Acute Abdomen : Causes, Symptoms, Diagnosis and Treatment

Acute abdomen is a surgical emergency characterized by sudden or rapid onset of severe abdominal pain, tenderness and muscular rigidity severe enough to warrant patients admitted to hospital.

The cause of this will sometimes be a life-threatening condition that will require surgical intervention immediately or soon after resuscitation.

Causes of acute abdomen

The cause of these can be grouped into:

- Inflammatory conditions,
- Perforation of a hollow viscus,
- Hemorrhage,
- Medical conditions,

Diagnosis of Acute abdomen

Diagnosis is made from history physical findings and a few but carefully chosen laboratory investigations.

History

A carefully taken history is the key to a diagnosis of the cause of acute abdomen in children.

Reliance is made on history from:

1. Parents for the infants.
2. An older child with parental input.
3. Old child's own history.

Pain

The acute abdomen is heralded by abdominal pains. As relates to acute abdomen specific aspects of the pain are important in leading to diagnosis.

a**. Site of pain**

(i). Visceral pain (colic obstruction) is vague and is referred to the region of sometimes segments of the viscus involved:

- Epigastric for foregut.
- Umbilicus for midgut.

- Hypogastric for hindgut.

This is unreliable in young children. Older children can localize pain more accurately. You will need to ask the child to point to indicate the location of the pain.

(ii).Sometimes the pain is a result of direct stimulation of the peritoneum and peritonitis and is referred directly to the site of origin of pain. It is sharp will described and is associated with tenderness.

b. **Shift of pain**

Pain shifts when perforation of the involved organ occurs and there is direct stimulation of the parietal peritoneum. E.g. the pain of acute appendicitis is initially epigastric. (Visceral pain) which later shifts to the right iliac fossa when peritonitis sets on.

c. Radiation of pain

Parietal pain sometimes felt elsewhere. This is not common in children

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d. Duration of pain

Establish the duration of the present pain and whether it's a continuation of episodes of pain experienced in the past to establish whether this is an acute or chronic problem.

e. **Progress of pain**

The pain that is getting better may resolve but the pain that is getting worse may require surgical intervention.

f.Nature of pain

Progress and crescendo pain is an important surgical pain as this is typically intermittent pain of the intestinal, biliary or renal condition.

g. **Severity of pain**

The severity and uniqueness of the pain are determined by asking whether a similar pain has been experienced before and whether this is the worst pain ever felt.

Aggravating factors

Establishing the aggravating factors is central to making a diagnosis and the effect of abdominal movements is of particular importance.

Relieving factors

Ask the patient about the factors that reduce the intensity of the pain.

Vomiting

Ask about the onset of vomiting. Its qualities and frequency color and type reflect the level and duration of the intestinal unrest.

- Food in early cases in the early composition of the vomitus.
- Bloodstained to bile staining later in the history.
- Bile-stained or fecal is an indication of intestinal obstruction unless other causes can be found.

Bowel Habit

Is there a genuine change in bowel habit? Establish what is normal in the patient before concluding there is a change in pattern.

- Constipation after previous abnormal surgery should alert the possibility of adhesion causing intestinal obstruction.
- Diarrhea in many surgical conditions is slightly loose and associated with other features. Loose stool is associated with appendicitis, intussusception.
- Blood in stools is not common. Passage of bricks red stool without abdominal pain is an indication of Meckel's diverticulum. Bloody mucosal stool in a sick child is an indication of the pathology of upper gastrointestinal blood for varices or peptic ulceration present as rectal bleeding.

Micturation

Symptoms of abnormal micturition may accompany surgical diseases. Micturating pain occurs with pelvic appendicitis. Dribbling of some occurs with constipation.

Menstruation

- Complete menstrual history in teenage girls.
- Sudden mid-cycle pain is indicated if ruptured follicle.
- Amenorrhea with sudden abdominal pain may indicate an ectopic pregnancy.

Physical examination

Physical examination is the second part of the process making a diagnosis in an acute abdomen. It should yield new information that reinforces impressions made from history.

The physician should use his eyes, ears and his hands and he will achieve this by inspection, auscultation palpation, percussion, and auscultation.

Observe

The inactive of the child is most likely not having a significant surgical problem.
A quiet, silent on lying with no movement is not likely having a surgical problem.
Restricted abdominal thoracic movements and it is indicative of acute abdomen or pneumonia.
Jaundice - chills.

Temperature and pulse.
State mucous membrane.
Pallor.

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Palpation

Warm hands are essential for a good examination.
Avoid touching sore areas as pointed out by the patients' abdominal wall.
Look at the child's face while palpating the abdomen.

Look for;

1. Stiffening of the muscular wall of the abdominal wall is indicative of local peritoneal initiation.
2. Feel for the continuation of respiratory movement these are absent within the peritonitis.
3. This is muscular stiffening its indicative of peritonitis.
4. Masses felt on deep palpation may be abscess or intussusception.
5. Emptiness with right iliac fossa indicative of intussusception.

Rectal Examination

This can be informative and important to reach a diagnosis.

Intussusception: blood mucoid stool or mass is palpable
Appendicitis: tenderness or mass if a bowel present.
Examine all hernial orifices for obvious hernia, which may be obstructed.

Auscultations

In intestinal obstructions, the bowel sounds are high pitched.
In peritonitis, the bowel sounds are reduced or absent.
In gastroenteritis, the bowel sounds are rushing.

Diagnostic Investigations

Diagnosis of the cause of acute abdomen in a child is often than 75% of the case made by history and physical examination in more than 75% cases.

A few focused laboratory and imaging evaluation is carried out not so much as to arrive at diagnosis but as aid with a plan of management.

Laboratory evaluation

- Complete blood count, a shift to the left is sometimes relevant.
- Serum chemistry.
- Electrolytes.
- Blood, urea nitrogen.

- Blood gas analysis.

All are none specific for diagnosis and useful in the management of patients with dehydration, acid basis and electrolyte imbalance and may indicate the presence of bacterial infection.

Urinalysis: of low diagnostic value but can confirm the presence of urinary tract infections or suspicion of a ureter stone.

Pregnancy test to rule out an ectopic pregnancy.

Imaging

Plain x-rays.

- Useful in intestinal obstruction

- Useful in appendicolith
- Useful in urinary stone.
- Useful in perforation infection.

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