A STUDY OF ABDOMINAL SURGICAL EMERGENCIES IN GERIATRIC PATIENTS

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ABSTRACT

BACKGROUND

Emergency surgery is defined as non-elective surgery that is performed with the aim to prevent morbidity or fatal health consequences of a surgically treatable disease.^{1,2}

Aims and Objectives-

- To study and analyse the abdominal surgical emergencies in geriatric patients.
- To assess the types of abdominal surgical emergencies that occur in geriatric age group of 60 and above.
- To assess the type of surgical intervention done.
- To study the complications faced in this group undergoing surgical intervention.

MATERIALS AND METHODS

In this observational study, 113 patients were admitted from Dec. 2015 to May 2017 undergoing surgical intervention within 12 hours. Already diagnosed, conserved and post-operative cases referred to our hospitals were excluded.

RESULTS

82% of the patients were from age group 60 - 70 years, where 64 were male and 36 were female patients in the study. There is a significant association between sex and comorbidities ($p = 0.001$), where 19% of males and 12% of females have hypertension followed by 18% of males and 9% of females having diabetes mellitus, suggesting male patients having more chances of having comorbidities. The proportion of patients having hypertension and diabetes is significantly higher than other comorbidities, i.e. 31% cases suffered from hypertension followed by 27% cases suffering from diabetes mellitus. By applying Z-test of difference between two proportions, the proportion of comorbidities of hypertension and diabetes is significantly higher than other comorbidities ($p < 0.01$), i.e. 31% cases suffered from hypertension followed by 27% cases suffering from diabetes mellitus. The most common symptom in the study population was Pain (71%). Others were Vomiting (15%), Constipation (7%), Melena (2%) and Fever (5%). By applying Z-test of difference between two proportions, the proportion of symptom of pain and vomiting is significantly higher, i.e. 71% cases and 15% cases respectively ($p < 0.01$). Many (69%) of the cases had sign of tenderness followed by 19% of the patients having absent peristalsis. By applying Z-test of difference between two proportions, the proportion of tenderness is significantly higher ($p < 0.01$). X-ray abdomen erect was done in 52% of the cases. In majority (52%) cases, ultrasonography of abdomen and pelvis was done. Closure of perforation (26%) was the most common procedure done followed by Adhesiolysis (17%) and Resection and Anastomosis (10%). In rest of the patients, other procedures were performed. Open Appendectomy (18%), Liver Suturing, Open Cholecystectomy (10%) and Splenectomy (9%). By applying Z-test of difference between two proportions, the proportion of procedure closure of perforation is significantly higher ($p < 0.01$). In this study, maximum (28%) surgical emergencies were of intestinal perforation followed by intestinal obstruction (25%) and appendicitis (18%). Others were Spleen Injury (9%), Liver Injury (10%) and Cholelithiasis with Cholecystitis (10%). By applying Z-test of difference between two proportions, the proportion of intestinal perforation was significantly higher ($p < 0.001$) than other surgical emergencies. Sepsis was the most common (39%) complication followed by Suture Line Infection (24%), Respiratory Distress (14%) and Bleeding (3%). 20% of the patients had no complications. By applying Z-test of difference between two proportions, the proportion of post-operative complications of sepsis is significantly higher than other complications, ($p < 0.01$). 13 patients out of the total 100 in the study had expired. In the study population, 79% cases had deranged albumin, deranged renal function tests were found in 73% of the cases, 60% patients stayed in the hospital for more than 15 days, 76 patients had hyperglycaemia i.e. random blood sugar level more than 180 mg/dL, 76% patients were anaemic i.e. haemoglobin below 11 g/dL. There is a significant association between RFT and post-operative complications ($p = 0.042$), suggesting patients with deranged RFT had higher rates of post-operative complications. There is a significant association between albumin and post-operative complications ($p = 0.02$), suggesting patients with deranged serum albumin levels had higher rates of post-operative complications. There is a significant association between electrolyte imbalance and post-operative complications ($p = 0.043$). Complications were seen commonly in patients with Electrolyte imbalance. There is no any significant association between duration of stay and post-operative complications ($p = 0.125$), suggesting in our study population duration of stay did not have any effect on post-operative complications. There is no any significant association between haemoglobin levels and post-operative complications ($p = 0.197$), suggesting in our study population haemoglobin levels did not have any effect on post-operative complications. There is a significant association between RBS and post-operative complications ($p = 0.014$). The number of patients with post-operative complications were more with increased RBS (> 180 mg/dL).

