Original Article

Role of Cecal Gurgling in Diagnosis of Acute Appendicitis

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Objective: The objective of the study was to assess the role of Cecal Gurgling (CG) as a clinical sign to diagnose acute appendicitis.

Material and Methods: study was conducted at the allied teaching hospitals of FMH College of Medicine and Dentistry Shadman Lahore, between June 2011 and May 2013. Two hundred patients were included in the study between 13 and 50 years of age, presenting with pain right iliac fossa, irrespective of gender. All the patients were grouped according to the Alvarado scoring system into two groups. Group I with score more than 7 and Group II score less than, which was further subdivided onto CG positive and CG negative.

Results: Mean age of the patients was 18.5 (13-50). Overall 104 (52%) patients were male and 96 (48%) female. In Group I, 78 (93.97%) were confirmed to have acute appendicitis on HP and 5 (6.02%) appendix were normal. In group II CG positive, 67 (95.7%) patients were confirmed to have acute appendicitis on HP.

Conclusion: We concluded from this study that CG is a good diagnostic sign in patients with borderline diagnosis and can be used in conjunction with ALVARADO score to increase its yield. However, large randomized trial is required to strengthen this important clinical sign.

Key words: LCecal Gurgling, acute appendicitis, alvarado score.

Introduction

BAcute Appendicitis is a very common disease. It can cause a great difficulty for patient and surgeon especially when the diagnosis is not clear.[1] It remains one of the most common diseases treated by the general surgeons. Appendectomy is the most commonly performed emergency surgery in industrialized countries. The incidence of acute appendicitis is much less in areas of Africa, Asia, and South America, probably due to difference in diet and life style[2]. The pathophysiology of acute appendicitis has long been thought to be the result of luminal obstruction by a fecolith, hyperplastic lymphoid tissue, parasitic infestation, or tumor, with subsequent localized venous ischemia resulting in mucosal disruption followed by invasive bacterial infection. Infection limited to the appendix itself results in localized inflammation and simple, or suppurative, appendicitis.[2] Progression to full thickness necrosis and gangrene of the appendiceal wall may result in complications of appendicitis e.g., free perforation, abscess formation if the process is contained by adjacent structures, or even fistula formation if the inflammatory process continues unabated.[3]

The diagnosis of appendicitis has long been thought to be clinical. The definitive description of the clinical findings of acute appendicitis was made by Fitz in 1886[4] and McBurney's report to the New York Surgical Society in 1899.[5] A classic clinical presentation of acute appendicitis starts with the onset of poorly localized abdominal pain that eventually localizes to the right lower quadrant; typically, the pain becomes increasingly severe and constant. It is usually associated with nausea, anorexia and occasional vomiting. The presence of hunger and fever usually rules out appendicitis. Recently the scoring system like ALVARADO[6,7] got popularity for the diagnosis of Acute appendicitis. The advent of newer radiographic modalities, the diagnosis of acute appendicitis has become increasingly controversial, and continues to evolve. CT scan[8] seems to be diagnostic modality, however this is not always available in our set up and high cost of scanning keep us away from routine use of this modality in our set up. Keeping in view these difficulties, we studied the role of Cecal Gugling (CG) as diagnosis tool in the emergency settings where the diagnosis was in doubt.

Materials and Methods

his prospective descriptive study was conducted at the allied teaching hospitals of FMH College of Medicine and Dentistry Shadman Lahore between June 2011 to May 2013. Over a period of 2 years 200 patients were included in the study. All the patients between 13 and 50 years of age, presenting with pain right iliac fossa, were included in the study irrespective of gender. Patients having co morbid

conditions or obvious cause of pain abdomen were excluded from the study. CBC, urine complete and USG abdomen were done of all patients, whereas ECG, chest x-ray, LFTs, RFTs, and serum electrolytes for patients more than 40 yrs of age for anesthesia fitness.

All the patients were analysed clinically and grouped according to the Alvarado scoring system into two groups. Group I with score more than 7 and Group II score less than 7. For All the patients with score more than 7 appendicectomy was done and specimen sent for histopathology as Gold Standard post operative Diagnostic tool.

The Group II patients were further subdivided into two categories, (a) with positive CG and (b) with negative CG. The patients with negative CG were discharged with follow up instructions and positive CG were operated and appendix were sent for histological confirmation. The data was recorded on preformed proforma and results anlysed using SPSS 17.

Results

Mean age of the patients was 18.5(13-50) and gender distribution of patients is shown in **table 1** There were 83 patients in Group I and 117 in Group II. Among 117 of Group II patients, 70 were CG positive hence operated. In Group I, 78(93.97%) were confirmed to have acute appendicitis on Histopathology (HP) and 5(6.02%) appendix were normal. In group II with positive CG, 67 (95.7%) confirmed to have acute appendicitis on HP, **table 2.** The other diagnoses that were other than appendicitis during surgery were Meckel's divericulem, mesenteric Lymphangitis and acute salpnigitis.

Table-1: Gender distribution of patients .

Gender	Male	Female	Total
Group - I	45 (54.21%)	38 (45.78%)	83
Group - II with CG	33 (47.14%)	37 (52.86%)	70
Group II without CG	26 (55.32%)	21 (44.68%)	47

Table-2: Histopathological distribution of patients.

Groups	HP Positive	HP Negative	Total
Group - I	78 (93.97%)	5 (6.02%)	83
Group - II with CG	67 (95.7%)	3 (4.3%)	70

Table-1: Gender distribution of patients .

Features	Score
Migration of pain	1
Anorexia	1
Nausea	1
Tenderness in right lower quadrant	2
Rebound pain	1
Elevated	1
Leucocytosis 2	2
Shift of white blood cell coutn to the left	1

Discussion

Acute appendicitis is a common surgical condition encountered in surgical emergencies and is often the first procedure to be done by surgical interns and residents. The diagnosis is purely clinical and can be diagnosed up to 97% when proper history and exam is done.[2] Unfortunately, atypical clinical presentations are not uncommon. Abdominal tenderness may be absent or minimal in early appendicitis. Very young and very elderly patients are notorious for atypical or delayed presentation. Diarrhea or urinary symptoms related to inflammation of adjacent structures may mimic other disease processes. Negative or equivocal studies do not rule out appendicitis. Because of the significant increases in morbidity and mortality associated with perforation, a certain rate of negative appendectomies is acceptable,[9] especially in those with atypical presentations.

Rates of negative appendectomies have been reported in the literature from as low as 5% to as high as 40%. We see in our study very low negative appendicectomies probably due to, a) late presentation by patients b) self medication and c) multiple surgical consultations.

Due to excellent (over 95%) accuracy rates associated with abdominopelvic computed tomography (CT), some have advocated routine use of CT for all patients with possible acute appendicitis, even questioning the utility of any clinical assessment.[10] A prospective randomized comparison of a scoring system using traditional clinical markers versus CT failed to show a statistically significant difference in accuracy rates.[10] We noted in our study that if combined with ALVARADO score the diagnostic accurary of CG was comparable to CT alone, although the role of CT cannot be challenged,

especially in atypical cases. Also the high cost of CT precludes it as routine investigation in our set up. So on the basis of our observations we can confidently say that CG combined with ALVARADO is a best modality to diagnose acute appendicitis.

Conclusion

We concluded from this study that CG is a good diagnostic sign in patients with borderline diagnosis and can be used in conjunction with ALVARADO score to increase its yield. However, large randomized trial is required to strengthen this important clinical sign.

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