



сторонніх тіл безпосередньо через раньовий канал під загальним або місцевим знеболенням з застосуванням прийому девіації стінки раньового каналу з використанням відеоторакоскопичної оптики. Особливо корисною вульнероскопія може бути у віддалених термінах: 5-7 днів після проникаючих поранень, оскільки у наведені терміни, як правило, стабілізується стан хворих, зменшується больовий синдром, формується грануляційний вал раньового каналу. В ранньому періоді травми дослідження малоінформативне із-за інтенсивної, як правило, кровотечі і відповідно зменшення поля огляду раньового каналу. При наскрізних пораненнях вульнероскопія проводиться через вхідний та вихідний отвір.

За період з 2017 по 2020 рр. в клініці проліковано 118 пацієнтів з проникаючими пораненнями ОГК різної складності. Вульнероскопію, видалення сторонніх тіл, некротично змінених тканин проведено у 74 (62,7%) пацієнтів, рентген неконтрастні сторонні тіла діагностовано та видалено у 52 (70,2%) травмованих.

Отже, запропонований спосіб дозволяє покращити результати хірургічного лікування хворих з масивними проникаючими пораненнями грудної клітки завдяки зменшенню травматичності операцій, розширенню можливостей видалення рентген неконтрастних сторонніх тіл, відповідно і зниженню частоти гнійних ускладнень.

СЕКЦІЯ 9 АКТУАЛЬНІ ПИТАННЯ ХІРУРГІЇ, УРОЛОГІЇ ТА ТРАВМАТОЛОГІЇ

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BIOMECHANICAL EVALUATION OF MECHANICAL STRENGTH OF METAL AND PLA/PGA SCREWS USED FOR INTERNAL FIXATION OF LONG BONE FRACTURES

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Annually the number of fractures of extremities treated with open reduction internal fixation is progressively increasing. Fracture healing depends a lot on the stability of bone fragments. Screws are main devices that can be used either alone or in combination with a plate, so mechanical strength of their fixation in bone is very important. In recent years, screws made of metal and polymeric materials with different mechanical parameters, have been available in the market. To perform biomechanical evaluation screws made of stainless steel and biodegradable PGA/PLA polymer were taken.

The aim of the study was to evaluate the mechanical strength of screw fixation in bone in vitro for stainless steel and biodegradable PGA/PLA polymer (® Bioretec). The study was performed at the Traumatology and Orthopaedics Department of Bukovinian State Medical University in cooperation with General Physics Department of Yuriy Fedkovych Chernivtsi National University. The mechanical strength was evaluated for stainless steel and PGA/PLA screws 3,5 mm and 4,5 mm in diameter with unicortical fixation in pig bones. The pull-out test was performed with the use of Universal Tensile Test Machine. The mathematical modelling method was used to calculate fixation properties for tubular bones of different sizes and diameters.

There were 4 series of measurements performed with 7 specimens in each. Pig bones were fixed in the special stand and head of a screw was fixed in the clamp of Universal Tensile Test Machine. For polymeric screw the metal nut was used to prevent the damage of the screw head with the clamp. The standard AO technique was used. The hole was made in the bone shaft with 2,5 drill bit for 3,5 screws, and the 3,5 drill bit was used for 4,5 screws. Then holes were taped and the screws were inserted 2,25 mm deep into the nearest cortical layer. For metal screws insertion standard AO instruments from operation room were used. For PLA/PGA screws of the ® Bioretec ® ActivaScrew instrument set was used. The average tensile strength of fixation for 3,5 mm PGA/PLA screws was 26,7 kgp, that was 26% less than of stainless steel screws, and for 4,5 mm screws the difference was 34 %. For bones of a larger diameter the fixation strength was proportionally higher.



Though the mechanical parameters of PLA/PGA screws were lower than of metal screws, but achieved results showed that their fixation strength is high enough for internal fracture fixation in non-weight bearing areas. The biodegradable screws can be used alone or in combination with metal devices and their biodegradable properties give them additional advantage.

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PROSTATIC INTRAEPITHELIAL NEOPLASIA (PIN)

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Prostatic cancer is one of the most urgent problems in the modern medicine. Digital rectal examination, transrectal ultrasound of the prostate and PSA level determination in serum don't always allow us to detect tumor process in early stages. That is the main reason why the features of precancerous conditions development and early diagnosis of prostatic cancer are so important. Prostatic intraepithelial neoplasia (PIN) is a precancerous condition of the prostate. According to the literature devoted to this state, the frequency of PIN detection during the initial biopsy is from 0,4 % to 25 %. However, during punch biopsy in cases where we suspect prostatic cancer (PC) frequency of PIN is from 8% to 50%.

The purpose of this study is to detect a frequency of PIN after TURP and to find out the signs of PIN in patients with benign prostatic hyperplasia.

There were analyzed 184 case-records of patients with benign prostatic hyperplasia and prostatic cancer who had underwent TURP. We had 106 patients with BPH, 100 of them had histologically confirmed BPH (1 group), 6 patients had PIN (2 group), 78 – incidental prostate cancer (3 group). Investigated signs are the age, the body mass, the presence of epicystostomy, the hematuria, the acute urinary retention, the chronic urinary retention, the chronic cystitis, the chronic prostatitis, the bladder atony, the diabetes mellitus, the prostate volume, the presence of prostatic calcifications and previous usage of alfa1-adrenoblockers.

The average age of patients with BPH is 70 ± 11 , with PIN 67 ± 9 , with prostatic cancer 74 ± 12 . During the investigation of body mass and BMI in all groups of patients the information that would have diagnostic value haven't been obtained. The presence of epicystostomy in patients with BPH 28%, PC- 16,7%, PIN-0%. Hematuria: 16% with BPH, 5,1 % with PC, PIN-0%. Acute urinary retention: 47% with BPH, PC 50%, 83% PIN. Chronic cystitis: 48% with BPH, 66,6% with PIN, 88,5 with PC. Bladder atony: 6% BPH, PC, PIN- 0%. Diabetes mellitus: BPH 3%, 33,3% PIN, 2,5% PC. Presence of prostatic calcifications: BPH 3%, PC, PIN- 0%. Chronic urinary retention: 33% BPH, 16% PIN, 50% PC. Non-effective usage of alfa1-adrenoblockers: BPH 17%, 33,3% PIN, 19,2 PC. Chronic prostatitis: BPH 56%, 83% PIN, PC 51%.

After having analyzed the research results, we found out that the frequency of PIN after TURP was 4,4%. There are several prognostic signs of PIN and prostatic cancer, such as the non-effective usage of alfa1-adrenoblockers, the diabetes mellitus, the chronic prostatitis and the acute urinary retention. There is the lack of programs which could help diagnose this disease on early stages, which, obviously, significantly complicates the treatment. We can reduce morbidity and mortality of prostatic cancer only by providing an early diagnosis and treatment.

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

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In recent years, the use of alternative methods of allograft fixation in anterior abdominal hernioplasty has 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 turn lead to postoperative complications. The use of stitch-free methods of hernioplasty and of surgical sealants avoids the