

Original Article

# PATTERN OF ABDOMINAL PAIN AMONG PILGRIMS DURING HAJJ SEASON.

Sameer Bin Abdullah Softa

Department of Surgery, Faculty of Medicine, Umm Al-Qura University, Makkah  
Almokarramah, KSA.

**Correspondence:**

Sameer Bin Abdullah Softa, Surgery Department, Faculty of Medicine,  
Umm AlQura University, Al Abdyah, Makkah,  
P.O. Box.7607, Saudi Arabia.

Received: February 03, 2011

Accepted: April 06.2011

## دراسة مقطعية لنمط ألم البطن بين الحجاج في مواسم الحج.

د. سمير بن عبد الله صفتة

قسم الجراحة \* بكلية الطب - جامعة أم القرى - مكة المكرمة - المملكة العربية السعودية. ص. ب. : 7607

### الملخص العربي

**مقدمة :** إن الوعي والإلمام بهذا العرض للأجانب الأساسية والهامة لكل طبيب خاصة العاملين في طب الحشود كما أن التخطيط الصحي السليم قد يحتاج لمعرفة أنماط ألم البطن الجراحي .

**الأهداف :** مراجعة طراز ألم البطن الجراحي ورفع الوعي والإلمام بأنماطه لوضع سياسات.

**الطريقة :** تجمع أكثر من 2 - 3 مليون حاج في منطقة واحدة وفي وقت واحد يجعل تقديرات حدوثات الصدحية تحدي لهم ، هذه دراسة مقطعية لمنطقة المشاعر أثناء موسم الحج شملت (4) مستشفيات فيها فحص كل السجلات الطبية لكل مرضى ألم البطن مبنية على الاستبيان والدراسة المسبقة والذين تم تنويمهم بالمستشفيات المعنية.

**النتائج :** من واقع (250) بضعتمت دراساتهم خلال (4) أيام مستشفيات في المشاعر لموسم حج 427 - أظهرت النتائج أن أكثر الأعمار تعرض لألم البطن الجراحي الذاهم الفئة العمرية من (41) كثر وهو ذا (73.2 % ) وأقلهم من الفئة العمرية (12 - 21) يمثلون (4.8%) إصابات المماثلة في الظروف العادية نجد أن توزيع الفئات العمرية يختلف كما أن ألم البطن يخالف أيضا المعهود في الحالات العادية حيث التهاب الزائدة هو الأعلى بنسبة بينما الانسداد المعوي في دراستنا هو الأعلى كما أن الدراسة أوضحت أن معظم حالات ألم البطن تم علاجها جراحياً (95%).

**الخلاصة:** هذه الدراسة تساعد توجه وضع الخطط والسياسات الصحية للحجاج بصيغة خاصة ولطب الحشود عامة . كما تعتبر أساساً للدراسات.

## ABSTRACT

Hajj (pilgrimage) is the fifth pillar of Islam, approximately 2-3 million pilgrims gather in one place to perform this ritual of Islam every year.

Abdominal pain is a frequent presentation during Hajj seasons. Varieties of gastrointestinal, chest pelvic and systemic disorders acute life threatening condition as well serious medical and surgical conditions encountered causes of these presentations. The awareness of this entity by the clinician is vital to its recognition and crucial to deal with. Planning for health care requires knowledge of the pattern of diseases, complications, and outcome of pilgrims who require hospitalization during the Hajj period.

### **Objectives:**

To elucidate the pattern of acute abdominal pain among pilgrims requiring admissions to hospitals during the Hajj season and to raise the awareness of clinicians for such serious condition.

### **Methods:**

This was a cross-sectional study conducted in hospitals at Almashaer area, one in Arafat and the other one in Mina serving the pilgrims during Hajj season. The record of all abdominal pain cases, together with the diagnosis recorded by various doctors of these two hospitals during Hajj season of 1427H. over four days period.

### **Results:**

A total of 250 patients admitted over four days time in two hospitals at Almashaer of acute abdominal pain during Hajj season of 1427 H. The largest number of admissions occurred in the age groups above 41 (73.2%) and the lowest incidence was among patients in the age group (12-21), (4.8%) while those with age  $\geq 82$  were only 8 (3.8%). Cholecystitis as a cause of acute abdominal pain were 28 (11.2%) which match previous studies.

