Whittington Health NHS

Abdominal Pain (Acute) in Children (<16 years)

Subject:	Abdominal pain (acute) in children
Policy Number	N/A
Ratified By:	Clinical Guidelines Committee
Date Ratified:	April 2015, reviewed February 2019
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Policy Executive Owner:	CYP ICSU Clinical Director
Designation of Author:	Dr M Bacon (paediatric speciality trainee) Prof C Fertleman (paediatric consultant)
Name of Assurance Committee:	As above
Date Issued:	February 2019
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Target Audience:	Paediatric department Emergency department Children's ambulatory unit
Key Words:	Abdominal pain (acute) Children

Version Control Sheet

Version	Date	Author	Status	Comment
1.0	April 2015	Melody Bacon	**Off line**	**Approved at April 22 CGC**
2.0	February 2019	Prof C Fertleman	LIVE	Reviewed with no change required.

Important Abbreviations contained within this guideline

ABC	Airway, Breathing, Circulation
CRP	C reactive protein
ESR	Eythrocyte sedimentation rate
FBC	Full blood count
HUS	Haemolytic uraemic syndrome
LFTs	Liver function tests
PR	Per rectal examination
U&Es	Urea and electrolytes

➢ Criteria for use

Any child under 16 years old who presents to the emergency department with acute abdominal pain.

➢ Background/ introduction

Abdominal pain is one of the most challenging symptoms in paediatrics. It is very common. Most abdominal pain is benign and self limiting. However, it is important to be able to identify and treat the serious, life-threatening conditions early to prevent morbidity and mortality.

➢ Inclusion/ exclusion criteria

Any child under 16 years old who presents to the emergency department with acute abdominal pain.

➢ Clinical management

Common causes of abdominal pain - **(time critical conditions in bold)**

Age group	Common Medical Causes	Common Surgical Causes	Other causes
Birth to 12 months	Gastroenteritis Constipation Urinary tract infection	**Necrotising enterocolitis** **Intussusception** **Malrotation/Volvulus** **Incarcerated hernia** **Hirschprung's disease** **Torsion of the appendix testis** **Trauma**	Infantile colic
1–5 years	Gastroenteritis Constipation Urinary tract infection Dietary protein allergy	**Appendicitis** **Meckel's diverticulitis** **Volvulus** **Incarcerated hernia** **Idiopathic scrotal oedema** **Foreign body ingestion** **Trauma**	Mesenteric adenitis Henoch Scholein Purpura **Diabetic Ketoacidosis** **Sickle cell crises** **Haemolytic uraemic syndrome**
6–11 years	Gastroenteritis Constipation Urinary tract infection	**Appendicitis** **Trauma**	Mesenteric adenitis Abdominal migraine Henoch Scholein Purpura **Diabetic Ketoacidosis** **Sickle cell crises** Pneumonia Functional pain
12–16 years	Gastroenteritis Constipation Dyspepsia	**Appendicitis** **Trauma** Rupture / torsion of an ovarian cyst **Torsion of the appendix testis** and epididymitis	Dysmenorrhoea **Diabetic Ketoacidosis** Mittelschmerz (ovulation) **Ectopic pregnancy** Pelvic inflammatory disease Inflammatory bowel disease **Adrenal crisis**

History

- It is vital to elicit the following: **S**ite, **O**nset, **C**haracter, **R**adiation, **A**ssociated symptoms, **T**iming, **E**xacerbating/relieving factors, **S**everity

Red Flags

- Clinically unwell
- Unintentional weight loss or poor growth
- Blood in stool
- Bilious vomiting
- Unexplained fever / temperature instability
- Not tolerating oral fluids
- Passed meconium more than 24 hours from birth
- Pain or bleeding with urination
- Significant vomiting, constipation, diarrhoea, bloating or gas
- History of (abdominal) trauma

Table: time critical conditions and common clinical presentation

Condition	Common Presentation
Surgical conditions 	
Trauma	History of trauma (road traffic accidents/collisions, falls, child abuse). Abdominal pain. Abdominal distension. Shock (hypovolaemic).
Appendicitis	Periumbilical abdominal pain that localizes to the right iliac fossa. Anorexia. Vomiting. Fever. Guarding. Shock (septic or hypovolaemic).
Necrotising fasciitis	Newborn. Lethargy. Poor feeding. Vomiting may be bilious. Bradycardia, apnoea. Temperature instability. Septic shock. Abdominal distension. Blood in stool. Discoloured abdominal wall. Shock (septic or hypovolaemic).

