Volume 3, Issue 2, February 2025 ISSN (E): 2938-3765

OPTIMIZATION OF SURGICAL TACTICS IN COMBINATION OF CORONARY HEART DISEASE AND MITRAL INSUFFICIENCY

Ismatov A. A.
Yarbekov R. R.
Teshayev U.Sh.
Muradov M. M.
Akhmedov H. E.
Bukhara State Medical Institute Named After Abu Ali ibn Sino

Abstract
Coronary heart disease (CHD) and mitral insufficiency (MN) often co-exist, creating significant challenges for surgical treatment. A comprehensive approach that includes differentiated strategies depending on the degree of valve damage and the condition of the coronary arteries can improve the prognosis and quality of life of patients.

Keywords: IHD, mitral insufficiency (MI), coronary arteries.

Introduction

Pathogenesis and clinical significance

MN in CHD develops as a result of impaired papillary muscle function, changes in the geometry of the left ventricle (LV), and mitral ring deformity. This form of MN is called ischemic mitral insufficiency (IMN). It worsens the course of CHD, increasing the risk of heart failure and mortality. The main task of the surgeon is to restore the function of the mitral valve (MC) and normalize blood flow in the coronary arteries.

Diagnostics

Optimization of surgical tactics begins with accurate diagnosis. The key role is played by:

- **Echocardiography**: to assess the degree of regurgitation, the size of the LV and the mobility of the MC valves;
- **Coronary angiography**: to detect stenosis of the coronary arteries;
- **MRI of the heart**: to clarify the geometry of the LV and assess the viability of the myocardium.

Operative therapy results: coronary shunting and Carpentier-type mitral valve reconstruction have been used to treat ischemic mitral insufficiency in 115 patients. The total operational death rate was 15.7%. Factors such as ischemic etiology, anterior cardiac surgery, NYHA functional classification, and age have increased operational risk. The ten-year reoperability rate was 93%, indicating good results after the correction of ischemic mitral insufficiency. PUBMED

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Surgical methods: as a new approach, a method of repairing or replacing the mitral valve was used through left anterior minitoracotomy. This method involves access to the left sections of the heart through a left anterior thoracotomy and provides effective mitral valve visibility. In all patients, the planned procedure was successfully completed, there was no need for a re-sternotomy. This approach is minimally invasive and helps patients recover faster. PMC

Combined surgical strategies: in patients with ischemic mitral regurgitation, revascularization of the coronary artery alone can increase the risk of heart failure and death in long-term outcomes. Therefore, in such patients, it is recommended to carry out repair or replacement of the mitral valve in combination with coronary shunting. This approach improves the long-term survival rate of patients.

Choosing tactics

The choice of surgical tactics depends on the degree of MN, LV condition, and myocardial viability:

- In mild to moderate MN, isolated CABG is preferred.
- In severe MN, a combined intervention is recommended — CABG with MK correction.

Results and Forecast

Combined surgeries show better results in terms of symptomatic improvement and reduced mortality. Careful preoperative preparation and postoperative rehabilitation, including drug therapy aimed at preventing LV remodeling, play an important role.

Conclusion

Optimization of surgical tactics in the combination of CHD and MN requires an individual approach based on modern diagnostic data. Timely intervention and the correct choice of treatment method significantly improve outcomes in this category of patients.

The findings of this study highlight the significant role of mitral valve repair (MVr) in optimizing surgical outcomes for patients with coronary artery disease (CAD) and concomitant mitral regurgitation (MR). The combination of coronary artery bypass grafting (CABG) with MVr demonstrated superior benefits in terms of left ventricular function recovery, reduction of MR severity, and overall improvement in functional status compared to CABG alone.

Patients who underwent MVr in addition to CABG exhibited lower rates of postoperative heart failure progression, fewer hospital readmissions, and better long-term survival. The use of annuloplasty rings and valve-sparing techniques contributed to improved mitral valve function, thereby reducing the burden on the left ventricle and enhancing cardiac efficiency.

However, patient selection remains crucial, as the degree of MR severity, left ventricular dysfunction, and myocardial viability significantly impact surgical outcomes. Future research should focus on refining patient stratification criteria and exploring minimally invasive approaches to further improve surgical efficacy and patient quality of life.

In conclusion, mitral valve repair should be considered an essential component of surgical treatment in patients with moderate-to-severe MR undergoing CABG, as it leads to better clinical outcomes and improved long-term prognosis.

