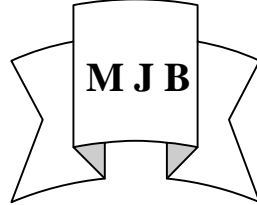


Acute Abdomen in Elderly Patients

Ali M. Al-Saiegh Raad S.AI-Safar Kabil S. Al-Jubori D.S
Dept. of Surgery, College of Medicine, Kufa University



Abstract

It has been estimated that 50% of persons who reach the sixth and seventh decades of life will require surgery before they die. At the time being more elderly people are undergoing surgery and are more likely to be admitted as emergency cases than young, this study was done to evaluate the real situation of this problem in our society & our surgical practice.

A prospective study was done on 109 patients (61 male and 48 female) above the age of 60 year, admitted to the emergency unit and surgical wards of Najaf hospitals, complaining from acute abdomen, for one year period Feb. 2004 to Feb. 2005, The study discuss different aspects such as: age, sex distribution, causes, percentage of operative to conservative management, hospital stay, complications and mortality rate.

The mean age was 67.4 years, the largest admission was for age group 60-70(68%), 81 patients (74.3%) were treated operatively, other 28 patients (25.7%) were treated conservatively. The most common causes of acute abdomen were intestinal obstruction (30%), liver and gall bladder diseases (24.7%), followed by urinary system disorders (19%), then peptic ulcer (8.25%), appendicular disorders (7.3%), gynecological diseases (3.6%), pancreatic disorders (3.6%) and other less frequent disorders represent (2.7%). The most common post operative complication was chest infection (38.3%), ileus (28.4%), wound infection (19.7%) and thrombophlebitis (16%), mortality rate was (5.5%).

From the present study we concluded that age alone is not a contraindication to surgery, and proper management of associated medical illness is mandatory as they may be more important causes of death than the surgical disease itself, mortality may be decreased by avoiding delay of admission and proper timing & decision of surgical intervention.

الخلاصة

لقد ثبت ان 50% من الاشخاص الذين تصل اعمارهم العقد السادس والسابع يحتاجون للعمليات الجراحية قبل وفاتهم في الوقت الحاضر هنالك اكثرية من المسنين الذين يخضعون للعمليات الجراحية وفي اغلب الاحيان يدخلون المستشفى كحالات طارئة اجريت هذه الدراسة لتقييم الوضع الحقيقي لمشكلة حالات البطن الحادة في مجتمعنا وفي عملنا الجراحي.

دراسة مستقبلية اجريت على 109 مريض (61 ذكر و(48) انثى تتجاوز اعمارهم 60 سنة ادخلو الى وحدة الطوارئ والردهات الجراحية في مستشفيات مدينة النجف يعانون من حالات البطن الحادة. مدة البحث سنة واحدة ابتداء من اذار 2004 الى نهاية شباط 2005

ناقشت الدراسة جوانب مختلفة فيما يخص المريض مثل العمر والجنس والاسباب ونسب اجراء العمليات الى المعالجة التحفظية وكذلك دراسة فترة الرقود والمضاعفات ونسبة الوفيات.

كان معدل اعمار المرضى 67.4 سنة، المجموعة العمرية ذات الدخول الاكثر كانت من 60 الى 70 سنة (68%)، 81 مريض (74.3%) عولجو بواسطة التداخل الجراحي واما ال 28 مريض الاخرين (25.7%) عولجو تحفظيا

كانت اهم الاسباب لحالات البطن الحادة كما يلي :-

- 1- انسداد الامعاء (30%)
- 2- امراض الكبد والمرارة (24.7%)
- 3- امراض الجهاز البولي (19%)
- 4- قرحة الاثنى عشري والمعدة (8.25%)
- 5- التهابات وامراض الزائدة الدودية (7.3%)

6- الامراض النسائية (3.6%)

7- امراض البنكرياس (3.6%)

8- امراض اقل حدوثا تشمل (2.7%)

كانت اهم المضاعفات لما بعد العملية كالاتي: التهابات الجهاز التنفسي (38.3%)، كسل او شلل الامعاء (28.4%)، التهاب الجروح (19.7%)، تجلط والتهاب الاوردية المحيطية (16%)، معدل الوفيات (5.5%).