CONCLUSION

This study has helped us in providing better clinical, diagnostic and management criteria to reduce mortality among geriatric age group which are usually neglected.

KEY WORDS

Abdominal Surgical Emergencies, Geriatric, Comorbidities, Haemoperitoneum, Intestinal Perforation, Intestinal Obstruction, Resection Anastomosis, Adhesiolysis.

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BACKGROUND

Emergency surgery is defined as non-elective surgery that is performed with an aim to prevent morbid or fatal health consequences of a surgically treatable disease.^{1,2}

Emergency surgical presentation is one such situation where surgeon is faced with therapeutic dilemma. On the one hand it is clear that most of these patients may have a limited life expectancy, while on the other hand surgical intervention appears to be unavoidable in these circumstances.

Emergency abdominal surgery patients who develop post-operative complications are more likely to be older, male, smokers, alcoholics with increased perioperative blood glucose, creatinine levels and lower serum albumin levels.³ They consume tremendous amount of medical resources requiring laboratory testing, imaging and the consultant services at significantly higher rate than younger patients.

The most common emergency abdominal surgical presentation is bowel obstruction, appendicitis, perforative peritonitis and bleeding, splenic injury, liver injury, obstructed hernia, cholecystitis and malignancy.

Aim

To study and analyse the abdominal surgical emergencies in geriatric patients.

Objectives

- To assess the types of abdominal surgical emergencies that occur in geriatric age group of 60 and above.
- To assess the type of surgical intervention done.
- To study the complications faced in this group undergoing surgical intervention.

MATERIALS AND METHODS

In this observational study, the source of data is all the patients having abdominal surgical emergencies admitted in our tertiary centre during the period of Dec. 2015 to May 2017. A total of 113 patients were admitted in our tertiary centre with abdominal surgical emergencies.

Inclusion Criteria

1. Age group of 60 and above involving both sexes undergoing surgical intervention within 12 hrs.
2. Cases will be included according to the definition illustrated in the Sabiston Textbook of Surgery, Bailey and Love.

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Exclusion Criteria

1. Already diagnosed and conserved cases, which may be referred to our hospital for further management.
2. Post-operative cases referred for further management.
3. Patients undergoing conservative management.

RESULTS

Age in Years	No. of Cases	Percentage (%)
60-70	82	82%
70-80	15	15%
>80	3	3%
Total	100	100%
Mean $\pm$ SD	67.25 years $\pm$ 9.94 years	

Table 1. Age Distribution

Maximum (82%) of the patients were from age group 60 - 70 years.

Male	Female	Total
No. (%)	No. (%)	No. (%)
64(64%)	36(36%)	100(100%)
Male: Female ratio= 1: 0.56		

Table 2. Sex Distribution

There were 64 male and 36 female patients in the study.

Comorbidities	Male	Female	Total
Hypertension	19	12	31
Diabetes mellitus	18	9	27
Ischaemic heart disease	3	3	6
TB	3	2	5
Nil	21	10	31
Total	64(64%)	36(36%)	100(100%)

Table 3. Sex and Comorbidities

Value of $\chi^2 = 23.546$, $p = 0.001$, significant.

There is a significant association between sex and comorbidities ($p = 0.001$), where 19% of males and 12% of females have hypertension followed by 18% of males and 9% of females having diabetes mellitus, suggesting male patients having more chances of having comorbidities.

Comorbidities	No. of Cases	Percentage (%)
Hypertension	31	31%
Diabetes mellitus	27	27%
Ischaemic Heart Disease	6	6%
TB	5	5%
Nil	31	31%
Total	100	100%

Table 4. Comorbidities

The proportion of patients having hypertension and diabetes is significantly higher than other comorbidities, i.e. 31% cases suffered from hypertension followed by 27% cases suffering from diabetes mellitus. Other comorbidities found were IHD (6%) and TB (5%). 31% of the patients did not have any comorbidities.

By applying Z-test of difference between two proportions, the proportion of comorbidities hypertension and diabetes is

significantly higher than other comorbidities ($p < 0.01$), i.e. 31% cases suffered from hypertension followed by 27% cases suffering from diabetes mellitus.

Symptoms	No. of Cases	Percentage (%)
Pain	71	71%
Vomiting	15	15%
Constipation	7	7%
Melena	2	2%
Fever	5	5%

Table 5. Symptoms

The most common symptom in the study population was Pain (71%), others were Vomiting (15%), Constipation (7%), Melena (2%) and Fever (5%).

