

ACUTE APPENDICITIS: DIAGNOSIS AND SURGICAL TREATMENT

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Abstract: Acute appendicitis is one of the most common surgical diseases, requiring prompt diagnosis and treatment. This article discusses the etiopathogenesis, clinical manifestations, diagnostic methods, and modern surgical treatment options for acute appendicitis. A comparative analysis of laparoscopic appendectomy and open surgery is provided. The article also highlights possible complications and preventive measures.

Keywords: acute appendicitis, appendectomy, laparoscopy, diagnosis, surgical treatment

INTRODUCTION

Acute appendicitis is an acute inflammation of the vermiform appendix and is one of the most frequent abdominal surgical emergencies. It occurs in all age groups, with the highest incidence between the ages of 10 and 30. The prevalence is nearly equal between males and females. Delayed diagnosis and treatment may lead to serious complications.

The incidence of appendicitis is approximately 100–200 cases per 100,000 people annually. The mortality rate in modern medical conditions is 0.1–0.5%, but this rate can increase significantly with delayed intervention.

ETIOPATHOGENESIS

Several factors contribute to the development of acute appendicitis.

Main causes include:

- Obstructive factors: luminal obstruction due to fecaliths, parasites, tumors, or lymphoid hyperplasia
- Infectious factors: bacterial or viral infections
- Immunologic factors: local immune suppression
- Genetic predisposition: positive family history of appendicitis

Pathogenesis stages:

1. Luminal obstruction of the appendix
2. Continued secretion leading to increased intraluminal pressure
3. Impaired blood circulation – ischemia
4. Bacterial infection – inflammation intensifies
5. Necrosis and perforation – development of severe complications

CLINICAL PRESENTATION

Classic symptoms:

- Pain: begins in the epigastric region and shifts to the right lower quadrant
- Fever: 37.5–38.5°C
- Loss of appetite: anorexia
- Nausea and vomiting: in 60–70% of cases
- Muscle tension: in the right lower quadrant

Specific signs:

- Rovsing's sign: pain in the right lower quadrant upon palpation of the left side
- Sitkovsky's sign: increased pain when the patient lies on the left side
- Blumberg's sign: rebound tenderness
- Cope's sign: pain with passive extension of the right thigh

Clinical presentation may vary depending on age and disease stage. Classical signs may be less evident in children and the elderly.

DIAGNOSTIC METHODS

Laboratory tests:

- Complete blood count: leukocytosis (>10,000/mcl), left shift
- Urinalysis: to exclude urinary pathology
- Biochemical tests: CRP, procalcitonin
- Coagulation profile: preoperative evaluation

Imaging and procedures:

- Ultrasound: thickened appendix, presence of fluid
- CT scan: gold standard for accurate diagnosis
- MRI: preferred in pregnant women
- Diagnostic laparoscopy: in uncertain cases

Differential diagnosis is crucial to rule out other conditions such as acute pancreatitis, cholecystitis, urolithiasis, or gynecological diseases.

SURGICAL TREATMENT

Appendectomy remains the mainstay of treatment for acute appendicitis. There are two principal approaches:

Open appendectomy:

- Traditional method
- Performed through McBurney-Volkovich-Dyachenko incisions
- Effective in uncomplicated cases
- Used where limited resources are available



Laparoscopic appendectomy:

- Minimally invasive
- Faster recovery
- Less postoperative pain
- Better cosmetic outcomes

Advantages of laparoscopic appendectomy:

- Minimally invasive
- Shorter hospital stay
- Fewer adhesions
- Improved cosmetic results

POSTOPERATIVE MANAGEMENT

Standard postoperative care includes:

- Pain management
- Antibiotic therapy (as indicated)
- Gradual resumption of activity
- Dietary and lifestyle guidance
- Wound care

Patients are typically discharged within 1–3 days, with complete recovery in 2–4 weeks.

COMPLICATIONS AND PREVENTION

Preoperative complications:

- Perforation
- Peritonitis
- Appendiceal mass
- Abscess formation

Postoperative complications:

- Wound infection
- Bleeding
- Bowel obstruction
- Adhesions

Preventive measures:

- Early diagnosis and timely surgery
- Aseptic surgical technique
- Prophylactic antibiotics
- Proper surgical procedure

CONCLUSION

Acute appendicitis is a serious condition requiring urgent diagnosis and treatment. Advances in



diagnostic techniques and surgical methods have significantly improved the prognosis. Laparoscopic appendectomy is currently the preferred approach due to its lower complication rate and faster recovery. Early diagnosis, correct surgical technique, and proper postoperative care are essential for successful outcomes.

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