When compared to previous studies most common causes of abdominal pain in our study were intestinal obstruction 66 (26.6%), followed by acute appendicitis 52 (20.8%) where non specific abdominal pain is rated lower cause contrary to previous studies and reports which were predominant...

### **Conclusion:**

Findings in this study will be used to improve the health programme and planning to best suit the needs of the pilgrims.

**Key Words:** *Acute abdominal pain, surgical conditions, Hajj season, Pattern.*

## INTRODUCTION

**H**ajj (pilgrimage) is the fifth pillar of Islam , approximately 2-3 millions pilgrims gathered in one place from more than 140 countries to perform this ritual of Islam every year . This large scale mass gathering of Muslims all over the world of enormous ethnic diversity represents significant challenges for the entire health sector of host country.<sup>1,4</sup>

Abdominal pain is a common symptom that can be attributed to a wide variety of acute and chronic disease processes, many of which represent serious surgical problems. It is one of the most frequent presenting complaints to Emergency Departments.<sup>1,4</sup> The awareness of this entity by the clinician is vital to its recognition and subsequent medical management. Abdominal pain can result from a variety of gastrointestinal, chest, pelvic and systemic disorders.<sup>5,6</sup>

Surgical conditions among the many causes, one of the most common and serious , it represent one quarter of patients visiting health services . For surgical conditions to make a diagnosis and take decision to operate or not is crucial to safe life. It is vital that the physician has an understanding and be familiar with the presentations of common diseases that cause abdominal pain.<sup>7,8</sup> The awareness of this entity by the clinician is vital to its recognition and subsequent medical management and it is of sufficient importance to warrant policy statements by professional organizations.<sup>9</sup>

However, few studies were done to establish the pattern of hospital admission during hajj among them no studies were conducted on surgical acute abdominal pain during Hajj to describe the clinical profile pattern. Therefore a high index of suspicion should be born in mind by physician when patients presenting with acute abdominal pain in order to have early diagnosis, avoid complication and to reduce mortality and cost associated with complicated surgical conditions.

## OBJECTIVES

The aim of this study is to elucidate the pattern of acute abdominal pain among pilgrims necessitating admission to hospitals during the Hajj season, in order to help health policy makers to plan futuristic services and research.

## MATERIAL AND METHODS

This was a cross-sectional prospective study conducted in two hospitals in two different locations in Al-Mashaer for a period of four days. These hospitals are one of other 7 hospitals serving the pilgrims during Hajj. The record of 250 patients was presented with acute abdominal pain as their chief complaint were enrolled in this study. Acute abdominal pain was defined as the onset of any type of abdominal discomfort within the previous 7 days. History and physical examination findings were obtained prospectively and recorded by attending physicians using a standardized data collection questionnaire based pro forma with both open and closed ended questions form. All patients were ordered basic investigations including full blood chemistry and complete blood count, plain x-ray and US of abdomen and pelvis as was clinically appropriate. Children below twelve years were excluded.. Data

collected on paper forms was entered into MS Excel spreadsheet and analysed in SPSS version 12.

## RESULTS

A total of 250 patients were admitted to two of seven hospitals at Almashaer during Hajj season of 1427 during a four days period. The largest number of admissions occurred in the age groups above 41 (73.2%) 183 out of the total patients . The lowest incidence was among patients in the age group (12-21),(4.8%) while those with age  $82 >$  were only 8 (3.8%). This study also showed that most of the patients presented with abdominal pain were from Middle east 76(30.4%) and African 70(28%) Table 1.

**Demographic characteristics of all patients (Table 1)**

Characteristics	Numbers & ( %)
<u>Age group:</u>	
12-21	12 ( 4.8%)
22-31	29 (11.6%)
32-41	26 (10.4%)
42-51	69 (27.6%)
52-61	65 (26 %)
62-71	25 (10%)
72-81	16 ( 6.4%)
82- >	8 ( 3.2%)
Total	250 (100%)
<u>Geographical regions:</u>	
Arab countries	62 (24.8%)
Middle east	76 (30.4%)
South east Asian	28 (11.2%)
Africans	70 (28%)
Others	14 (5.6%)

More than quarter of the causes of presenting abdominal pain of the patients in this study were intestinal obstruction 66 (26.6%) more than half of them were Africans 38 (54.3%), which included complicated hernias and adhesions. Acute appendicitis 52 (20.8%) of the total patients, most of them were perforated. The other causes were cholecystitis 28(11.2%), perforated peptic ulcer 24(9.6%), pancreatitis 16 (6.4%), ischemic bowel 8 (3.2%). Non-surgical cause was seen in 56 patient (23.2%). 34 (14.4%) Of the them were labeled as non specific abdominal pain and 22 (8.8%) as renal cause. All non surgical patients were made by clinical resolution of the symptoms or diagnostic laboratory results Tables 2 & 3, In this study no acute abdominal gynaecological pain were reported.