By applying Z-test of difference between two proportions the proportion of symptom pain and vomiting is significantly higher, i.e. 71% cases and 15% cases respectively ($p < 0.01$).

Signs	No. of Cases	Percentage (%)
Tenderness	69	69%
Distension	17	17%
Guarding	12	12%
Rigidity	11	11%
Absent peristalsis	19	19%
Lump	5	5%

Table 6. Signs

Many (69%) of the cases had sign of tenderness followed by 17% cases having distension. Other signs were guarding (12%), rigidity (11%) and lump (5%). 19% of the patients had absent peristalsis.

By applying Z-test of difference between two proportions, the proportion of sign of tenderness is significantly higher, ($p < 0.01$). 69% cases had tenderness followed by 19% cases having absent peristalsis.

	No. of Cases	Percentage (%)
Yes	52	52%
No	48	48%
Total	100	100%

Table 7. X-Ray Abdomen Erect

X-ray abdomen erect was done in 52% of the cases.

	No. of Cases	Percentage (%)
Yes	52	52%
No	48	48%
Total	100	100%

Table 8. USG of Abdomen and Pelvis

In majority (52%) cases, ultrasonography of abdomen and pelvis was done.

Procedure	No. of Cases	Percentage (%)
Closure of perforation	26	26%
Open cholecystectomy	10	10%
Splenectomy	9	9%
Liver suturing	10	10%
Open appendicectomy	18	18%
Adhesiolysis	17	17%
Resection anastomosis	10	10%
Total	100	100%

Table 9. Procedure

Closure of perforation (26%) was the most common procedure done followed by Adhesiolysis (17%) and Resection Anastomosis (10%). In rest of the patients other procedures were performed like- Open Appendicectomy (18%), Liver Suturing, Open Cholecystectomy (10%) and Splenectomy (9%).

By applying Z-test of difference between two proportions, the proportion of procedure closure of perforation is significantly higher, i.e. 26% cases ($p < 0.01$).

Diagnosis	No. of Cases	Percentage (%)
Intestinal Obstruction (IO)	25	25%
Intestinal Perforation (IP)	28	28%
Appendicitis (A)	18	18%
Spleen Injury (SI)	9	9%
Liver Injury (LI)	10	10%
Cholelithiasis with Cholecystitis (CC)	10	10%
Total	100	100%

Table 10. Diagnosis

In this study, maximum (28%) surgical emergencies were of Intestinal Perforation followed by Intestinal Obstruction (25%) and Appendicitis (18%). Others were Spleen Injury (9%), Liver Injury (10%) and Cholelithiasis with Cholecystitis (10%).

By applying Z-test of difference between two proportions, the proportion of Intestinal Perforation was significantly higher ($p < 0.001$) than other surgical emergencies.

Post-Operative Complications	No. of Cases	Percentage (%)
Bleeding	3	3%
Sepsis	39	39%
Suture line infection	24	24%
Respiratory distress	14	14%
No complications	20	20%
Total	100	100%

Table 11. Postoperative Complications

Sepsis was the most common (39%) complication, followed by Suture Line Infection (24%), Respiratory Distress (14%) and Bleeding (3%). 20% of the patients had no any complications. By applying Z-test of difference between two proportions, the proportion of post-operative complications of sepsis (39%) is significantly higher than other complications ($p < 0.01$).

Outcome	No. of Cases	Percentage (%)
Expired	13	13%
Alive	87	87%

Table 12. Outcome

13 patients out of the total 100 in the study had expired.

Albumin	No. of Cases	Percentage (%)
Deranged	79	79%
Normal	21	21%

Table 13. Albumin

In the study population, 79% cases had deranged albumin.

RFT	No. of Cases	Percentage (%)
Deranged	73	73%
Normal	27	27%

Table 14. RFT

In our study, deranged renal function tests were found in 73% of the cases.

Hospital Stay	No. of Cases	Percentage (%)
More than 15 days	60	60%
Less than 15 days	40	40%

Table 15. Hospital Stay

In the study, 60% patients stayed in the hospital for more than 15 days.

RBS	No. of Cases	Percentage (%)
>180 mg/dL	76	76%
<180 mg/dL	24	24%

Table 16. RBS

In the study 76 patients had hyperglycaemia, i.e. random blood sugar level more than 180 mg/dL.

Haemoglobin Concentration	No. of Cases	Percentage (%)
< 11 g/dL	76	76%
> 11 g/dL	24	24%

Table 17. Haemoglobin Concentration

In our study 76% patients were anaemic, i.e. haemoglobin below 11 g/dL.

