Mid Essex Hospital Services NHS Trust

MANAGEMENT OF ABDOMINAL PAIN IN CHILDREN AND YOUNG PEOPLE	**Type: Clinical Guideline** **Register No: 09135** **Status: Public**

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Related Trust Policies (to be read in conjunction with)	04072 Hand hygiene 04064 Safeguarding Children 10042 Urinary Tract infection Children's Early Warning Tool (CEWT)

Document Review History:

Version Number:	**Authored/Reviewed by:**	**Active Date:**
1.0	Caroline Fox	28th April 2011
2.0	Victoria Machell	6th November 2014
3.0	Victoria Machell	20th December 2017

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1.0 Purpose

1.1 This guideline is to direct the assessment and treatment of children and young people with acute abdominal pain, which depends on a good history and careful examination.

1.0 Equality and Diversity

2.1 Mid Essex Hospital Services NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

3.0 Background

3.1 Childhood abdominal pain is a very common reason for parents to seek medical advice. Most childhood pain is benign and self limiting, resolving rapidly. However, this means that we need to be especially astute at picking up more serious cases which can even be life-threatening.

3.2 Pathological causes of abdominal pain

- Visceral Pain (splanchnic) e.g. stomach, intestine
- Parietal Pain (somatic) from parietal peritoneum
- Referred Pain e.g. pneumonia

3.3 Visceral pain is usually dull whilst parietal and referred pain is usually sharp and discrete.

3.4 Age is a key factor in diagnosing the cause of the abdominal pain. Young children, particularly under 5 years, often refer pain to the umbilical region, irrespective of the underlying cause.

3.5 Abdominal pain can rarely be a manifestation of fabricated or induced illness. In these suspected cases all intervention must follow the safeguarding and protecting Children Policy. (04064)

4.0 Diagnosis

4.1 A good history taking is vital in making a informed diagnosis of the cause of abdominal pain in children and young people.

4.2 Acute appendicitis must be considered in any child with severe abdominal pain. In the very young child, in whom the risk of perforation is higher, the presenting symptoms are less specific. The diagnosis is clinical.

4.3 The peak age for intussusception is 6-12 months. Plain AXR may show signs of bowel obstruction, with decreased gas in the right side of the abdomen may help with the diagnosis. The diagnosis is confirmed by air insufflation or barium enema in a paediatric surgical unit, with reduction usually possible by the same means (unless signs of peritonitis - risk of perforation).

4.4 Mid-gut volvulus is commonest in the newborn period, but can occur in later childhood. Pre-disposing factors include mal-rotation and abnormal mesentery.

4.5 Vomiting is rarely due to constipation.

4.6 Some children suffer recurrent non-specific abdominal pain, with no organic cause identifiable. Constipation is often an important contributing factor. Psychogenic factors (e.g. family, school issues) need to be considered.

4.7 Some less common diagnoses need to be considered in patients with certain underlying chronic illnesses. Hirschsprung's disease can be complicated by enterocolitis, with sudden painful abdominal distension and bloody diarrhoea. These patients can become rapidly unwell with dehydration, electrolyte disturbances, and systemic toxicity, and are at risk of colonic perforation.

4.8 Primary bacterial peritonitis can occur in children with nephrotic syndrome, in children who have undergone splenectomy and those with ventriculo- peritioneal shunt.

5.0 Physical Examination

5.1 Verbal consent should be gained from child/parent and age appropriate explanation should be given. Confirm with the child/young person that they are happy for accompanying parent to be present during examination.

5.2 Consider safeguarding children issues (04064)

5.3 Follow the Chaperone Policy (05118) if patient is not accompanied by parent/guardian when a physical examination takes place.

5.4 Record baseline observations TPR BP and CEWT score and blood glucose monitoring if vomiting.

5.5 Points to consider during the physical examination

- What is the CEWT score and pain score?
- Can you distract the child from the pain
- Haemodynamic status - pulse rate, blood pressure in older patients, mucous membranes, urine e.g. wet nappy
- Rash e.g. Henoch Schonlein purpura
- Is there jaundice?
- Ask the child to point at the pain with one finger
- Check the abdomen for tenderness, rebound tenderness, guarding, organomegaly, loin pain, bowel sounds and hernia
- In males check testes for torsion
- Other system examination as appropriate
- Urinalyses – refer to the UTI guideline (10042),
- Consider a pregnancy test.

