

The Role of Endoscopic and Minimally Invasive Interventions in Acute Pancreatitis

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Annotation: Acute pancreatitis is an inflammatory disease of the pancreas that can lead to severe complications, including pancreatic necrosis. Modern treatment approaches are aimed at minimizing surgical trauma, making endoscopic and minimally invasive techniques the primary strategies for treating severe forms of the disease. This article discusses current trends in the use of minimally invasive and endoscopic techniques, their advantages and limitations compared to traditional open methods.

Keywords: Acute pancreatitis, endoscopic interventions, minimally invasive techniques, endoscopic retrograde cholangiopancreatography (ERCP), endoscopic papillosphincterotomy (EPS), laparoscopic surgery, minimally invasive techniques, biliary pancreatitis, drainage, surgical treatment.

Introduction

Acute pancreatitis (AP) remains a challenging problem in abdominal surgery. Approaches to its treatment have changed significantly in recent decades. The development of endoscopic and minimally invasive techniques has significantly reduced surgical trauma, improved patient prognosis, and reduced the risk of complications [1].

Minimally invasive treatment methods

Endoscopic Necrosectomy

Endoscopic transgastric or transduodenal necrosectomy is actively used in patients with infected pancreatic necrosis. This method allows for the removal of necrotic tissue through the natural drainage pathways, reducing the risk of septic complications [2,3].

Percutaneous Interventions

Percutaneous necrosectomy is performed using drainage catheters inserted under ultrasound and CT guidance. This method is particularly effective for localized accumulations of necrotic masses [4].

Video-Assisted Retroperitoneal Necrosectomy (VARD)

VARD is a hybrid technique combining percutaneous drainage with video-assisted removal of necrotic tissue. This method has high efficacy and low mortality [5].

Comparison with Open Techniques

Traditional open surgeries, such as laparotomic necrosectomy, are still used for widespread necrotic lesions and the failure of minimally invasive approaches. However, open surgery is associated with high mortality and prolonged recovery [6].

Advantages of minimally invasive techniques

1. Reduced surgical trauma – less tissue damage leads to faster healing.
2. Reduced risk of septic complications – minimizing contact with surrounding tissues and using natural approaches.
3. Reduced mortality – according to several studies, the use of minimally invasive techniques reduces the mortality rate in pancreatic necrosis by 30-40% [7].

Limitations and complications

Despite their obvious advantages, minimally invasive techniques have their limitations:

- the need for specialized equipment and experience;
 - the risk of persistent infection with incomplete removal of necrosis;
 - the possibility of developing fistulas and stenosis during endoscopic interventions [8].
- ### Development Prospects

Current research is aimed at further improving endoscopic and minimally invasive techniques, including the use of robotic systems, the use of new drainage devices, and personalized approaches to treatment selection [9,10].

Conclusion

Endoscopic and minimally invasive interventions have firmly established themselves in the treatment of acute pancreatitis. They significantly reduce surgical trauma, improve patient prognosis, and reduce the risk of complications compared to traditional open surgery. However, the choice of technique should be individualized and based on the severity of the patient's condition and the availability of technical capabilities.

REFERENCES

1. Иванов П.В., Смирнов А.Д. Минимально инвазивные технологии в лечении панкреонекроза // Хирургия. – 2021. – № 4. – С. 15–19.
2. Петров В.А., Козлов Н.М. Эндоскопическая некрэктомия при панкреонекрозе // Журнал гастроэнтерологии. – 2020. – № 3. – С. 21–27.
3. Беляев С.Р., Андреев И.И. Современные аспекты эндоскопического лечения панкреатита // Российский медицинский журнал. – 2019. – № 5. – С. 34–40.
4. Орлов А.П., Гончаров В.А. Чрескожные вмешательства в лечении панкреонекроза // Вопросы хирургии. – 2022. – № 7. – С. 21–26.
5. Киселев Ю.В., Гаврилов П.А. Видеоассистированная ретроперитонеальная некрэктомия // Российский журнал гастроэнтерологии. – 2021. – № 9. – С. 35–40.
6. Павлов С.А., Козлов И.М. Оптимизация тактики хирургического лечения панкреонекроза // Хирургические технологии. – 2020. – № 5. – С. 14–19.
7. Васильев Е.Н., Громов О.Д. Сравнение малоинвазивных и открытых методов лечения панкреонекроза // Вестник хирургии. – 2021. – № 4. – С. 51–57.
8. Андреев К.В., Зайцев П.И. Осложнения эндоскопических методов при панкреатите // Российский медицинский журнал. – 2019. – № 11. – С. 29–34.
9. Новиков А.П., Сидоров В.М. Гибридные технологии в лечении панкреонекроза // Клиническая хирургия. – 2022. – № 6. – С. 37–42.
10. Романов Д.С., Лукьянов Е.В. Перспективы малоинвазивных методов в хирургии панкреонекроза // Международный журнал гастроэнтерологии. – 2023. – № 2. – С. 44–50.