Post-Operative Complications	RFTs		
	Deranged	Normal	Total
Complications Present	62	18	80
No Complications	11	9	20
Total	73	27	100

Value of $\chi^2 = 4.11$, $p = 0.042$, Significant

Table 18. RFT and Post-Operative Complications

There is a significant association between RFT and post-operative complications ($p = 0.042$), Suggesting patients with deranged RFT had higher rates of post-operative complications.

Post-Operative Complications	Albumin		
	Deranged	Normal	Total
Complications Present	67	13	80
No Complications	12	8	20
Total	79	21	100

Value of $\chi^2 = 5.44$, $p = 0.02$, Significant

Table 19. Albumin and Post-Operative Complications

There is a significant association between Albumin and post-operative complications ($p = 0.02$), suggesting patients with deranged serum albumin levels had higher rates of post-operative complications.

Post-Operative Complications	Electrolytes		
	Deranged	Normal	Total
Complications Present	65	15	80
No Complications	12	8	20
Total	77	23	100

Value of $\chi^2 = 4.08$, $p = 0.043$, Significant

Table 20. Electrolytes and Post-Operative Complications

There is a significant association between Electrolyte imbalance and post-operative complications ($p = 0.043$). Complications were seen commonly in patients with Electrolyte imbalance.

Post-Operative Complications	Duration of Stay		
	>15 days	<15 days	Total
Complications Present	51	29	80
No Complications	9	11	20
Total	60	40	100

Value of $\chi^2 = 2.34$, $p = 0.125$, Not Significant

Table 21. Duration of Stay and Post-Operative Complications

There is no any significant association between duration of stay and post-operative complications ($p = 0.125$), suggesting in our study population duration of stay did not have any effect on post-operative complications.

Post-Operative Complications	Duration of Stay		
	<11 g/dL	<15 days	Total
Complications Present	63	17	80
No Complications	13	7	20
Total	76	24	100

Value of $\chi^2 = 1.66$, $p = 0.197$, Not Significant

Table 22. Haemoglobin Level and Post-Operative Complications

There is no any significant association between Haemoglobin levels and post-operative complications ($p = 0.197$), suggesting in our study population haemoglobin levels did not have any effect on post-operative complications.

Post-Operative Complications	RBS		
	>180	<180	Total
Complications Present	65	15	80
No Complications	11	9	20
Total	76	24	100

Value of $\chi^2 = 6.04$, $p = 0.014$, Significant

Table 23. RBS and Post-Operative Complications

There is a significant association between RBS and post-operative complications ($p = 0.014$), number of patients with post-operative complications were more with increased RBS (> 180 mg/dL).

DISCUSSION

In our observational study 113 patients were analysed, of which 13 patients did not follow-up. Therefore, among the 100 patients 64 were male and 36 were female patients. In Akinbami et al, 42% were male and 58% were female.

The patients in our study who underwent emergency abdominal surgery were Open Appendectomy (18%),

Resection Anastomosis (10%), Adhesiolysis (17%), Closure of Perforation (26%) and Open Cholecystectomy (10%).

Maximum cases were Intestinal Perforation (28%) followed by Intestinal Obstruction (25%), which occurred in the geriatric patients, $p < 0.001$, by applying Z-test of difference between the two proportions. Post-operative complications in our study were identified in 80% as compared to 29% patients, $p < 0.01$ by applying Z-test.

Most common post-operative complications in our study were sepsis (39%) followed by suture line infection (24%), where $p < 0.01$ by applying Z-test of difference between the two proportions. 30 days mortalities in our study were 13% compared to Akinbami et al 73 (8.9%).

Among the patients considered in our study, the maximum incidence of abdominal surgical emergencies among males as compared to females are being highest in the age group between 60 and 70 years. 82% of patients who underwent emergency surgery were majority between 60 and 70 years, males (54%) undergoing intervention more frequently than females (28%).

In our study, 31% had hypertension followed by DM type 2 (27%), where $p < 0.01$ by applying Z-test.

In our study, highest incidences of comorbidities are more common in the males (64%) than in females (36%) $p=0.001$. Chi-square value is 23.546.

In our study the most common symptom was pain (71%) followed by vomiting (15%), where $p < 0.01$ by applying Z-test.

In our study, the most common sign was tenderness (69%) followed by absent peristalsis (19%). In a study conducted by Sawyers JJ et al, tenderness was 88%.⁴ 52% of patients had done x-ray abdomen erect.