5.6 Rectal and and/or vaginal examination may rarely be necessary. In this situation ask for a consultant paediatrician opinion and guidance on the correct intervention.

6.0 Safeguarding Children

6.1 Some children suffer recurrent non-specific abdominal pain, with no organic cause identifiable. Constipation is often an important contributing factor. Psychogenic factors (e.g. family, school issues) need to be considered and addressed with appropriate professionals. Should a child be deemed vulnerable, at risk of harm or significant harm then steps should be taken to ensure the child's safety and wellbeing.

6.2 If the child continually presents with abdominal pain for which all medical causes have been eradicated, the professional should consider the possibility of fabricated or induced illness syndrome (FII) and seek advice from a Consultant Paediatricians and the Named Nurse Safeguarding Children. It should be acknowledged that fabricated/induced illness syndrome is an extremely complex safeguarding concern and therefore would require the involvement of lead safeguarding professionals.

6.3 A clear holistic assessment of the child and their presentation will enable the professionals to gain an opinion on the cause and concerns relating to the child and address safeguarding issues accordingly. The possibility that the cause of abdominal pain is due to underlying issues of abuse or neglect should not be overlooked.

7.0 Causes of Abdominal Pain in Children

	Emergencies	**Other Causes**
Medical Causes	Diabetic Ketoacidosis Inflammatory bowel disease (rare)	Gastroenteritis (bacteria or viruses) Constipation Mesenteric lymphadenitis Urinary tract infection Henoch Schonlein purpura
Surgical Causes	Appendicitis Bowel obstruction e.g. Intussusception, volvulus) Trauma Incarcerated hernia Peritonitis Testicular torsion Renal obstruction/stones	
Drugs/ Toxins	Accidental or self-harm ingestion	
Referred Pain		Pneumonia
Unknown aetiology		Infantile colic Functional bowel disease
Rare Causes		Angioneurotic oedema Familial Mediterranean fever Hepatitis Gall Stones Pancreatitis Sickle cell anaemia/crisis Peptic ulcer disease Concealed pregnancy Inflammatory bowel disease Irritable bowel syndrome

8.0 Differential Diagnosis

8.1 A good way to consider the differential diagnosis is according to the patient's age.

Age group	Surgical Causes	Medical Causes	Other Causes
Birth -1 year	Intussusception Volvulus Incarcerated hernia Renal obstruction	Gastroenteritis Constipation UTI GOR	Infantile colic Hirschsprung's disease
2-5 year	Appendicitis Hernia Intussusception Volvulus Trauma Renal obstruction Meckel's diverticulum	Gastroenteritis Constipation UTI	Mesenteric lymphadenitis Henoch Schonlein purpura Sickle cell crisis
6-11years	Appendicitis Trauma Renal Obstruction	Gastroenteritis Constipation UTI	Mesenteric lymphadenitis Henoch Schonlein purpura Sickle cell crisis Pneumonia Functional Pain Inflammatory Bowel disease Irritable bowel syndrome
12-16 years	Appendicitis Trauma Ovarian/testicular torsion Renal obstruction Gall stones	Gastroenteritis Constipation UTI	Inflammatory Bowel Disease Pregnancy Gynaecological causes Mittelschmerz Pelvic Inflammatory disease Irritable Bowel Syndrome

9.0 Pitfalls to watch out for in Children with Abdominal Pain

- Male patients - always consider torsion of the testes
- Consider illicit drug use
- Consider safeguarding children issues
- Always consider intussusception with any rectal bleeding
- Seek specialist advice if unsure of diagnosis
- Repeat physical examination may help
- Use analgesia as required - it does not affect diagnostic accuracy
- In females always consider gynaecological disorders and pregnancy related disorders, the patient should be spoken to away from accompanying adults.

