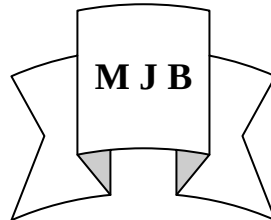


Significance of Bowels Sounds in Acute Abdomen

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الخلاصة

هذه دراسة عن مدى الاستفادة من الأصوات التي تصدر من حركة المعدة والأمعاء في تشخيص حالات البطن الحاد شملت الدراسة ١١٤ مريضاً من كلا الجنسين ولمختلف الأعمار وكان الاستنتاج من الدراسة بعدم الاعتماد فقط على حركة الأمعاء والأصوات التي تصدر عن تلك الحركة في تشخيص حالات البطن الحاد وإنما اعتبارها كعلامات مساندة للتشخيص مع العلامات الأخرى.

Introduction

Acute abdomen refers to a group of medical conditions in which accurate and early diagnosis must be executed. Following to diagnosis, proper surgical or medical treatment modalities must be applied. Auscultation comes from the Latin word *auscultare* (to listen). The word was introduced to modern medical literature by René-Théophile-Hyacinthe Laënnec in 1819. The syndrome of acute abdominal pain generates a large number of hospital visits and may affect the very young, the very old, either sex, and all socioeconomic groups. Bowel sounds are caused by the movement of free gas in the digestive tract. Therefore, it reflects the gastrointestinal motility as long as the amount of gas in the guts remains the same. Main production of bowel sounds belong to stomach where the jejunum seems to generate very few sounds of long duration. The colon distinguishes by the sounds of high amplitude, short and with a frequency around 100 Hz. Auscultation of the abdomen gives information about the presence or absence of bowel sounds. A quiet abdomen indicates ileus. Hyperactive bowel sounds may occur in gastroenteritis. Periods of quiet interrupted by the onset of high-pitched hyperactive bowel sounds

characterize the peristaltic rushes of mechanical small bowel obstruction. Evaluation of bowel sounds requires careful auscultation for several minutes. During auscultation of the abdomen, the examiner can effectively evaluate tenderness and guarding further by palpating gently with the stethoscope. By approaching the abdominal pain patient in a systematic fashion, the physician can improve his or her performance in evaluating the patient in a safe and efficient manner without extensive or redundant tests.[1]

Material and Methods

114 patients with acute abdomen were admitted to surgical department of Azady teaching hospital-kirkuk. The study was held between October 2005-March 2007. Traumatic surgical explorations, patients with medical conditions and laparotomies with no pathological findings were excluded. There were 55 males and 59 females ranging from 11 to 85 years old. The study included the presentation of the patients, physical examination findings, pre operative investigations, pre operative diagnosis, operative findings and operations. The aim of the study is evaluation of the significance of bowel

sounds in acute abdomen. The emphasis was based on the findings of auscultation and the bowel sounds changes.[2]

The terms used by clinicians to describe bowel sounds are either subjective (tinkling, high pitched) or crudely quantitative (present, absent, loud, frequent, increased, diminished). In this study, quantitative terms are used (absent, present). Present bowel sounds were categorized into three subgroups; sluggish, normal and exaggerated.

All auscultations were done by Littmann SE stethoscope. Addition to routine abdominal auscultation, it is mainly concentrated in the right iliac fossa region. Minimum 2 minutes were spent for each patient before labelling the patient as absent bowel sounds.

Results

The presenting symptom in all patients was abdominal pain. Abdominal

tenderness was predominant in all patients, accompanied by guarding in minor conditions with generalized or almost board like rigidity in patients with generalized peritonitis.

In 35 patients preoperative complete blood count showed leucocytosis (usually polymorphonuclear). Therefore there [3] is a need to replace the WBC count with more powerful predictors of inflammation within the peritoneal cavity. In suspicion of intestinal obstruction or perforated viscus, plain X ray of the abdomen in upright and supine positions were done which often showed distended loops of bowel with multiple air-fluid levels.[4]

Auscultation of the abdomen was normal in 55 patients (48.2%), bowel sounds were absent in 19 patients (16.6%), sluggish in 25 patients (21.5%) while it was exaggerated in only 15 patients (13.7%).

