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Evangel Hospital

Information on Appendectomy in Children / Adolescents

What is appendicitis?

Appendicitis means inflammation of the appendix, which is a blind, narrow tube attached to the beginning part of the large bowel with little function in a normal individual. It is thought that appendicitis begins when the appendix becomes blocked due to a build-up of mucus or stool, or sometimes due to swelling of the lymphatic tissue in the appendix. The accumulated bacteria within the appendix then cause infection and inflammation, which may spread through the wall of the appendix. The appendix can rupture and spread the infection throughout the abdominal cavity (peritonitis) or become confined to an area surrounding the appendix (abscess) which can be fatal.

Acute appendicitis is one of the commonest causes of acute abdominal pain in older children and adolescents. In younger children it is less common and sometimes difficult to diagnose.

Diagnosis is based on history of symptoms and physical examination backed by blood tests. Atypical history and equivocal signs may require a period of observation with serial reassessment and/or further investigations with x-rays, ultrasound and/or CT scanning. None of these tests can be 100% accurate in confirming or excluding appendicitis. When the clinical picture is doubtful and equivocal despite elaborate clinical evaluations and investigations, sometimes it is best to proceed with surgical exploration and removal of the appendix.

Appendectomy

The surgical removal of the appendix is called an Appendectomy, also known as an Appendicectomy. It is one of the most commonly performed operations in children and adolescents world-wide.

Laparoscopic / 'keyhole' approach

Nowadays this is often the operation of choice. In general, a small incision is made around the belly-button and the abdomen is inflated with carbon dioxide. A laparoscopic camera is inserted to visualize the abdominal cavity. Laparoscopic instruments are then inserted via two other small incisions to remove the appendix.

Conversion to conventional open operation may be necessary if there are severe infection with complications such as appendix rupture, abscess, extensive abdominal adhesions. An open Appendectomy requires a larger abdominal incision, most commonly made in the right lower quadrant transversely or diagonally.

The clinical diagnosis of appendicitis is usually verified at operation. But if the appendicitis appears mild at operation, the appendix is usually removed for routine pathology diagnosis while other abdominal organs are inspected to exclude any other acute abdominal conditions that require immediate surgery in the same setting. Rarely more complicated conditions are encountered requiring a major open operation and large abdominal incisions.

Open Appendectomy

This is a traditional operation. A single larger right-sided abdominal incision is made to carry out the surgical exploration and Appendectomy.

If the clinical diagnosis is not certain, or when complicated and severe infection is evident, it remains the discretion of the operating surgeon to decide for an open operation without laparoscopy.

Non-operative treatment

Although appendicitis is usually treated by Appendectomy in the emergency setting, there are occasions, as listed below, when initial non-operative management is considered.

1. Complicated infection with 'appendix mass' or abscess that may be treatable by initial antibiotic course with or without image-guided needle drainage of pus.
2. Under research protocol/on clinical trial basis approved by official bodies and consented by individual patient.

After the acute infection has subsided, an 'interval Appendectomy' will be done, usually after a few months, as a completion treatment.

Open or Laparoscopic Appendectomy?

After laparoscopic Appendectomy, wound infections were less likely, pain after surgery was less, and for older children the hospital stay may be shorter with earlier return to normal activity and sport compared with after open procedures. Particularly adolescent girls and obese patients seem to benefit from the laparoscopic procedure more than other groups. But overall the incidence of persistent intra-abdominal infection and abscesses was higher and the duration of surgery is usually slightly longer for laparoscopic procedures.

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MI-CND067Aug23v04E

Preparation before surgery

Once decided for emergency operation, the patient should not eat or drink. It is important to follow fasting instruction otherwise the operation may need to be postponed. The surgeon will explain the operation including the risks and a consent form will be signed. Parents have to make sure that they fully understand the explanation before signing the consent. An anaesthetist will also see the patient and explain the risks of general anaesthesia. If the patient has any medical problems or drug allergies, the doctors must be informed. Antibiotics, usually intravenous, will be given at or before surgery depending on the severity of the infection.

Timing for surgery

When an emergency Appendectomy is decided, it will take place at the next available vacant session in the emergency operating room. The waiting time may last for 6-8 hours subject to the severity of the appendicitis. The operation may last from 30 minutes to several hours in complicated cases.

Care after surgery

The patient usually has to continue fasting during the first day after surgery. Diet may gradually be resumed over the next few days depending on the severity of the appendicitis and recovery of the gut function. Painkillers in the form of oral tablets/syrups, rectal suppositories or injections are prescribed according to the extent of surgery. Intravenous antibiotics may be continued for a few days for typical appendicitis, or up to 10-14 days if infection is severe. Ambulation is encouraged after the first few days according to the extent of surgery and wound pain. Timing for discharge depends on the speed of recovery, which vary. It may be a few days to a few weeks if there are complications arising after severe infections.

Complications

Overall, appendectomies in children and adolescents are safe operations and serious complications are uncommon. Nevertheless, a number of potential complications may occur, with chances varying between keyhole and open operations. Parents should discuss with their surgeons should these complications arise:

General - Bleeding / Urinary retention / Wound infection and gaping / Late hypertropic wound scar

Specific - Intra-abdominal abscess / Late intra-abdominal and pelvic adhesions that may in future cause bowel colic, obstruction, fallopian tube obstruction and infertility in girls.

Rare but significant (if any) - Injury to major blood vessels, bowels, ovary, fallopian tube, urinary bladder / Torrential bleeding.

Things to take note on discharge

1. Contact doctor at the Accident & Emergency Department if pain or redness increase around the wounds.
2. Take the analgesics and /or antibiotics prescribed by your doctor if required.
3. Resume your daily activity gradually and avoid vigorous physical exercise in the first 4 weeks (according to individual situation).
4. Remember the dates of taking off stitches/clips (if any) in the clinic, and follow-up in the specialist clinic.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

Reference

Hospital Authority: "*Appendectomy in Children `/ Adolescents" (2021)*
Smart Patient: https://www.ekg.org.hk/pilic/public/surgery_pilic/paedsurg_appendectomyinchildrenandadolescents_0216_eng.pdf (24-07-2023)

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