).

Etiology remains unclear. Primary - onset is idiopathic. Secondary - results from a known cause or surgical event (2). Three subcategories of secondary frozen shoulder include systemic (diabetes mellitus and other metabolic conditions), extrinsic (cardiopulmonary disease, cervical disc, humerus fractures, Parkinson's disease), and intrinsic factors (rotator cuff pathologies, biceps tendinopathy, calcific tendinopathy, AC joint arthritis) (3).

Adhesive capsulitis is often more prevalent in women, individuals 40-65 years old, and in the diabetic population, with an occurrence rate of approximately 2-5% in the general population, (3)(4)(5)(6)(7)(8) and 10-20% of the diabetic population (6)(7). If an individual has adhesive capsulitis they have a 5-34% chance of having it in the contralateral shoulder at some point. Simultaneous bilateral involvement has been found to occur in approximately 14% of cases (3).

Patients presenting with adhesive capsulitis will often report an insidious onset with a progressive increase in pain, and gradual decrease in active and passive range of motion (3)(5).

Adhesive capsulitis is considered to be a self-limiting disease with sources stating symptom resolution as early as 6 months up to 11 years. The literature reports that adhesive capsulitis progresses through three overlapping clinical phases: (1)(7)(9)(10)

Acute/freezing/painful phase: gradual onset of shoulder pain at rest with sharp pain at extremes of motion, and pain at night with sleep interruption which may last anywhere from 3-9 months.

Adhesive/frozen/stiffening phase: Pain starts to subside, progressive loss of glenohumeral motion in capsular pattern. Pain is apparent only at extremes of movement. This phase may occur at around 4 months and last till about 12 months.

Resolution/thawing phase: Spontaneous, progressive improvement in functional range of motion which can last anywhere from 1 to 3.5 years.

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МЕДИЦИНСКИЕ НАУКИ

CLINICAL EXPERIENCE IN THE APPLICATION OF RADIAL SHOCKWAVE AND KINESIO TAPING TO PATIENTS WITH EPICONDYLITIS

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ABSTRACT

Purpose: Epicondylitis elbow is a inflammation of the tendons that attach the forearm muscles to lateral or medial aspect, of the bone at the elbow. Characterized by pain and limited movements in the elbow joint. spread into forearm and wrist It has always been considered important because of the impact on the quality of life, limiteition of active daily living and long period of illness. Therefore, we need the use of noninvasive and safe techniques that can speed up the healing process with maximum patient complaiance.

The aim of the follow-up the effect on pain and Activity of daily living (ADL) after application of radial shockwave therapy (RSWT) and Kinesio Taping (KT) to patients with epicondylitis.

Method: 15 patients ware treated for 6 weeks with RSWT and KT once weekly. Visual analogy scale (VAS) used for pain assessment, Upper limb ADL to objectitize the patient state before and after 6 week.

Results: The aplicaton of RSWT with KT provides a significant reduction of pain, and improve ADL for the upper limb.

Conclusions: Usage of RSWT with Kinesio Taping is effective physiotherapy modality for patients with epicondylitis. These therapeutic options are save and increase patient complains.

Key words: Epicondylitis elbow, physiotherapy, radial shockwave therapy, kinesio taping

INTRODUCTION

Epicondylitis elbow is a inflammation of the tendons that attach the forearm muscles to lateral or medial aspect, of the bone at the elbow. Characterized by pain and limited movements in the elbow joint. spread into forearm and wrist It has always been considered important because of the impact on the quality of life and long period of illness. Therefore, we need the use of noninvasive and safe techniques that can speed up the healing process with maximum patient complaiance.

Stages of Tendinopathy: healthy tendon. In healthy tendon, type 1 collagen fibers are organized and layered side-to-side and end-to-end. They are essentially parallel but with a very slight wave pattern. The tenocytes are elongated and uniform in number.

Stages of Tendinopathy: grade 1. In grade 1 tendinopathy, the tight array of collagen fibers loosens with increasing waviness. There is a relative increase in type 3 collagen and minimal cell proliferation.