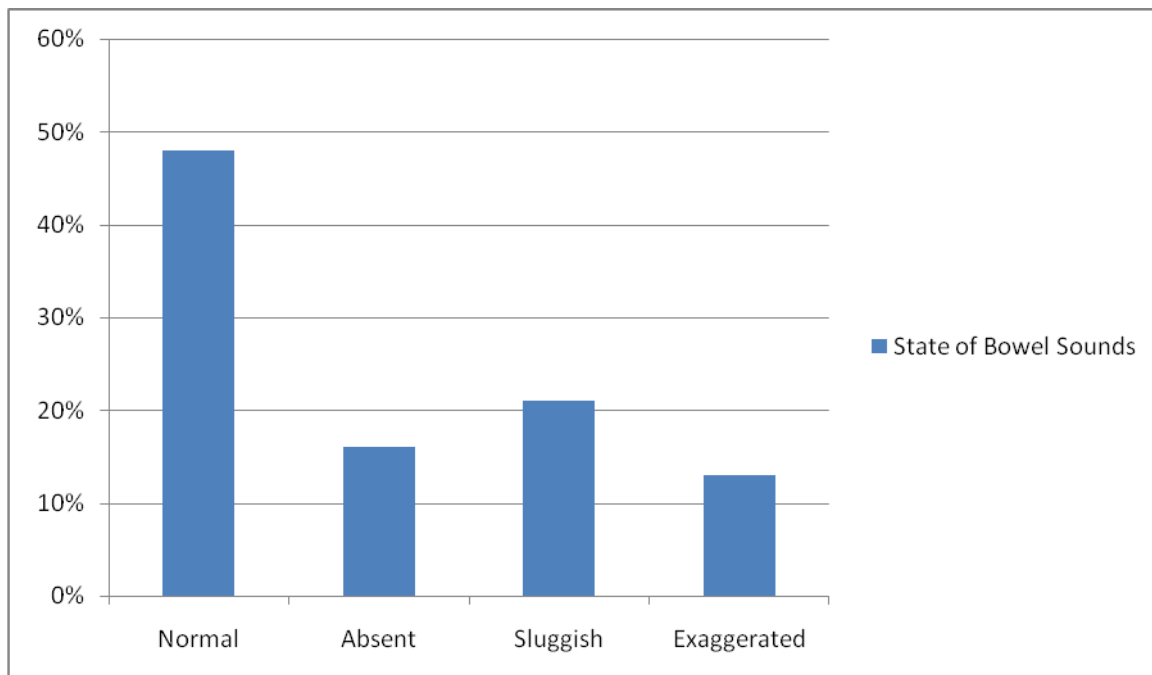


Figure 1 State of Bowel Sounds

In 83 patients (72.8%) acute appendicitis was at the top of the list of diagnosis. In these patients, 47 (56.6%) had normal bowel sounds, 8 (9.6%) had

exaggerated bowel sounds and 28 (33.8%) had absent or sluggish bowel sounds.[5, 6]

In 2 patients who had perforated duodenal ulcer had silent bowel sounds. Perforated appendicitis in 13 patients

(%11) were diagnosed pre or peroperatively. Only 5 of these patients had absent bowel sounds and the remaining had normal or sluggish bowel

sounds. Even in 1 patient the bowel sounds were exaggerated hence the presence of bowel sounds do not exclude a recent perforated viscus.[7]

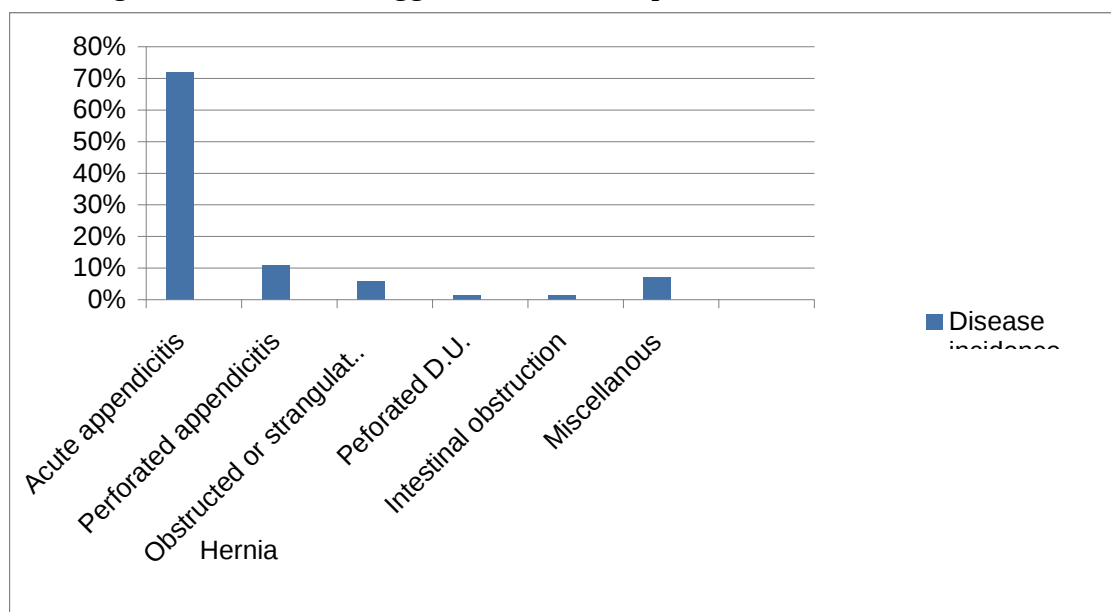


Figure 2 Disease incidence (Total patients: 114)

Table 1 State of bowel sounds in relation to diseases

Disease	Number of patients	Bowel Sounds			
		Normal	Absent	Sluggish	Exaggerated
Acute appendicitis	83	47	9	19	8
Perforated appendicitis	13	2	6	4	1
Perforated D.U.	2		2		
Obstructed hernia	7	3			4
Intestinal obstruction	2	1			1
Miscellaneous	7	2	2	2	1
Total	114	55	19	25	15

Discussion

Auscultation of the abdomen was found to be one of the greatest assistance in determining whether a gun shot wound caused injury to the bowels by Balckburn et al.[8] Silent bowel sounds are pathognomonic of peritonitis. In peritonitis, there is paralytic ileus therefore there is no bowel sounds in the abdomen. The initial response of the bowels to peritoneal irritation is short transient

hypermobility followed by a complete adynamic ileus. Bowel sounds may be normal or sluggish in the beginning of peritonitis but as the inflammation spreads silent bowel sound supervenes. In an unconscious trauma patient absent bowel sounds indicate an intraabdominal lesion. Early mesenteric arterial occlusion is associated with increased peristaltic activity and loud bowel sounds within the first few hours before the bowel becomes

ischemic. Afterwards, the bowel sounds disappear.

Conclusion

From this study it is concluded that auscultation of bowel sounds in patients with acute abdomen might be helpful on determining if the patient is going to need a surgical intervention or not. However, definitive decision must be put on clinical judgements.

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