من هذه الدراسة نستنتج ان مسالة العمر لوحدها لا تشكل سبب لعدم اجراء العمليات للمرضى المسنين كذلك تركز على المعالجة الدقيقة للأمراض المشتركة لانها تعتبر السبب الاهم للوفيات اكثر مما تسببه الامراض الجراحية بذاتها. يمكن الاقلال من معدل الوفيات وذلك بتجنب تاخير ادخال المرضى للمستشفيات وكذلك بدقة قرار وتوقيت التداخل الجراحي

Introduction

It has been estimated that 50% of persons who reach the sixth and seventh decades of life will require surgery before they die [1]. At the time being more elderly people are undergoing surgery and are more likely to be admitted as emergency cases than young [2,3]

Elderly patients do poorly when emergency surgical procedures are required than young [4] and there is a direct relation between age and mortality in perforated duodenal ulcer, appendicitis, pancreatitis and cholecystitis[5-7], nevertheless still old age is not a contraindication for surgery [1]

The diagnosis of acute abdomen in the aged often present a considerable difficulty at a time when accurate historical data are crucial, the physician is hindered by the patient fading memory, elderly do not develop muscle guarding, febrile response and leucocytosis to the same degree as the young and this complicates the evaluation [8-10], Anatomical factors may be different, omentum is reduced in size, the blood supply is poor, the wall become thin predisposing to perforation and gangrene which causes increasing complications[11,12]. On the other hand multiple abdominal diseases often exist and leads to diagnostic confusion (13) including the following examples; gall stones frequently are present and increase in incidence with age [6], volvulus is not uncommon [14], cancers increase with age[5]. The common use of NSAID drugs may impair the body's ability to respond

and may even predispose to some acute abdominal diseases [9,16].

Elderly people have higher incidence of coronary and peripheral vascular diseases, pulmonary diseases, C.N. S problems and diabetes mellitus, all of which complicate the picture and influence the mortality [15,3,16,13].

So acute abdomen hold many surprises and daunts task for surgeons in reaching the decision to operate or not.

Patients and Methods

A prospective study on 109 patients with acute abdomen above age of (60) years admitted to the emergency unit and surgical wards in Najaf hospitals complaining from acute abdominal pain excluding trauma. Study was done through 12 months period, between first of March 2004 and end of Feb. 2005.

A standard record was done on the mode of presentation, onset of pain, primary diagnosis, presence of associated medical illnesses and drug history. Different laboratory and radiological investigations were done.

Additional data includes type of management (conservative or operative), operative finding and type of surgical procedures, early post-operative complications and mortality rate, stay in hospital and final diagnosis.

Results

There were 109 elderly patients with acute abdomen, they represent (1.7%) of patient with acute abdomen in all ages admitted to the emergency units and surgical wards of Al-Najaf hospitals,

while acute abdomen cases for all ages represent about (11 %) of all admitted patients to the emergency units As shown in table (1) .

From these 109 patients, 61(56%)patients were males & 48 (44%) were females, the mean age was (67.4) years, ranging between (60-95) years, the peak age group affected was (60-69) year comprising (68%) of cases . The age & sex distribution is shown in table (2)

Only 26 patients (23.8%) attended to hospital in the 1st day of their complaints, while more than one third of our patients (34.8%) presented at 7th day and more (table3).

The mean duration of hospital stay was (4.2)days with a range of 1-30 days as in table(4)

81 patients underwent surgical operation (74.3%), 46 patients (42.2%) of them were males the rest 35patients (32%) were females table(5).

The final clinical diagnosis is shown in table (6).The most common cause of acute abdomen in our elderly patients was intestinal obstruction, seen in 33 patients (30.3%) , followed by liver and gall bladder diseases, seen in 27patients (24.8%) then urinary system disorders in 21 patients (19.3%), peptic ulcers in 9 patients (8.3%), appendicular disorders in 8 patients (7.3%), pancreatic disorders in 4 patients (3.6%), Gynecological disorders seen in 4 patients (3.6%), and lastly intraperitoneal abscesses and retroperitoneal tumors and abscesses.

