Incidence of perforated appendicitis in Children under five years of age: A review

Dr O. Olafimihan, Mr. M. Eltom, Miss S. Besarovic, Mr R. Daniel, Mr M. Kazmierski and Mr M. Fleet

Paediatric Surgery Department, Hull and East Yorkshire NHS trust

Aim
1) To review the incidence of appendix perforation in children five years of age and below.
2) To see if any delays in presentation to diagnosis and why
3) To compare the presence of perforation with duration of symptoms

Method
1) Number of appendicectomies done within selected timeframe obtained from hospital’s theatre database.
2) Retrospective review of clinical records of patients with acute appendicitis done.
3) Operative and histological evidence of perforation analysed and compared with duration of symptoms.

Results
Most common associated symptom: diarrhoea and vomiting (Second commonest: URTIs/ viral type illnesses)
Duration of symptoms: ~ Twenty hours to eleven days
Perforations: ~ 71% (29 of 41 patients)
Symptoms vs perforation: ~45% of those with perforation had symptoms longer than 5 days (figure 1)
Imaging: ~90% were reported as positive for appendicitis on ultrasound and correlated with intraoperative findings.
Inflammatory markers: Generally raised but no specific correlation between very high levels and an increased rate of perforation and/or longer duration of symptoms.

Conclusion/recommendations
1) Have a high index of suspicion in children five years old and below with abdominal pain associated with non-specific symptoms such as gastroenteritis and/or viral type illnesses
2) Rise in inflammatory markers (e.g. white cell count and CRP) may not specifically indicate a perforation but are a useful aid towards diagnosis of appendicitis.
3) Imaging such as ultrasound can be very useful in making a positive diagnosis of appendicitis in cases where clinical evidence is not clear cut.
4) Education of related specialties i.e. A&E, GPs, medical team regarding having a high index of suspicion in the younger child, the necessity of serial examination and safety netting (e.g. if not improving, return for review).

Figure 1

References:

Corresponding author: Dr O. Olafimihan
Email: Olusola.olafimihan@hey.nhs.uk