Bowel obstruction (may be secondary to adhesions)	Previous abdominal surgery. Abdominal pain. Abdominal distension. Vomiting may be bilious. Not passing stools or flatus. Shock (septic or hypovolaemic).
Intestinal malrotation or midgut volvulus	Abdominal pain. Abdominal distension. Vomiting may be bilious. Shock (septic or hypovolaemic).
Intussusception	Sudden onset. Intermittent episodic severe abdominal pain associated with inconsolable crying with drawing up of legs followed by pallor and lethargy. Vomiting may be bilious. Blood in stool (late sign). There may be a palpable sausage-shaped abdominal mass in the right upper quadrant. Shock (septic or hypovolaemic).
Ectopic pregnancy	Post menarche. Sexually active. Amenorrhoea. Vaginal bleeding. Right or left iliac fossa pain. Positive pregnancy test. Shock (septic or hypovolaemic) and abdominal distension if ruptures.
Incarcerated hernia	Sudden onset. Irritable / crying. Abdominal distension. Vomiting. Irreducible tender hernia.
Testicular torsion	Sudden onset pain. Severe testicular pain may radiate to the lower abdomen. Nausea and vomiting. The scrotum may be oedematous, indurated and erythematous and the affected testis usually is tender, swollen, and slightly elevated because of shortening of the cord from twisting.
Rupture / torsion of an ovarian cyst	Sudden onset. Vomiting. Abdominal pain. Adnexal mass.
Hirschprung's disease	Not passed meconium in first 24 hours of birth. Strains to open bowels or bowels not opened for >4 days in a neonate. Abdominal distension. Blood in stool.
Medical conditions 	
Diabetic ketoacidosis	Polyuria, polydipsia, abdominal pain, vomiting, confusion.
Haemolytic uraemic syndrome (HUS)	Abdominal pain. Nausea, vomiting. Prodrome of diarrhoea (may be bloody). Classic triad: microangiopathic haemolytic anaemia, thrombocytopenia, acute renal failure.

The following must be referred to **paediatric registrar or consultant on call**

- Any child with abdominal pain under 6 months age
- Any child with abdominal pain who appears unwell
- Any significant positive findings in history or examination (notably any red flags)

- Any child you suspect appendicitis please refer to appendicitis clinical guideline

	Please see Whittington Health Guideline: **Paediatric appendicitis**

Examination

- Observations (temperature, heart rate, blood pressure, respiratory rate, capillary refill time, oxygen saturations)
- Full systems examination (cardiovascular, respiratory, ears, nose, throat)
- Examine abdomen (including inspection of hernia orifices and external genitalia)) looking for:
    - Focal vs. generalised tenderness
    - Rebound tenderness
    - Abdominal masses
    - Distension
    - Palpable faeces

- Do **NOT** perform a PR examination. This should be done once only, if at all, and by the most experience doctor with a chaperon.

Investigations

- All must have a urine dipstick
- Any post menarche female with abdominal pain should have a pregnancy test done
- If the presence of any red flags do blood tests (FBC, U&Es, LFTs, CRP, ESR, amylase, blood sugar), blood sugar level
- If infective cause suspected consider doing a stool culture, Helicobacter pylori test
- Chest xray if pneumonia is suspected
- Abdominal x-ray if obstruction suspected but should only be requested by the paediatric registrar as it exposes the child to a significant amount of radiation
- Ultrasound following discussion with senior staff

Treatment

- Airway, Breathing, Circulation (ABC)
- Offer all children in pain appropriate analgesia
- Early referral to relevant speciality

- Keep patients nil by mouth if surgical cause suspected
- Maintain adequate hydration
- Treat the underlying cause

Discharge

- If the child does not appear acutely unwell and there are no abnormal signs, then perform a urine dipstick and review the likely diagnosis
- Offer analgesia as required
- Treat any underlying cause
- Consider the need for follow up (GP or paediatrics)
- Offer clear advice to return if symptoms persist or worsen and record this advice in the notes

➢ Further information

- www.uptodate.com – last updated 09/07/2014
  - Emergent evaluation of the child with acute abdominal pain
    - Algorithm 1: Acute abdominal pain: males and premenarchal females
    - Algorithm 2: Acute abdominal pain in postmenarchal girls
  - Chronic abdominal pain in children and adolescents