10.0 Investigations

10.1 These will depend upon the clinical findings and may not be needed e.g. viral gastroenteritis refer to D&V guidelines.

10.2 Urinalysis (dipstick) - microscopy, culture, sensitivities, refer to UTI guideline.

10.3 Blood tests - capillary blood glucose, plasma glucose, full blood count, renal function, liver function, and inflammatory markers.

10.4 Other blood tests if indicated e.g. paracetamol levels, thyroid function tests

10.5 Stool samples if diarrhoea - microscopy, culture, sensitivity, ova, cysts, parasites

10.6 Abdominal imaging - abdominal X-ray (looking for obstruction), chest X-ray (looking for pneumonia and air under diaphragm), ultrasound scan of the abdomen and testes

10.7 Consider further imaging but only after discussion with the consultant surgeon or paediatrician.

10.8 More specialist investigations e.g. barium enema will depend upon preliminary findings, discuss need for further investigations with consultant on call.

11.0 Management of Children with Abdominal Pain

11.1 This depends on the cause. Although most children with an acute abdominal pain have self-limiting conditions, the pain may herald a surgical or medical emergency.

11.2 Children more than 5 years are to be referred to paediatric surgeons at Royal London Hospital (RLH), Hospital for Sick Children Great Ormond Street (GOS), or Addenbrookes, Cambridge.

11.3 Children more than 5 years are to be referred to Broomfield Surgical on call team by contacting the on call SpR

11.4 Request an opinion from the surgical on-call team when surgical concerns arise.

11.5 Keep the patient fasted until surgical assessment

11.6 Establish intravenous access, and measure electrolytes if the patient appears dehydrated, and cultures of blood and stool if potentially septic.

11.7 Monitor vital signs and Children Early Warning Tool (CEWT) score.

11.8 Fluid resuscitation may be required (initial bolus 20ml/kg normal saline)

11.9 Provide adequate analgesia using pain ladder tool. Do not withhold appropriate analgesia even if child is to be referred

11.10 Pass a nasogastric tube if a bowel obstruction is suspected.

12.0 Staff Training

12.1 All medical and nursing staff are to ensure that their knowledge, competencies and skills are up-to-date in order to complete their portfolio for appraisal.

12.2 During induction process junior medical staff will receive instruction on current polices and guidelines.

12.3 Case presentation and junior doctor teaching will discuss the management of acute abdominal pain cases and learn from the outcomes.

12.4 Where a patient's notes have demonstrated that the appropriate action has not been taken a 'risk event form' is to be completed. This will address any further training needs for staff that require updating**.**

13.0 Infection Prevention

13.1 All staff should follow Trust guidelines on infection prevention ensuring that they effectively 'decontaminate their hands' before and after each procedure.

14.0 Audit and Monitoring

14.1 Where a child's notes have demonstrated that the appropriate action has not been taken a 'risk event form' is to be completed. This will address any further training needs for staff that require updating.

14.2 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy (register number 08076), the Corporate Clinical Audit and Quality Improvement Project Plan and the Maternity annual audit work plan; to encompass national and local audit and clinical governance identifying key harm themes. The Women's and Children's Clinical Audit Group will identify a lead for the audit.

14.3 The findings of the audit will be reported to and approved by the Multi-disciplinary Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

14.4 The audit report will be reported to the monthly Directorate Governance Meeting (DGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

14.5 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

14.6 Key findings and learning points will be disseminated to relevant staff.

15.0 Communication

15.1 Once ratified, it will be uploaded to the intranet and website. Staff are notified of all ratified documents in Focus.

15.2 It is the responsibility of the author to ensure that all clinical staff working with children are individually notified by email.

16.0 References

Leung AKC; Sigalet DL Acute abdominal pain in children. American Family Physician. June 1, 2003. Vol.67,Iss11; pg.2321

Noe JD: Li BUK. Navigating recurrent abdominal pain through clinical clues, red flags and initial testing. Paediatric Annals. Vol. 38, Iss. 5 .

Appendix A

Abdominal Pain Alogorithim