The causes of intestinal obstruction are shown in table (6), hernia was the commonest cause seen in 19 patients (17.4%) followed by tumour of the large bowel in 5 patients (4.6%) , bands and adhesions in 4 patients (3.6%), other less common causes include peritonitis due to perforated viscus, abscess and retroperitoneal tumors and collections.

The most common type of hernia were inguinal seen in 8 patients (42%) , followed by para-umbilical & incisional hernias in 5 patients (26%) for each and

only one case of epigastric hernia, most of them were obstructed & few were strangulated .

Liver and gall bladder disorders seen in 27 patients (24.7%), 18 patients (16.5%) were females & 9 patients (8%) were males. Acute cholecystitis was seen in 15 patients(13.7%), some of them were treated conservatively, the other treated operatively, 4 cases (3.6%) were empyema of gall bladder and one case to each of the following : perforated gallbladder, cholangitis, cholangiocarcinoma and choledochal cyst, There are 3 cases (2.7%) of liver hydatid cysts and one case of liver secondaries .

21 patients (19%), 20 males & one female were complaining from urinary system disorders, most of them were urine retention because of B.P.H.(15patients), U.T.I seen in three patients, vesical stone in 2 patients and one case with uretric colic.

peptic ulcer seen in 9 cases, five of them were perforated and 4 were not complicated cases , one case of perforated peptic ulcer were seen in a female patient.

Acute appendicitis was seen in 8 patients (7.33%) , 2 of them were perforated , one patient had appendicular mass and 2 patients having appendicular abscess .

3 cases of carcinoma of pancreas with obstructive Jaundice and one case of acute pancreatitis discovered peroperatively in a female patient.

Twisted ovarian cyst seen in 3out of 4 cases with gynecological disorders, The remaining one case was twisted ovarian tumour .

Other various causes were retroperitoneal tumor, abscess and intra-peritoneal abscess in 3 patients (2.7%)only

The coexistence of medical problems were shown in table (7), Hypertension was the most common associated illness (24.7%), followed by diabetes mellitus (13.7%), ischemic heart diseases, C.V.A, asthma, uremia, T. B of the lung and chronic bronchitis

Table (8) show the previous surgical operations in our elderly patients, including gynecological, Genitourinary, Gastrointestinal, biliary system , hernias and lastly ophthalmic surgery .

Regarding the post operative complications; chest infections were the commonest, seen in 31 patients (38%), followed by ileus, wound infection and others shown in table 9

Six patients died out of 109 patients, 4 females & 2 males, 4 patients died with conservative treatment before doing surgery, the other 2 died after operative treatment as shown in table (10). Septicemia was the cause of death for 4 patients, three were females & one was male, the other 2 patients died because of multiple organ failure due to long standing shock state.

Table 1 incidence of old patients with acute Abdomen among the total No. of acute abdomen and total admission

patients	male	Female	total	Acute abdomen	Acute abdomen in elderly patients
number	31495	25489	56934	6312	109
%	55,3%	44,77%	100%	11,08%	1.7 % out of all acute abd.

Table 2 distribution of patients according to their ages and sex

Age groups (years)		60-70	71-80	81-90	91-100	Total
Male	No.	39	19	1	2	61
	%	35.77	17.43	0.9	1.83	55.96
Female	No.	35	11	2	0	48
	%	32.1	10.09	1.83	0	44
Total	No.	74	30	3	2	109
	%	67.88	27.5	2.75	1.83	100

Table 3 distribution of patients according to time of attendance to the hospital

Time of admission	No. of Patients	Percentage
1 st day of complaint	26	23.8
2 nd day of complaint	15	13.76
3 rd -6 th day of complaint	30	27.5
1 week & more	38	34.8
Total	109	100

Table 4 distribution of patients according to their hospitalization

Stay in hospital	No. of p.t.s	%
1 day	8	7.33
2 days	32	29.35
3 days	15	13.76
4 days	20	18.34
1 week	22	20.18
> 1 week	12	11
Total	109	100