**Table 2 . Main causes of abdominal pain.**

Causes (Diagnosis)	Numbers (%)
Intestinal obstruction	66 (26.4%)
Appendicitis	52 (20.8%)
Cholecystitis	28 (11.2%)
Perforated ulcer	24 (9.6)
Pancreatitis	16 (6.4)
Ischemic bowels	8 (3.2%)
Renal	22 (8.8%)
Non specific abdominal pain	34 (14.4%)
Total	250 (100%)

**Table 3 . Causes of abdominal pain in relation to the geographical regions.**

Causes Diagnosis	Intestinal Obstruction	Appendicitis	Cholecystitis	Perforated D.Ulcers	Pancreatitis	Ischemic bowels	Renal	Non-specific	Total No & %
<u>Regions &amp;(%)</u>									
Arab countries	9	17	9	6	4	1	8	8	62(24.8%)
Middle east	11	21	10	9	8	1	10	6	76(30.4%)
Southeast	5	8	3	2	1	2	1	7	28(11.2%)
Asian	38	6	6	7	3	0	1	9	70 (28%)
Africans	3	0	0	0	0	4	3	4	14 (5.6%)
Others									
<u>Total No:&amp; %</u>	66 (26.4%)	52 (20.8%)	28 (11.2%)	24 (9.6%)	16 (6.4%)	8 (3.2%)	22 (8.8%)	34 (14.4%)	250 (100%)

## DISCUSSION

Acute abdominal pains continue to be a challenge for practicing surgeons. Acute abdominal pain has been under diagnosed in the past but is now gradually gaining recognition. All previous studies were done on people of certain geographical area but in our study patients were included from all over the world more than 140 country with different racial back grounds that came to Makkah to perform Hajj.

This is the first study conducted in Almashaer Hospitals on the pattern of acute surgical abdominal pain. Previous studies were conducted on pattern of general admission and other medical problems. In our study 216 (86.4%) shown that abdominal pain was serious and genuine and need surgical intervention , in contrary to most of the previous study world-wide, which has shown the non specific abdominal pain with no clear explanation is the common cause.<sup>10,11</sup>

Also in this study more than quarter of the patients (26.4%) presented with abdominal pain were diagnosed as intestinal obstruction and more than half 54.3% of them were Africans. this is contrary to previous studies which reported the nonspecific and acute appendicitis is the commonest pattern of acute abdominal pain.<sup>5,11,12</sup> Similar findings of intestinal obstruction as a common cause of acute abdominal pain followed by appendicitis were shown in a study from Ethiopia<sup>13</sup> The present study has shown 8 patients (3.2%) with serious surgical vascular occlusion and all of them over 80 years of age, which consist with other studies. On the other hand elderly patients in this mass gathering with variety of background can have atypical presentations; This vascular events are more common in this population, and a wide differential diagnosis needs to be considered.<sup>12,14</sup> In our study non-specific abdominal pain reported in 34 (14.4%) patients where previous studies world-wide shown non-specific abdominal pain is the most common diagnosis in patients admitted to hospitals,(25–35% of all patients), and of those patients only a quarter needs surgical intervention.<sup>14,15,16</sup> Diagnosis of non-specific abdominal pain should only be made after thorough assessment, definite pathology excluded and the patient does not return with the same complaint. Our study documents the pattern of acute surgical abdominal pain in Hajj pilgrims admitted in Almashaer two care hospitals.

We are looking forward to conduct another study of larger duration and larger number of patients with acute abdominal pain on pilgrims coming to Makkah and then we will be able to suggest a diagnostic criterion and roadmap for acute surgical abdominal pain management.