- www.patient.co.uk
  - Abdominal pain in children

➢ Contacts (inside and outside the Trust including out-of-hours contacts)

- Paediatric registrar on call, bleep 3111
- Surgeon on call via Cencom
- Urologist on call via Cencom
- Paediatric consultant on call via Cencom

➢ References (evidence upon which the guideline is based)

- Neuman M, Ruddy R et al, Emergent evaluation of the child with acute abdominal pain, up-to-date
- Fishman MB, Aronson MD, Chacko MR et al, Chronic abdominal pain in children and adolescents: Approach to the evaluation, up-to-date
- Berger MY, Gieteling MJ, Benninga MA, Chronic abdominal pain in children, BMJ, 2007;12:334(7601):997-1002
- D'Agostino J, Common abdominal emergencies in children, Emergency Medicine Clinical North America, 2002; 20:139
- Reynolds SL, Jaffe DM, Diagnosing abdominal pain in a pediatric emergency department. Pediatric Emergency Care, 1992;8:126

➢ Useful web based resources

http://www.rch.org.au/clinicalguide/guideline_index/Abdominal_pain/

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval

		Yes/No	Comments
1.	**Does the procedural document affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the procedural document likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the procedural document without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this procedural document, please refer it to the Director of Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact the Director of Human Resources.

Checklist for the Review and Approval of Procedural Document

To be completed and attached to any procedural document when submitted to the relevant committee for consideration and approval.

	Title of document being reviewed:	Yes/No	Comments
1.	**Title**		
	Is the title clear and unambiguous?	Yes	
	Is it clear whether the document is a guideline, policy, protocol or standard?	Yes	
2.	**Rationale**		
	Are reasons for development of the document stated?	Yes	
3.	**Development Process**		
	Is it clear that the relevant people/groups have been involved in the development of the document?	Yes	
	Are people involved in the development?	Yes	
	Is there evidence of consultation with stakeholders and users?	Yes	
4.	**Content**		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
5.	**Evidence Base**		
	Are key references cited in full?	N/A	
	Are supporting documents referenced?	N/A	
6.	**Approval**		
	Does the document identify which committee/ group will approve it?	Yes	
7.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	Yes	

	Title of document being reviewed:	Yes/No	Comments
8.	**Document Control**		
	Does the document identify where it will be held?	Yes	
9.	**Process to Monitor Compliance and Effectiveness**		
	Are there measurable standards or KPIs to support the monitoring of compliance with and effectiveness of the document?	Yes	
	Is there a plan to review or audit compliance with the document?	Yes	
10.	**Review Date**		
	Is the review date identified?	Yes	
	Is the frequency of review identified? If so is it acceptable?	Yes	
11.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for co-ordinating the dissemination, implementation and review of the document?	Yes	

Executive Sponsor Approval			
If you approve the document, please sign and date it and forward to the author. Procedural documents will not be forwarded for ratification without Executive Sponsor Approval			
Name		Date	
Signature			
Relevant Committee Approval			
The Director of Nursing and Patient Experience's signature below confirms that this procedural document was ratified by the appropriate Governance Committee.			
Name		Date	
Signature			
Responsible Committee Approval – only applies to reviewed procedural documents with minor changes			
The Committee Chair's signature below confirms that this procedural document was ratified by the responsible Committee			
Name		Date	
Name of Committee		Name & role of Committee Chair	
Signature			

Tool to Develop Monitoring Arrangements for Policies and guidelines

What key element(s) need(s) monitoring as per local approved policy or guidance?	Who will lead on this aspect of monitoring? Name the lead and what is the role of the multidisciplinary team or others if any.	What tool will be used to monitor/check/observe/Assess/inspect/ authenticate that everything is working according to this key element from the approved policy?	How often is the need to monitor each element? How often is the need complete a report ? How often is the need to share the report?	What committee will the completed report go to?
Element to be monitored	**Lead**	**Tool**	**Frequency**	**Reporting arrangements**
Early referral to surgeons and/or paediatric team **No delay in diagnosing and treating life threatening causes of abdominal pain**	**Doctors** **Nurses**	**DATIX reports** **Audit** **Complaints**	**6 months** **6 months**	**Paediatric, surgical and emergency department teams**