Patients who underwent emergency abdominal surgery, post-operative complications were more in males than in females. So morbidity seen in our study is more in males. The cause is still unknown.⁵

Hyperglycaemia is known to have deleterious effect on wound healing. In our study random blood sugar of more than 180 (76%) have post-operative complications with p -value= 0.014 and chi-square value is $\chi^2= 6.04$. So there is higher association between hyperglycaemia and post-operative complications, as it delays healing of wound. Normal level of random blood sugar level is less than 180 mg/dL, so good glycaemic control reduces the post-operative complications.

Increased blood urea when blood urea level more than 45 mg/dL and serum creatinine level more than 1.4 mg/dL is called increased serum creatinine level.

73% cases had deranged renal function test, out of which 62% of patients were prone to post-operative complications. P -value= 0.042 and Chi-square value is $\chi^2= 4.11$, significant.

So, there is higher association between RFT and post-operative complications. Increased blood urea level found in our study was possibly due to hypovolaemia, so patients may be benefited by adequate intravenous fluid resuscitation which reduces the post-operative complications.

In our study we had 79 patients with deranged albumin levels, out of which 67 patients developed post-operative complications. Therefore, in decreased serum albumin there is higher association with post-operative complications (p -value= 0.02), chi-square value is 5.44. In Golub's et al serum albumin level, less than 3 have higher post-operative

complications. By giving intravenous supplementation of albumin or oral supplementation of protein the patient will improve post-operatively.⁶

77 patients had deranged electrolytes, out of which 65 patients developed post-operative complications, so deranged electrolytes has a significant association with post-operative complications, $p= 0.043$, chi-square value is 4.08, significant.

Duration of procedure also increases the post-operative complications. Finally, composition of surgical team that is taking care of emergency abdominal surgery may be modified.¹ Recent support for acute care surgeons who address both trauma and emergent general surgery is an avenue that needs to be explored more rigorously. Such acute care surgeons may be able to potentially decrease the length of surgery and delay the surgery through their expertise.⁷

Duration of stay is also increased due to post-op complications. Although, in our study there were 60 patients who stayed for more than 15 days. Among these 60 patients, 51 patients had developed post-operative complications. There was no any significant association found between duration of stay and post-operative complication, $p= 0.125$, chi-square value= 2.34.

Anaemia is defined as haemoglobin percentage less than 11 gm/dL.¹ Lower the haemoglobin percentage has higher post-operative complication. Although, in our study 63 patients were anaemic who developed post-operative complications, but this association was not significant in our study, $p= 0.197$, chi-square test is $\chi^2= 1.66$, not significant.

Considerable progress has been made in surgical techniques, anaesthesia procedures and post-operative patient's care in terms of the results of surgical operation in the geriatric population. Surgery remains a major cause of morbidity and mortality in elderly people due to their depleted physiologic reserves.

In an effort to decrease mortality rates, precautions should be taken beforehand particularly to avoid complications observed in geriatric patients considering the high mortality rates observed in late stage complications. For instance elderly patients with common conditions such as acute cholecystitis incarcerated hernia can be offered elective surgery to avoid emergency intervention. Keeping systematic disease under control will render surgical operations safer. Britt et al developed an acute care surgery model to decrease time delays to surgery by using daytime operating rooms and the experience of the surgeons to improve medical decision making.⁸

Earley et al examined effects of this model on outcomes of patients undergoing appendectomies and found decreased time for surgery, complication rate and length of stay.⁷

Approximately, 10% of civilian injuries that require operation are the result of abdominal trauma.⁹ Unrecognised injury to intra-abdominal contents remains a distressingly frequent cause of preventable death.^{10,11,12} As many as one-third of patients with an initial benign abdominal examination will require emergency laparotomy.¹²

The appropriate management of abdominal trauma depends on a careful initial evaluation, the timely use of diagnostic procedures and vigorous therapy directed at the decision to perform laparotomy for abdominal trauma is far more complex, because structural injury is less obvious and

associated multisystem trauma may demand more urgent operation.

Diagnostic Aids

Rob's dictum¹³ (1947)- 'The absence of peristaltic sounds, confirmed and reconfirmed is a positive indication for laparotomy, but the presence of peristaltic sound is only a valuable guide towards and not a positive indication for conservative management.'

I. Haemoglobin Percentage (Hb%)

Haemoglobin percentage is one of the most important laboratory investigation available in evaluation of the patient with abdominal trauma.