Stages of Tendinopathy: grade 2. In grade 2 tendinopathy, there is increasing cell proliferation and clustering as well as angiogenesis. The nuclei of the cells become rounded and the collagen fibers are further disrupted and start to fragment

Stages of Tendinopathy: grade 3. In grade 3 tendinopathy there is cell death by apoptosis. There is increased cell migration and matrix metalloproteinase (MMP) production. The extracellular matrix begins to breakdown until, in grade 4 tendinopathy, there is structural and mechanical failure. (1)

Extracorporeal shock wave therapy (ESWT) has recently drawn great attention as a non-surgical treatment.(2). This therapy assists revascularization through the application of extracorporeal shock waves to the lesion, and reduces pain and improves function in the elbow by stimulating or reactivating the healing process of connective tissues, including tendons and bones(3). While it is currently used for musculoskeletal diseases, such as calcific tendinitis and plantar fasciitis(4), few studies have focused on its therapeutic effects on tennis elbow.

In addition, the ESWT may have stabilized the tissues by stimulating and reactivating the healing process of the tendons and their surrounding tissues by creating new muscle fibers through facilitating the secretion of angiogenic substances around the affected region and increasing blood flow to the region(5)

Conducted an in-vivo study on both healthy and degenerate human tendons. Their findings suggest that ESWT may initiate tendon regeneration by promoting pro-inflammatory (interleukin-6) and catabolic processes (interleukin-8) to remove damaged matrix constituents. (6)

A longer lasting analgesic effect is achieved when ESWT is used as a noxious stimulus. A noxious stimulus is responsible for the release of the neuropeptides Substance P and Calcitonin Gene Related Peptides (CGRP). In response there is local vasodilation, which creates a 'wash out' or flushing effect, diminishing the sensitivity of vasoneuroactive substances like prostaglandin and histamine.

Kinesio Taping (KT) is a method of elastic taping, created in the 1970s by a Japanese chiropractor, Dr. Kenzo Kase. KT is the most recommendable method. Its use is being increasingly popular in many fields of medicine. It can be considered as an alternative for painkillers, especially in patients for whom the use of

Е. Симеонов, В. Миксън, Р. В. Костов, Р. Маджарова, Ж. Адреева-Симеонова. - *Приложение на костнозаместващо биоактивно стъкло в ортопедията и травматологията – литературен обзор и изработване на протокол за рандомизирано контролирано проучване.* **Юбилейна научна конференция 50 г. МУ – Плевен 11.2024 г. (сборник доклади)**

ПРИЛОЖЕНИЕ НА КОСТНОЗАМЕСТВАЩО БИОАКТИВНО СТЪКЛО В ОРТОПЕДИЯТА И ТРАВМАТОЛОГИЯТА – ЛИТЕРАТУРЕН ОБЗОР И ИЗРАБОТВАНЕ НА ПРОТОКОЛ ЗА РАНДОМИЗИРАНО КОНТРОЛИРАНО ПРОУЧВАНЕ

BIOACTIVE GLASS APPLICATION IN ORTHOPEDICS AND TRAUMATOLOGY – LITERATURE REVIEW AND PROPOSITION OF STUDY PROTOCOL OF A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Bone, a rigid structure of the human body, plays a crucial role in providing support, protection, and locomotion. Unlike other tissues, bone possesses a remarkable regenerative capacity, often fully recovering unless some factor impedes this process. One such factor is a bone defect, which often occurs following high-energy trauma events. These bone defects are typically filled with either an autologous bone graft or a bone graft substitute, such as bioactive glass (Bioglass). This innovative material was originally developed in 1970 and has shown the ability to provide mechanical and biological support to the surrounding bone tissue, aiding in bone reconstruction and healing.

Objectives. *This research aims to review the studies using bioactive glass to treat bone fractures with bone defects and discuss/outline the research protocol for a future clinical study.*

Methods. *The study will include adults aged 18 – 65 with limb bone fractures requiring osteoplasty of the bone defect. Participants will be randomized into the bioactive glass (intervention) or autograft (control) groups. Plain X-rays and/or CT will examine the objective healing of bone defects, and clinical recovery will be evaluated using the LEFS scoring system and VAS score.*

Conclusion. *A literature review shows limited evidence of the use of bioactive glass in orthopedics and traumatology. We hope our research will reduce or eliminate the necessity of additional autograft harvesting surgery and its associated risks.*

