

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



## **МАТЕРІАЛИ**

**104-ї підсумкової науково-практичної конференції  
з міжнародною участю  
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БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ  
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Конференція внесена до Реєстру заходів безперервного професійного розвитку,  
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fixation strength was proportionally higher. On the other hand, the peak stress in the surrounding bone tissue was decreasing when the thickness of the cortical layer was increased.

**Conclusions.** The mechanical strength of fixation was related with the thickness of bone cortical layer and with the material of the screws. The nonlinear adverse correlation between the displacement and the thickness of the cortical layer was found. However, the mechanical parameters of polymeric materials were lower than of metal screws, but achieved results showed that their fixation strength is enough for internal fracture fixation in non-weight bearing areas. The polymeric screws can be used alone or in combination with metal devices, as they revealed good biocompatible properties and biodegradable properties in our previous studies.

**Knut R.P.**

## **HISTOLOGICAL PRECONDITIONS FOR THE DEVELOPMENT OF COMPLICATIONS IN HERNIOPLASTY USING PROLENE ALLOGRAFTS**

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**Introduction.** In recent years, the use of alternative methods of allograft fixation in anterior abdominal hernioplasty have become increasingly common, as the use of prolene ligatures leads to additional trauma of tissues and nerve fibers in the area of plastics, which can in its turn lead to postoperative complications. The use of stitch-free methods of hernioplasty and of surgical sealants avoids the above complications, however, insufficiently effective fixation of the allograft can lead to its displacement in the postoperative period and cause recurrence of hernia.

**The aim of the study:** to study the terms of allograft fixation to tissues of bed with fibrin and collagen fibers for further elaboration of more effective methods of surgical treatment of anterior abdominal wall hernias.

**Material and methods.** The study is experimental. As the examination material were used 26 white rats, which were implanted in the muscles of the anterior abdominal wall with the prolene allografts measuring  $0.5 \times 0.5$  cm. Collection of the material for histological examination was performed by biopsy of muscles with implanted allograft after 1, 3, 5, 7 and 10 days from the moment of modeling the experiment. 3-5  $\mu\text{m}$  thick sections were stained according to standard methods. The study was performed at a magnification of  $\times 100$  using a descriptive method of detecting changes.

**Results** of the study show that during the first four days after modelling the experiment, the fixation of the allograft occurs mainly due to fibrin fibers. When taking biopsy during this period, the allograft was easily moved. After the 5<sup>th</sup> days of the modelling the experiment in tissue biopsies there was a predominance of collagen fibers. During taking the biopsy, the allograft was fixed to the tissues of the bed and did not move.

**Conclusions.** During the first four days of the postoperative period, the allograft's fixation is not effective enough, which can cause its displacement or twisting and lead to recurrence of hernia. Therefore, it is advisable to use surgical sealants to fix it and prevent the development of complications of the postoperative period.

**Kozlovska I.M.**

## **MANAGEMENT OF CHRONIC WOUNDS IN MODERN CONDITIONS**

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**Introduction.** Chronic wounds occupy a leading position among diseases and hospitalization of patients in the department of purulent surgery. Such patients are characterized by long-term disability, expensive treatment, slow rehabilitation after treatment, or permanent disability. According to the World Health Organization, the main causes of wounds that do not heal for a particularly long time are insufficient blood flow in the wound, imbalance of inflammatory and reparative processes in the wound, microbial contamination and antibiotic resistance due to microbial biofilms, slowing down the formation of the demarcation wall, excess production of

proteases and reduced activity of growth factors. Considering the above, the modern methods of treating chronic wounds that restore all the listed pathogenetic factors of long-term non-healing of such wounds are promising today.

**The aim of the study** was to speed up the wound cleaning stages and the demarcation wall formation, to activate the growth of granulation tissue and, accordingly, to shorten the treatment time of chronic wounds, thanks to their high-quality and effective cleaning.

**Material and methods.** 75 patients with purulent-necrotic wounds were treated in the 1st surgical department during 2019-2022. As the main obstacles to the healing of such wounds and their readiness for granulation and epithelialization are fibrin layering and necrotic processes in the wound, as well as microbial contamination, we suggested the use of wet fermentation and lysis of non-viable tissues. The main group included 38 patients who used the "wet chamber" method with a complex of hydrocolloid ointments and solutions to treat wounds to maintain a constant moist environment in the wound. To ensure the effect of a wet environment, an activated wound dressing was used. Dressings were applied once every 3 days. In the control group (37 patients) standard dressings were applied.

**Results.** At the time of the second-third dressing there was a sharp change in the condition of the wound - the bottom of the wound was practically cleared of fibrin and necrosis layers, also after three to four dressings its bottom began to be filled with well-mature granulation tissue, along the perimeter there was the appearance of marginal epithelialization. The average period of complete cleansing and preparation of the wound for healing in the main group was  $14.17 \pm 1.39$  days, in the comparison group -  $25.92 \pm 1.52$  days ( $p < 0.05$ ). Granulation tissue appeared in the wound during  $6.05 \pm 0.38$  days, which is probably faster than in the comparison group -  $15.27 \pm 0.83$  ( $p < 0.05$ ). That is, when applying a "wet chamber" it was possible to quickly and without necrectomy clean the wound defects by 1.83 times and accelerate the growth of granulations by 2.53 times. Therefore, comprehensive treatment of chronic wounds with the use of "wet chamber" has a significant advantages over traditional methods.

**Conclusion.** The method of the wet lysis significantly accelerates the wound cleansing period, accelerates and stimulates the formation of granulation tissue of the wound, increases the reparative potential of the wound, increases the frequency of healing.

**Kurikeru M.A.**

## **FEATURES OF COMBINED CRANIOCEREBRAL INJURY AND DAMAGE TO THE CHEST ORGANS**

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**Introduction.** In the last decade, there has been a trend towards an increase in the frequency, severity of complications, and mortality from both isolated and combined traumatic brain injury (TBI). The main cause of combined craniocerebral injuries is car accidents - up to 60% of cases, accidental / intentional domestic injuries - up to 30% and industrial injuries - about 10%.

**The aim of the study** was to study the characteristics of the clinic and the course of a combined craniocerebral injury with damage to the chest organs.

**Materials and methods.** An analysis of the clinic, diagnosis and treatment of 162 patients with combined head and chest injuries who were treated in the neurosurgery clinic during 2016-2021 was carried out.

**Results.** An analysis of the clinic, diagnosis and treatment of 162 patients with combined head and chest injuries who were treated in the neurosurgery clinic during 2016-2021 was carried out. It was established that there were 138 men, 24 women, the majority of whom were middle-aged – 20-49 years old. The cause of injury in 86 cases was road accidents, a fall from heights – in 60 cases, domestic injuries – in 16 cases. In motor vehicle accidents, brain concussion combined with rib fracture was noted in 24 patients, skull fracture, brain contusion, and rib fractures were diagnosed in 54, and among the last group, compression of the brain by epidural or subdural