and improvement of blood circulation and reparation processes in the damaged caput.

44 patients had the following types of surgical interventions dependently on the stage and severity of the disease: — tunneling of the cervix of femoral bone with injection of auto transplant into its lumen in 8 patients; — varizing inter-trochanter osteotomy of femoral bone in 12 patients; — transplantation of the anterior inferior ost of ileac bone on vascular muscular foot; — decompression of hip joint using Ilizarov’s apparatus.

The choice of surgical intervention depended on the degree of pathologic alterations revealed in roentegologic and MSCT tests. In the first stage of the disease we performed operations of tunneling of the cervix of femoral bone, tunneling of the cervix of femoral bone with injection of auto transplants in its lumen, decompression of hip joint using Ilizarov’s apparatus. In the second and third stages of the disease we performed operation of varizing inter-trochanter osteotomy of femoral bone. The aim of surgical interventions in the initial stages (I, II) of the disease was improvement of blood circulation and reparation processes in the damaged caput; in the II and IV stages — centralization of caput femori in acetabulum and normalization of joint surfaces correlation.

After operation plaster cast was applied for 1 month. After removal of the cast physiotherapeutic and medical treatment courses were prescribed additionally.

During postoperative period control x-ray imaging was performed in 6 and 12 months for assessment of the surgical intervention. Application of a complete load on the operated limb of the patients with ANCF was permitted average in a year.

After tunneling of hip joint on doplerography we noticed improvement of blood flow in circumflex arteries of femor. Extra joint reconstructive-restoring interventions promoted preservation of intact bone-cartilage elements and intensification of dynamic reparation of the damaged ones in hip joint, and that had favorable effect on the further development of the joint and promoted fast recovery of its functions in postoperative period. There was decrease of epiphysary deformation, improvement of caput femori centralization and congruency of joint surfaces. It was well traced on x-ray pictures, computer tomodgrams in postoperative period. Recovery of physiological congruency of the joint reached by means of rotation component of osteotomy and exclusion of the load of the part of aseptic necrosis of caput femori conditions the possibility of early recovery of support function of the limb. In the control roentgenography in postoperative period and stages of the therapy there was no remarkable progression of the disease. The progress of fragmentation period was shortened, reparative processes were more active.

Conclusions:
1. Complex diagnostics will help an individual approach to the therapy of aseptic necrosis of caput femori in children. All the results of instrumental radiologic test complemented each other.
2. The choice of surgical intervention method depended on the stage and severity of the pathologic process. Surgical interventions promote fast recovery of congruency and functions, improvement of blood supply and regeneration processes in hip joint.

References:

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Characteristics of inflammation mediators changes at calculous cholecystitis

Abstract: Investigation results of anti-inflammatory mediators levels in patients with different types of calculous cholecystitis in compare with blood indexes investigation results in healthy people have been presented in the paper. Comparison of cytokines level ratio in blood and immunocompetent cells in gallbladder tissue has been performed.
Inflammation mediators take part in regulation of growth, differentiation and duration of cells life and it allows to regard them as prospective bio-markers of different diseases. Cytokines are usually extracted and consumed locally in the area where immune reaction takes place and that is why the majority of them are detected in the peripheral blood in small quantities [3; 10; 11]. Cytokines level in blood is very little and is measured in picograms for milliliter - it is submultiple unit of gram (12 zeroes should be added to gram for getting necessary rate) [2; 4].

Interleukin-1 (IL-1) and alpha tumors necrosis factor (TNF-a) are refered to important inflammation mediators, the main producers of which are activated monocytes and macrophages. Both IL-1 and TNF- a cause an occurrence of vascular endothelium cells of adhesion molecules which promote leukocytes adhesion to endothelium and then their migration trough vessels wall into extravascular space. IL-1 and TNF- a stimulate formation and secretion of the other anti-inflammatory cytokines by leukocytes and endothelium cells, activate many cells of inflammatory response. IL-6 is one of the main tissues injury mediator. It is produced both by lymphoid and non-lymphoid cells, regulates immune and acute phase response, inflammation, oncogenesis and hemopoiesis. Though the role IL-6 in organism protection is not still clear, it places the central one together with IL-1 and TNF-α as the main inflammation mediators [5; 6; 8; 9; 12].

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Cytokine type | Control group (n=15) | Destructive cholelithiasis (n=15) | Non-destructive cholelithiasis (n=15)
--- | --- | --- | ---
IL 1 (pg/ml) | 3,35±0,73 | 3,97±0,7* | 4,35±0,9*
IL 6 (pg/ml) | 3,33±1,05 | 11,53±7,2* | 9,15±4,3*
TNF (pg/ml) | 3,81±1,05 | 3,98±0,9* | 5,08±1,6*

Note: *p<0.05

At destructive calculus cholecystitis there was noted a reliable (p<0.05) increasing of all investigation parameters. As it is seen from presented data at wall’s destruction there were noted IL 6 level increasing to 3,5 times, IL 1 — to 1,2 times, at insignificant increasing of TNF level (to 1,04 times). Non-destructive inflammation of gallbladder was also characterized by reliable increasing (p<0.05)
of studied parameters in compare with control group. Received data show that at cholecystitis without gallbladder wall’s destruction there was IL 6 increasing to 2,7 times, TNF to 1,33 times, IL1 to 1,3 times in compare with control group.