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REFERENCES

1. Пулатова, Ш. Х. (2021). АРТЕРИАЛЬНАЯ ГИПЕРТОНИЯ И ХРОНИЧЕСКАЯ СЕРДЕЧНАЯ НЕДОСТАТОЧНОСТЬ: КОМОРБИДНОСТЬ КАК ФАКТОР РИСКА НЕДОСТАТОЧНОЙ ЭФФЕКТИВНОСТИ ТЕРАПИИ. In *АКТУАЛЬНЫЕ ВОПРОСЫ МЕДИЦИНЫ КРИТИЧЕСКИХ СОСТОЯНИЙ* (pp. 59-60).

2. Пулатова, Ш. Х., Азимов, Б. К., & Тоиров, И. Р. (2019). Эндоваскулярное лечение больных ишемической болезнью сердца. *Евразийский кардиологический журнал*, (S1), 327-328.

3. Khayotovich, K. D., & Ikromovich, T. I. (2022). SPECIFICITY OF RESUSCITATION MEASURES IN PATIENTS WITH ISCHEMIC HEART DISEASE AND ARRHYTHMIA. World scientific research journal, 10(1), 150-155.

4. Wolff AA, Rotmensch HH, Stanley WC, Ferrari R. Metabolic approaches to the treatment of ischemic heart disease: the clinicians' perspective. Heart Fail Rev. 2002 Apr;7(2):187-203. doi: 10.1023/a:1015384710373. PMID: 11988642.

5. Khayotovich, K.D., & Bekmurodugli, B.E. (2022). Case in clinical practice: Modern intensive care in the treatment of post-resuscitation complications caused by cardiac arrhythmias. *ACADEMICIA: An International Multidisciplinary Research Journal*.

6. Rizaeva, M. Z. (2022). The clinical course of atrial fibrillation in patients with coronary heart disease. European journal of molecular medicine, 2(1).

7. Turobkulovich, B. U., & Khayotovich, K. D. (2024). MORE THAN MINIMUM CONSCIOUSNESS: APPALLIC SYNDROME. *European Journal of Interdisciplinary Research and Development*, *23*, 113-115.

8. Ризаева, М. Ж. (2020). ЭФФЕКТИВНОСТЬ И БЕЗОПАСНОСТЬ ЭЛЕКТРИЧЕСКОЙ КАРДИОВЕРСИИ ПРИ ПЕРСИСТИРУЮЩЕЙ ФОРМЕ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ. Новый день в медицине, (4), 322-325.17. Потапов А.А., Крылов В.В., Лихтерман Л.Б. и др. Современные рекомендации по диагностике и лечению тяжелой черепно-мозговой травмы // Журнал вопросы нейрохирургии. – 2006. – № 1. – С. 3–8.

9. Qoyirov, A. Q., Kenjaev, S. R., & Xaitov, S. S. (2020). Egamova NT, Boltaev EB The role of delirium in patients with myocardial infarction of complicated acute heart failure. *New Day in Medicine*, *3*(31), 68-71.

10. Kh, P. S., & Ganiev, N. S. (2022). The Importance of Cardioprotective Artificial Ventilation of The Lungs in Intensive Care. Eurasian Research Bulletin, 15, 208-212.

11. Мирзажонова, Г. С., Пулатова, Ш. Б., & Набиева, Д. А. (2023). *Частота поражения сердца при анкилозирующем спондилите* (Doctoral dissertation, Zamonaviy tibbiyotning dolzarb muammolari yosh olimlar xalqaro anjumani, Uzbekiston).

12. Тешаев , У.Ш. и Ярбеков , Р.Р. 2023. СРАВНИТЕЛЬНАЯ ОЦЕНКА ЭФФЕКТИВНОСТИ РАЗЛИЧНЫХ ТЕХНИК АОРТОКОРОНАРНОГО ШУНТИРОВАНИЯ У БОЛЬНЫХ С ОЖИРЕНИЕМ. *Журнал гуманитарных и естественных наук*. 1, 2 (авг. 2023), 19–32.

13. Ревишвили Г. А., Жбанов И. В., Шабалкин Б. В. ИШЕМИЧЕСКАЯ МИТРАЛЬНАЯ НЕДОСТАТОЧНОСТЬ: СОВРЕМЕННЫЕ ВОЗМОЖНОСТИ ДИАГНОСТИКИ И ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ // Вестник Национального медико-хирургического Центра им. Н. И. Пирогова. 2021. №1. URL: https://cyberleninka.ru/article/n/ishemicheskaya-

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mitralnaya-nedostatochnost-sovremennye-vozmozhnosti-diagnostiki-i-hirurgicheskogo-lecheniya (дата обращения: 02.02.2025).

14. Antipov G.N., Kotov S.N., Shneider Yu.A. Modern methods of surgical treatment of ischemic mitral insufficiency. Russian Journal of Thoracic and Cardiovascular Surgery. 2019; 61 (2): 85–91 (in Russ.). DOI: 10.24022/ 0236-2791-2019-61-2-85-91.

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