Table 5 distribution of patients according to type of treatment

Sex	Operative treatment		Conservative treatment		Total	
	No.	%	No.	%	No.	%
Male	46	42.2	15	13.76	61	55.96
Female	35	32.1	13	11.92	48	44.03
Total	81	74.3	28	25.68	109	100

Table 6 distribution of patient according to the cause of acute abdomen.

diagnosis		male	female	total	percentage	
Intestinal obstruction	Obstructed hernias	10	9	19	17.43%	33 pat. 30.27 %
	Carcinoma of colon	3	2	5	4.58	
	Adhesions	2	2	4	3.66	
	Peritonitis	1	1	2	1.83	
	Sigmoid colon vulvulus	1	1	1	0.91	
	Mesenteric vascular occlusion		1	1	0.91	
	Pyloric tumor		1	1	0.91	
Liver & gallbladder Disease	Acute cholecystitis	4	11	15	13.76	27 pat. 24.77 %
	Empyema of gallbladder	2	2	4	3.66	
	Liver hydatid cyst		3	3	2.75	
	Perforated gallbladder	1		1	0.91	
	Cholangitis		1	1	0.91	
	Choledocal cyst		1	1	0.91	
	Cholangio carcinoma	1		1	0.91	
	Liver secondaries	1		1	0.91	
Urinary diseases	Urine retension (B.P.H)	15		15	13.76	21 pat. 19.26 %
	Urinary tract infections	3		3	2.75	
	Vesical stone	2		2	1.83	
	Renal colic		1	1	0.91	
Peptic ulcers	Perforated D.U	4	1	5	4.58	9 pat.
	Acute D.U pain	2	2	4	3.66	8.26 %
Appendicular diseases	Acute appendicitis	4	1	5	4.58	8 pat.
	Appendicular abscess	1		1	0.91	7.3 %
	Appendicular mass	1	1	2	1.83	
Pancreatic disorders	Pancreatic tumor	1	2	3	2.75	4 pat.
	Acute pancreatitis		1	1	0.91	3.66 %
Gynecologic-al diseases	Twisted ovarian cyst		3	3	2.75	4 pat.
	Ovarian tumor		1	1	0.91	3.66 %
Others	Intraperitoneal abscess		1	1	0.91	3 pat.
	Retroperitoneal abscess	1		1	0.91	2.75 %
	Retroperitoneal tumor	1		1	0.91	
Total		61	48	109	100 %	

Table 7 coexistence of medical diseases in our elderly patients

Coexistences medical illness	Number of patients	Percentage from total number of patients
Hypertension	27	24.77%
Diabetes mellitus	15	13.76%
Ischemic heart disease	11	10.1%
Asthema	2	1.8%
Cerebro-vascular accident	2	1.8%
Uremia	2	1.8%
Chronic bronchitis	1	0.9%
TB of the lung	1	0.9%

Table (8) number of patients with previous surgical intervention

Type of surgical intervention	No . of the patients	Percentage from total number of patients
Gynecological	7	6.4 %
Genitourinary	7	6.4 %
Gastrointestinal	6	5.5 %
Biliary	5	4.58 %
Hernia	5	4.58 %
Ophthalmological	2	1.8 %

Table 9 post operative complications in elderly patients with acute abdomen

Type of complication	No. of patients	% from operated patients
Chest infection	31	38.27
Paralytic ileus	23	28.39
Wound infection	16	19.75
Thrombophlebitis	13	16
UTI	10	12.34
Anemia (due to blood loss)	10	12.34
Cardiac problems	7	8.64
Jaundice	5	6.17
Wound disruption	4	4.93
Acute renal failure	4	4.93
Shock	2	2.46
Mesenteric thrombosis	1	1.23

Table (10) fate of patients according to the type of management

Fate		Improvement		Death	
Type of treatment		Conservative	Operative	conservative	Operative
male	No.	13	46	2	0
	%	11.92	42.2	1.83	0
Female	No.	11	33	2	2
	%	10.09	30.27	1.83	1.83
Total	No.	24	79	4	2
	%	22	72.47	3.66	1.83

Discussion

Male : female ratio in our study was 61/48 (M:F ratio of 1.27: 1) which differs from another study for youger age group by the same team(17) which was 391male/427 females (1:1.09), and in Siemmen -H study [18] which is 271 males / 278 fernalns (1:1.02).