Comparison of investigation results of anti-inflammatory cytokines and TNF-α at different types of calculous cholecystitis showed that both at destructive and non-destructive forms of cholecystitis there was noted a sharp increasing of interleukins level (p<0,05).

More significant growth of IL 6 at gallbladder wall's destruction and of IL 1 growth at cholecystitis without gallbladder’s destruction have been detected. TNF investigations at calculous cholecystitis detected insignificant increasing of its level at destructive form of cholecystitis and moderate one — at non-destructive inflammation (pict. 1).

Microscopic and cytometric investigation of gallbladder at calculous cholecystitis (table 2, pict. 2) showed that destructive inflammation is characterized by sharp increasing of inflammation cells for area’s unit and the main mass of infiltrate was consisted of basophilic leukocytes (59%) while at non-destructive cholecystitis there were noted moderate increasing of inflammation cells with mononuclears prevalence (64,4%).

<table>
<thead>
<tr>
<th>Cells type</th>
<th>Control group (n=15)</th>
<th>Destructive cholecystitis (n=15)</th>
<th>Non-destructive cholecystitis (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basophilic leukocytes (%)</td>
<td>25,2±3±1,2 (23,9%)</td>
<td>5488,5±44,14* (59%)</td>
<td>1321,1±12,95* (35,6%)</td>
</tr>
<tr>
<td>Mononuclear cells (%)</td>
<td>80,1±6,8 (75,8%)</td>
<td>3814,7±24,5* (41%)</td>
<td>2396±31,47* (64,4%)</td>
</tr>
<tr>
<td>Totally</td>
<td>105,3±4,0 (100%)</td>
<td>9304,2±34,35* (100%)</td>
<td>3717,1±22,21* (100%)</td>
</tr>
</tbody>
</table>

Note:*p<0,05

Comparison of cytokine and cytometry data at different types of calculous cholecystitis detected that gallbladder wall’s tissue destruction is characterized by sharp growth of leukocytes in gallbladder tissue and followed by sharp increasing of IL 6. The detected fact allows to guess that IL 6 at destructive cholecystitis is carried out by tissue basophilic leukocytes and TNF at non-destructive cholecystitis — by ononuclears (pict. 1, 2).

Analysis of peripheral blood investigation results detected that at different types of inflammation there was noted a reliable changes of inflammatory cells quantity (p<0,05) except lymphocyte level at non-destructive cholecystitis (p>1) (table № 3, pict. 4).

<table>
<thead>
<tr>
<th>Cells type</th>
<th>Control group (n=15)</th>
<th>Destructive cholecystitis (ChC)* (n=15)</th>
<th>Non-destructive cholecystitis (ChC)* (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basophilic leukocytes (%)</td>
<td>0</td>
<td>4,32±0,17** (4,32)</td>
<td>2,85±1,16** (2,85)</td>
</tr>
<tr>
<td>Lymphocytes (%)</td>
<td>26,0±4,8</td>
<td>2±0,89** (0,08)</td>
<td>26,02±0,59*** (0,99)</td>
</tr>
<tr>
<td>Monocytes (%)</td>
<td>7,3±2,21</td>
<td>22,38±0,7** (3)</td>
<td>4,83±0,31** (0,66)</td>
</tr>
</tbody>
</table>

Note:*ChC — changes coefficient; **p<0,05; ***p>0,05

As it is seen from presented data non-destructive cholecystitis as destructive ones are characterized by increasing of basophilic leukocytes. But in patients with gallbladder wall destruction there was a growth of basophilic leukocytes to 4,32 times and at non-destructive inflammation — only to 2,85 times. At the same time at destruction gallbladder walls have sharp reducing of lymphocytes quantity in peripheral blood following by monocytes level decreasing. At non-destructive cholecystitis it is characterized by decreasing of both lymphocytes and monocytes.

Comparison of investigation results of cytokines and inflammation cells level in blood showed that at destructive cholecystitis there is a direct positive correlation of IL 6 indexes with leukocytes and monocytes quantity.