## CONCLUSION

Intestinal obstruction, acute appendicitis and gastroduodenal perforations were the leading causes of acute admissions for abdominal pain in Mashaer hospitalsl during Hajj season. Non specific abdominal pain is less than other studies shown. In conclusion, our data showed a change in the pattern of acute abdominal pain surgery in Hajj season. Diagnoses that have become more frequent include intestinal obstruction, appendicitis, perforated viscus, while the non specific abdominal pain were rated less in our study contrary to previous studies. In our study non of gynaecological abdominal pain has been reported. The limitations of this study include lack of long-term follow-up, which precludes assessment of morbidity and mortality as well as the long-term outcome.

## ACKNOWLEDGEMENT

It is a pleasure to acknowledge my indebtedness to all the medical students of Umm-Alqura surgical clerkship, medical officers, residents and all health professionals at Almashaer Hospitals for their help and cooperation in carrying out this work.

## REFERENCES

1. Powers RD, Guertler AT. Abdominal pain in the ED: stability and change over 20 years. *Am J Emerg Med* 1995; 13: 301-3.
2. Alborzi A, Oskoe S, Pourabbas B, Alborzi S, Astaneh B, Gooya MM, et al. Meningococcal carrier rate before and after hajj pilgrimage: effect of single dose ciprofloxacin on carriage. *EMHJ*. 2008; 14 (2): 277-82.
3. Madani TA, Ghabrah TM, Albarrak AM, Alhazmi MA, Alazraqi TA, Althaqafi AO, et al. Causes of admission to intensive care units in the Hajj period of the Islamic year 1424 (2004). *Ann Saudi Med*. 2007; 27(2): 101-5.
4. Al-Maghdery Y, Al-Joudi A, Choudhry AJ, Al-Rabeah AM, Ibrahim M, Turkistani AM. Behavioral risk factors for diseases during Hajj 1422 H. *Saudi Epidemiology Bulletin*. 2002; 9 (3):19-20.
5. Hawthorn IE. Abdominal pain as a cause of acute admission to hospitals. *J. R. College of Surg. Edinb.* 1992; 37:389-393.
6. Scott C. Sherman, MD and Linda Lee, MD. Strangulated umbilical hernia. *The Journal of Emergency Medicine*. 2004; 26 (2): 209–211.
7. Laurell H, Hansson LE, Gunnarsson U: Diagnostic pitfalls and accuracy of diagnosis in acute abdominal pain. *Scand J Gastroenterol* 2006, 41(10):1126-31.
8. Flasar MH, Goldberg E: Acute abdominal pain. *Med Clin North Am* 2006, 90:481-503.
9. Nagurney J. T, Brown D F M, Chang Y, Sane S, Wang A C and Weiner J B. Use of diagnostic testing in the emergency department for patients presenting with non-traumatic abdominal pain. *The Journal of Emergency Medicine* 2003; 25 (4):363-371.
10. Groselj-Grenc M, Repse S, Dolenc-Strazar Z, Hojker S, Derganc M: Interleukin-6 and lipopolysaccharide-binding protein in acute appendicitis in children. *Scand J Clin Lab Invest* 2007, 67(2):197- 206.
11. Datubo-Brown DD, Adotey JM. Pattern of surgical acute abdomen in the University of Teaching Hospital. *W Afr. J Med* 1990; 9:59-62.
12. Almulhim A.A. Emergency general surgical admission prospective institutional experience in non-traumatic acute abdomen: Implication for education, training and service. *Saudi Med J*. 2006; 27: 1674-1679.

13. Tsegaye S, Osman M. Bekele A. Surgically Treated Acute Abdomen at Gondar University Hospital, Ethiopia. *East and Central African Journal of Surgery* 2007;12 (1) 53-57.
14. Martinez JP, Mattu A: Abdominal pain in the elderly. *Emerg Med Clin North Am* 2006, 24(2):371-88.
15. McCaig LF, Ly N. National Hospital Ambulatory Medical Care Survey: 2000 Emergency department summary. Hyattsville (Md): National Center for Health Statistics: Department of Health and Human Services & Centers for Disease Control and Prevention.
16. Madani TA, Ghabrah TM, Albarrak AM, Alhazmi MA, Alazraqi TA, Althaqafi AO, et al. Causes of admission to intensive care units in the Hajj period of the Islamic year 1424 (2004). *Ann Saudi Med.* 2007; 27(2):l'01-5.