81 patients(74%) of 109 patients underwent surgical operations and this was nearly double (30-40%)of david Bryan study[10] and the 43% yield from miettinen study[19], and also higher than (68.9%) which reported by Al-Saiegh in Al-Najaf study in 1999[17].

In the present study the most common clinical diagnosis was intestinal obstruction (30.3%) which is also supported by irvin (28%)[20] and in contrast to kettunen (15%)[22]and E.David Bryon (12%)[10] and others[15,13,19] who showing that cholecystitis is the commonest cause, which is attributed to the large number of female patients included in these studies, while females comprised (44%) only of cases in the present study.

The most common cause of intestinal obstruction was obstructed or strangulated hernias (17.43%) dominated by inguinal type (42%) which represent about (7.3%) of total number of our patients, which is also supported by Al-

Najaf study[17], E.David (30%) [10], Irvin [20] and Juan J .[21] but in a higher percentage .

The other types of hernia was paraumbilical hernia (26%) of hernias, a figure close to that reported by E.Daviu (30%) [10], most of them were female patients .

Incisional hernia also represent (26%) equal to that P.U.H but all of them were females, a rate higher than that reported by E.David (10%) [10] and this is due to high incidence of old fasion operative type of cesarean section.

(5.3%) of patients with hernias presented with obstructed epigastric hernia which is much higher than it's prevalance in E.David study[10].This finding correspondes with Juna & Paloma who state that emergency operations in elderly patients with abdominal wall hernia are increasingly more common as the patient get older [21] .

The second most common cause of intestinal obstruction was tumour (4.6%) all were presented with bowel obstruction mostly large bowel , this is supported by Blacke[13],and E.David [10].

Adhesion represent about (3.6%) of patients in our study as a cause of intestinal obstruction, (50%) of them was

critical with associated medical diseases and late presentation then die because of septicemia and shock before doing surgical intervention. That is to say the complications & death was due to difficulty in diagnosing simple obstruction from strangulation and delay in performance of surgery which is comparable to the series of Mark H.Beers [16], E.David [10] and Parker [5] .

2 cases (1.8%) of intestinal obstruction were due to peritonitis secondary to perforated viscus one of them died because of shock with more than one medical illness.

Other cause of intestinal obstruction in our study was one case only (0.9%) of sigmoid volvulus, but in Theodore [14] study was very high than this value (5-10%) and by E.David it is the much more common cause of intestinal obstruction[10] .

We have one case (0.9%) of mesenteric vascular occlusion, the same incidence seen by E.David (less than 1 % of cases of abd pain) [10], associated with high morbidity but no mortality , this is in contrast to other studies as E.David, and Kettunen (the mortality was more than 70%) [10,22] but the small number of cases is not statistically significant to conclude the incidence of mortality rate .

Liver and gall bladder diseases were the cause of acute abdomen in 27 patients(24.77%) coming in 2nd order , more than half of these cases related to acute cholecystitis which is about (13.76 %) of elderly patients with acute abdomen . but in E.David, and Kettunen studies it represent the 1st order of abdominal pain in elderly patients(> 24%) [10,22] .

(80%) of acute cholecystitis were females, just 4 cases (3.6%) treated conservatively all of them were females also.

This difference in contrast to the other studies may be due to difficulty of

diagnosis in this age group requiring a high index of suspicion.

Empyema of gall bladder seen in 4 patients (3.6%) cholecystectomized after stabilization of their general condition, all of them were presented with more than one week of onset of duration, some of them associated with D.M. One case of perforated gall bladder treated operatively and one case of cholangitis treated conservatively .

There are 3 cases of liver hydatid cysts, all of them were females all were presented with upper abdominal pain, one of them associated with obstructive jaundice, treated by open surgery, hydatid cyst disease still endemic in our country and should be suspected in every case of abdominal pain or masses .