At non-destructive cholecystitis has been also detected direct positive correlation between TNF level and lymphocytes quantity (pict. 3, 4).
So, a carried out investigation detected that at destructive cholecystitis it was noted a direct positive correlation between leukocytes increasing in peripheral blood, in gallbladder tissue and increasing of interleukins level, IL 6 is more manifested than IL 1. At the same time increasing of mononuclear cells in blood is inversely proportional to their quantity in gallbladder tissue at practically invariable level of TNF. At calculous cholecystitis without wall destruction it was detected another picture. At rather high level of leukocytes in peripheral blood it is detected their sharp decreasing in gallbladder tissue and reducing of IL 6 level. But decreasing of mononuclears in peripheral blood is followed by their prevalence in gallbladder wall infiltrate with IL 1 and TNF levels increasing (pict. 5,6).

Conclusions

1. Destructive types of cholecystitis is characterized by sharp increasing of leukocytes in gallbladder tissue at their moderate increasing in blood and leukocytes growth in peripheral blood at their insignificant increase in tissue. The sharp growth of IL 6 as mediator of tissue injury has been noted.

2. Calculous cholecystitis without wall destruction courses with IL 1 and TNF levels increase due to growth of mononuclear cells in gallbladder tissue at decrease of their quantity in peripheral blood.

So, the performed investigation shows that determination of cytokines concentration in blood gives information about functional activity of different types of immunocompetent cells; about severity of inflammatory process, its transmission to system level and about disease prognosis.

References:

5. Martinova N.N. Clinical-pathogenetic value of anti-inflammatory cytokines (IL-1 [B], IL-6 и TNF- [A]) and anti-inflammatory interleukin-10 in patients with salmonellosis and acute shigellosis Dis... of Ph. D. Moscow. 2007.
Abstract: The aim of the study was to investigate the mesenchymal formations in the stroma of polyps of different forms of chronic polypoid rhinosinusitis. We carried out morphological and immunohistochemical study of paraffin blocks prepared from nasal polyps, which remote by endoscopic operation in 45 patients with chronic polypoid rhinosinusitis in 2013. The study showed that the observation of mesenchymal formations in nasal polyps, which could be regarded as a growth zone of polyps.

Keywords: chronic polypoid rhinosinusitis, morphological study, immunohistochemical study, mesenchymal formations.

Features of mesenchymal formations of chronic polypoid rhinosinusitis

Material and methods. The material of this study were paraffin sections of surgical specimens, remote during endoscopic nasal surgery of 45 patients with diagnosed CPRS aged 18–77 years who were hospitalized in the third clinic of the Tashkent Medical Academy in 2013. The morphological study was conducted with paint on hematoxylin-eosin. Immunohistochemical studies were performed by immunoperoxidase. The primary antibodies used murine monoclonal antibodies — to Vimentin (1: 100 dilution, “Termo”, Germany), mouse monoclonal antibody to CD138+ (dilution 1:50, “DAKO”, Germany), because these markers help to determine the condition of immunological status in the nasal polyps. The results of the survey were evaluated on the light microscope. Statistical analysis of research conducted on the Microsoft Excel 2010.

Results and discussion. The morphological symmetry of postoperative material have been stated the prevalence of eosinophil infiltration in 33 specimens (73.3%), while in 12 (26.7%) noted the predominance of neutrophil infiltration. This was the basis for the division into 2 groups: patients with chronic “eosinophilic” polypoid rhinosinusitis and patients with chronic “neutrophil” polypoid rhinosinusitis. As indicated above, we have carried out an immunohistochemical study using monoclonal markers of Vimentin and CD138. Selection of these markers is specific because Vimentin stains mesenchymal cells, which may be located in the stroma of the nasal mucosa, in its side, may describe the picture growth of nasal polyps. CD138 stains a mature epithelial cell, that’s why immunohistochemical picture can determine their presence, expression, as well as some characteristics.

Mesenchymal cells are undifferentiated (immature) cells available in many species of multicellular organisms. Stem cells are able to self-renew, to form a new stem cells divide by mitosis and differentiate into specialized cells, i.e. converted into the cells of various organs and tissues.

From the pictures presented in Figures 1 and 2 can be determined that Expression of Vimentin marker notes in both forms of nasal polyps, but high expression characteristic for “neutrophil” polyps. These figures show the formation of epithelial cells (stained blue) in a cluster of mesenchymal cells (stained brown). On immunohistochemical Figure 1 is determined by the dynamics of mesenchymal cells, it is abundantly towards the epithelium. Also, there is a high expression in the epithelium of macropreparation. This may affect the rapid growth of polyps that often occurs when “eosinophilic” forms polyps.

Fig. 2 noted that the presence of high expression of Vimentin in the stroma shows a great activity of mesenchymal cells, which confirms our assumption that these mesenchymal clusters are a place of growth units. In terms of prognostic data of these changes appear to be indicative of future relapses or may indicate the formation of fibrous tissue, which is often present in neutrophilic polyps.

In Fig. 3 and 4 there is high expression of CD138 in the mature epithelial cells, as evidenced by the lack of expression of this mark-