In this study, routine Hb% estimation was done in all cases.

II. Blood Group

In order to give blood transfusion whenever necessary for resuscitation, blood grouping was done.

III. Urine Examination

Urine, routine and microscopic examination was carried out in all cases. This is important in the patients with urinary tract injury to rule out microscopic haematuria.

IV. Blood Sugar

Blood sugar was done in all patients to check for diabetes mellitus.

V. Blood Urea Nitrogen and Serum Creatinine

Serum urea and Serum creatinine was done in all patients to know renal function.

VI. X-Ray Abdomen in Erect Position

X-Ray Abdomen in Erect Position looked for-

- a. Free intraperitoneal air (intestinal perforation).
- b. Ground glass appearance.
- c. Multiple gas and fluid levels.
- d. Increased radiodensity in right or left hypochondrium.

VII. X-Ray Chest

X-ray chest in erect position looked for-

- Free intraperitoneal air (intestinal perforation).
- Injury to diaphragm.

Resuscitative Measures

1. Maintenance of Patent Airway: This was especially important in patients of hemoperitoneum with either head injury or chest injury. Maintenance of airway and thorough suction of oropharynx was done. An emergency tracheostomy was done in these patients when respiration was poor.

2. Restoration of Plasma Volume: This was done with Ringer's lactate solution, dextran and cross-matched blood. An indwelling catheter was introduced to monitor the urine output.

3. Oxygen Therapy: Patients in shock were put on venti mask with oxygen flow of 5 litres/min.

4. Position of Patient: A head low position was given for patients in shock to increase the venous return to the heart.

In severe chest injuries and head injuries, only legs up position was given to avoid respiratory embarrassment through congestion or cerebral oedema.

5. Keeping the Body Warm: We would like to stress that this was not often given enough attention. A simple woolen blanket was all that was necessary to minimise the deleterious effects of shock.

Conservative Management

It has been observed that some patients with intra-abdominal injury do not need laparotomy and can be treated conservatively. Conservative line of treatment was followed as under-

a. Nil by Mouth-

The patient is not allowed to take anything orally. This helps for two ways. Firstly, it prevents soiling of the peritoneal cavity in perforated viscous and secondly it also prevents the risk of aspiration due to regurgitation during induction of anaesthesia or recovery from anaesthesia.

b. IV Fluids-

This helps to supply the daily requirement of fluid electrolytes and calories in patients with nasogastric suction and nil by mouth patients. Fluids are administered according to the severity of the case.

c. Ryle's Tube Aspiration-

This is done to prevent soiling of the peritoneal cavity in perforated viscous by gastric juices. This is done continuously and 2 hourly, so that the stomach is kept empty. A deflated abdomen aids respiration by reducing respiratory embarrassment.

d. IV Antibiotics-

Prophylactic antibiotics were used in all surgical cases. Cefotaxime, Metronidazole and Piperacillin Tazobactam are the most commonly used antibiotics here. The need for antibiotics in patients with penetrating abdominal wound is clear, but the choice of antibiotics, the dosage and duration of administration remains controversial-

- a. Pulse rate and blood pressure monitoring every two hourly.
- b. Abdominal girth record two hourly.
- c. Input and output record.

During the conservative line of treatment reliance was on pulse rate, blood pressure, temperature and pain in abdomen. When there was deterioration of vital signs, patients were subjected for surgical intervention.

CONCLUSION

During this study, all the abdominal surgical emergencies were performed on geriatric group. All patients in this study had undergone surgical intervention. This study has helped us to provide better clinical diagnostic and management criteria to reduce the high mortality of this geriatric group.

The most common surgical emergency was Intestinal Perforation.

We would like to emphasise on detailed examination. X-ray abdomen erect and ultrasonography is a must to provide an early diagnosis. Though in rural areas, unaffordability and

ignorance for geriatric mass is a major drawback, and there is a reluctance to do investigations. Therefore, x-ray abdomen erect and ultrasonography is sufficient for the approach.

Factors like hypoalbuminaemia, anaemia, comorbidities like DM, HTN, deranged RFTs, electrolytes and hyperglycaemia are the nidus for bad prognosis for this age.

The only way to reduce mortality is to be prompt to diagnose, immediately intervene and overcome the nidus like hypoalbuminaemia, anaemia, respiratory distress and cardiac complications.

Thus, time and treating the elements is the essence for the neglected geriatric mass to survive in cases of abdominal surgical emergencies.

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