Urinary system diseases were the 3rd common cause of acute abdomen seen in 21 patients(19.26%) , while in younger age group in Al.Najaf study it represent the 2nd order(17). Exclude One case with renal colic , (70%) presented with urine retention due to B.P.H, the others due to U.T.I. (30%) of retained urine treated conservatively by catheterization only, 3 cases only with cystostomy one of the cases died because of septicemia due to chronic U.T.I. associated with D.M., C.V.A (bed ridden) and hypertension, the others treated by transvesical prostatectomy.

Peptic ulcer comprises (8.29%) of our patients, it was the 4th common cause of acute abdomen in elderly, (55%) of these cases presented as complicated peptic ulcer (perforations), In E.david [10] the incidence is increased, this may be due in part to the increasing availability and use of NSAIDs, all the complicated cases treated operatively with simple closure, one case had posteriorly perforated D.U other one female patient was with perforated gastric ulcer .

There was no mortality in the present study related to the peptic ulcer which is attributed to the simple procedures

performed and early presentation of most cases, this is in contrast to Irvins [7] series that show 16% mortality where definitive procedures performed in some cases, David Bryon [10] explain the high mortality rate to difficult diagnosis and painless perforation .

Appendicitis was constituting (7.33%) of patients with no mortality, this is supported by David (10%) [10] , and Fenjo G (6.7%) [4] while it was higher in Kettunen-J study (20%) [22] , the rate of complication was high (62.5%) which is even higher than what is recorded by David (50%) the high rate of complication is due to difficulty in diagnosing appendicitis in these age groups due to factors already mentioned [10] .

One case of acute pancreatitis was seen with no history of alcoholism, was diagnosed peroperatively with no identified causes and then died post operatively due to multiple organ failur due to long standing shock stase , the incidence of pancreatitis was lower than that reported by Irvin (3.8%) [20] and Fenjo G.[4] which is attributed to low incidence of alcohol drinking, but still has high mortality rate as seen by S.T.Fan et al [23].

No cases of diverticulitis were recorded by our series, the condition that comprises (8.5%) of Irvins [20] study and David [10], this is attributed to the difference in the dietary habits.

We have 3 patients(2.75%) with twisted ovarian cysts, presented as acute abdomen and one case was twisted ovarian tumour, this is in contrast to Najaf study for young aged females which represent the 4th cause of acute abdomen(8.16%) [17].

In the present study the mortality rate was (5.5%) only, which is lower than other studies, (10%) was found by both Bryan (10) and Beers & Berkow [16] and with high figure by Kettunen (22%) [22] and the (25%) of Mc.Intyre R et al [24].

In our study (50%)of died patient was associated with more than one medical illnesses , two third of the death was with out surgical intervension, So there is a strong association between presence of more than one medical diseases and mortality, the finding that is shown by other series, reporting increasing death rate with increasing numbers of associated medical diseases[1,3,14,13,4, 20].

The commonest post operative complication was chest nfection (38%), which is higher than(13.1%) that reported by Blake R & Lynn J [13].

16 patients(19.7%) developed wound infections, a figure higher than (9.4%) of Al-Najaf study for acute abdomen in all ages [17],and also higher than(7.5%) in prospective study done by Lord – RV & Sloane –DR (25). Thrombophlebitis at sites of cannula represent (16%) of our patients, urinary tract infection was (12.4%) also high in comparisim to Blake R & Lynn J[13].

Cardiac complications were(8.6%), lower than(10.5%) mentioned by Blake R & Lynn J[13] due to higher incidence of cardiac diseases in the western countries .

Mean duration of hospital stay was (4.2) days which is much less than Mc.Intyre – R et al and Kettunen-J series who mention 21 & 12 days respectively [24,22], the long duration of hospital stay is due to large number of serous complications which need more stay.

Conclusion

From the present study we concluded that age alone is not acontraindication to surgery, and proper management of associated medical illness is mandatory as they may be more important causes of death than the surgical disease itself, mortality may be decreased by avoiding delay of admission and proper timing & decision of surgical intervension.

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