Keywords: bone defect, bioactive glass, bone grafts

Въведение

През последните няколко десетилетия познанията относно заравстването на фрактурите претърпяха значителен напредък (Marsell and Einhorn, 2011, Bigham-Sadegh and Oryan, 2015, Su et al. 2019). Костта, като ригидна структура, играе решаваща роля в осигуряването на движение, опора и протекция (Hart et al. 2017, Ansari, 2019, Su et al. 2019). Когато е изложена на външен стрес, костта претърпява прогресия от еластична към пластична деформация, което в крайна сметка води до счупване, ако напрежението продължава (Bigham-Sadegh and Oryan, 2015, Hart et al. 2017).

В търсене на приложими алтернативи на автоприсадъците, за лечение на костните дефекти, в съвременната медицина бяха проведени множество проучвания. Последните

Р. Маджарова, Е. Симеонов. *Цервикална идиопатична сколиоза в юношеска възраст: физиотерапевтична програма.* Юбилейна научна конференция 50 г. МУ – Плевен 11.2024 г. (сборник доклади)

ЦЕРВИКАЛНА ИДИОПАТИЧНА СКОЛИОЗА В ЮНОШЕСКА ВЪЗРАСТ: ФИЗИОТЕРАПЕВТИЧНА ПРОГРАМА
CERVICAL IDIOPATHIC SCOLIOSIS IN ADOLESCENCE: A PHYSIOTHERAPY PROGRAM

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ABSTRACT

Purpose: *Idiopathic Scoliosis has different localization in the compartments of the spine - cervical, thoracic, lumbar. As most commonly it involves a combination of two or three curvatures. Cervical scoliosis in most cases is a secondary curvature and it turns out to be the leading one as symptomatology. The aim of the follow-up was to assess the effect of a physiotherapy program performed in adolescents with idiopathic scoliosis with cervical deviation. Effects on pain, cervical mobility and correction of shoulder asymmetry were monitored.*

Materials and methods: *Four children with idiopathic scoliosis with cervical deviation were followed. They had two or three spinal curvatures. The physiotherapy program included: paraffin applications, TENS, Ultra sound therapy and Schroth therapy. The following parameters were assessed: pain scores, cervical range of motion, Shoulder asymmetry. The physiotherapy program lasted 14 days and patients performed the Schroth exercises at home for 3 months.*

Results: *All patients had reduction in pain, increase in cervical range of motion and reduction in shoulder asymmetry. No side effects from the physiotherapy treatments were reported.*

Conclusion: *There was a short-term improvement in the objective parameters of the treated patients. The physiotherapy programme used was effective, well tolerated and easily applied in children. The results of the third month showed good compliance with the recommendations for performing the Schroth exercises.*

Key words: *adolescent idiopathic scoliosis, neck pain, physiotherapy, Schroth therapy*

Въведение

Сколиозата е комплексна деформация в три равнини- фронтална, сагитална и транзверзална, характеризираща се с латерална девиация във фронталната равнина с ъгъл на Коб повече от 10 градуса (Hresko, 2013). Според SRS (Scoliosis Research Society) идиопатичната сколиоза е изкривяване, обхващащо 2-3% от детската популация. Идиопатичната сколиоза (ИС) е в 80% от всички случаи на сколиоза.

Големината на ъгъла на Коб се използва за класифициране на тежестта на сколиозата. Крива до 25° се счита за лека форма на сколиоза. Стойности между 25° и 45° се класифицират като умерена форма, а крива над 45° – като тежка сколиоза (Romano et al., 2012). Идиопатичната сколиоза традиционно се описва като безболезнено състояние (Choudhry et al., 2016). Въпреки това, проучване проведено от Рамирес и колектив установява, че 31,5% от пациентите със сколиоза са имали болки в гърба (Ramirez et al., 1997).

Приблизително 10% от диагностицираните случаи на сколиоза изискват консервативно лечение, а около 0,1-0,3% – оперативна корекция на деформацията. Прогресирането на адолесцентната идиопатична сколиоза (АИС) се наблюдава много по-често при жените. Когато ъгълът на Кобб е от 10 до 20°, съотношението на засегнатите момичета и момчета е