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RESEARCH ARTICLE

HOLLOW VISCUS PERFORATION: A RETROSPECTRUM STUDY

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ABSTRACT

Background

Benign causes of gastrointestinal perforation constitutes one of the most common and important surgical emergency.

Methods

A total of 65 cases of benign causes of gastrointestinal perforation were studied. Patients are selected randomly from admission at the place of study. All patients have been analyzed and results are compared with previous similar studies.

Result

Abdominal pain was seen in all the cases. 36.9% of patients had vomiting, 47.7% complained of distension of abdomen and 63.1% with fever. Tenderness was seen in all the cases with localized tenderness in majority of appendicular perforation. 80% of cases had guarding/rigidity with 47.7% patients presented with distension of abdomen. 71% of cases had gas under the diaphragm with majority of them in peptic ulcer perforation and least in appendicular perforation.

Conclusion

Mortality in our study was 3.1% and was due to septicemia with older age group, delayed presentation to hospital and other associated co-morbidities being the additive factors.

INTRODUCTION

Gastro intestinal perforation is a common abdominal emergency faced by general surgeon (1-2). It is a common dictum that abdomen is a Pandora's Box and gastrointestinal perforation is one such condition to prove it. Perforation of a hollow viscus from wide variety of causes comprises the major portion of emergency surgical admissions and emergency laparotomies (3-4). The diagnosis and treatment of gastro intestinal perforation remains main problem in our country (5-6). Improved medical and surgical care has reduced this problem in North America and the U.K., where vascular lesions and malignancies are predominant cause of perforations, while in our country, peptic disease, typhoid, tuberculosis are still preceding malignancies (7). The first clinical description of perforated peptic ulcer was made by Crisp in 1843. Smoking and use of non-steroidal anti-inflammatory drugs are important risk factors for perforation (8). Especially these days, the inadvertent use of NSAIDS and other over the counter analgesics forms one of the most common risk factors (9). Perforation of the stomach, duodenum and small bowel form a considerable proportion of emergency work load than colonic perforation (10-11). Perforation of the large intestine represent a major surgical challenge to the clinician, not simply because the technical aspects of the operation may be difficult but more importantly because the situation is rapidly lethal, in the type of compromising patients in whom the condition usually presents (12-13). In developed societies most common cause are, the diverticular disease and colonic carcinoma, where as in the developing countries infective conditions such as amoebiasis is important (14). Perforation of the large intestine is a rapidly fatal condition, death being caused by sepsis from peritoneal contamination with various enteric pathogens both aerobic and anaerobic. Majority of patients present with sudden onset of abdominal pain (15-17). A high index of suspicion is essential to diagnose visceral perforation early as significant morbidity and mortality results from diagnostic delay (18-19). Thus, an interest is undertaken to find the etiological factors and clinical features, age and sex incidence and also to assess the common type of perforations and their presentations, operative modalities, complications arising postoperatively.

MATERIALS AND METHODS

A total of 65 patients of gastrointestinal perforations (that were within the exclusion and inclusion criteria) were studied from

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May 2012 to September 2014. Clinical diagnosis of hollow viscus perforation is made based on history and physical examination which will be confirmed by investigations or by laparotomy formed the basis of selection of cases.

Routine blood examination including complete hemogram, blood grouping and typing, HIV, HBsAg, blood urea, serum creatinine, serum electrolytes, urine examination including albumin, sugar and deposits were done for the included subjects. Erect abdomen X-ray to detect free gas under diaphragm (lateral decubitus Xray in unstable patients), Widal test was done in suspected enteric perforations, 4 quadrant abdominal paracentesis was done only in selected cases (just for confirmation in cases where X- ray showed no gas under the diaphragm), Ultrasonography and CECT abdomen were also performed.

Antibiotics like Ceftriaxone or pipercillin with sulbactum and metronidazole 500mg (100 ml) TID were used in all cases. Antibiotics were changed according to culture and sensitivity report. Laparotomy was done under general anesthesia. Incision was taken depending upon the suspected site of pathology and when not confirmed midline incision either upper or lower or right Para median incision was made depending on the suspected site of perforation.

Viscera were inspected carefully, the site of perforation located and appropriate surgical procedure was performed. Peritoneal toilet with normal saline was done and peritoneal cavity was drained, postoperatively patients were put on continuous nasogastric aspiration, intravenous fluid and antibiotics. Vital signs were monitored, assessment of intake and output and biochemical parameters etc. were done. Recovery of the patients was observed and any complications which occurred during the course were noted. Regular follow up of the patients were carried out.

RESULTS

Age Group Incidence

Most of the patients belonged to 21-35yrs age group. The mean age was 29.2 years.

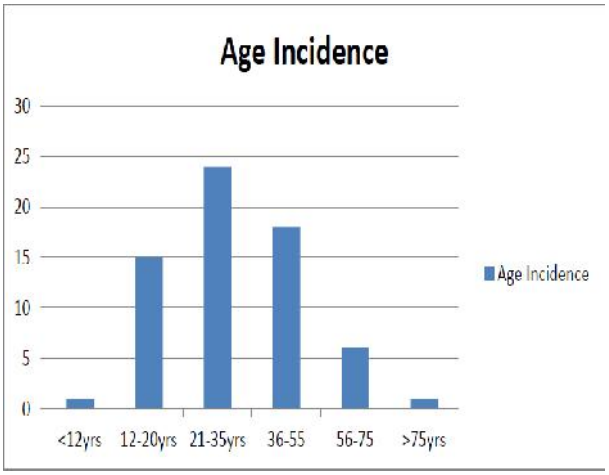

Figure 1 Incidence of Age

Sex Incidence

Males out-numbered females with a ratio of 1.7:1

Symptoms

All the cases in our study complained of pain abdomen. Only 24 of 65 cases had vomiting (36.9%). Distension was seen in 26 cases (40%) and Fever in 41 (63.1%) which was of moderate degree and not associated with chills and rigors

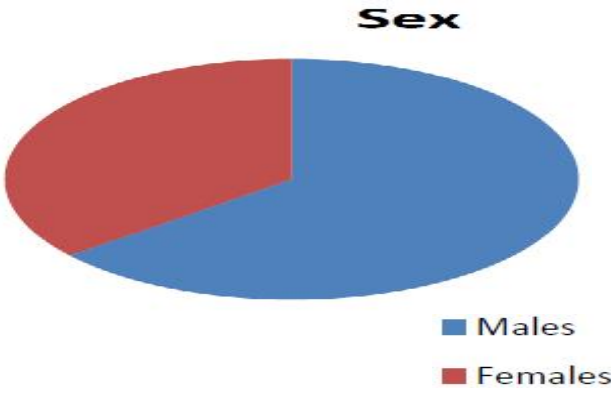

Figure 2 Sex Ratio

Table 1 Different types of Symptoms

Symptoms	Number Of Cases	Percentage
Pain Abdomen	65	100
Abdominal Distention	31	47.7
Vomiting	24	36.9
Fever	41	63.1

Signs

100% of the patients had obvious abdominal tenderness, guarding and rigidity was seen in 52 (80%) and distention in 47.7%. Only one patient with abdominal tuberculosis who had distention since 2 months had visible engorged viens.

Table 2 Different types of sign

Abdominal Signs	Number Of Patients	Percentage
Tenderness	65	100
Guarding/Rigidity	52	80
Distention	31	47.7
Absent Abdominal Sounds	46	70.8
Engorged Veins	01	1.54

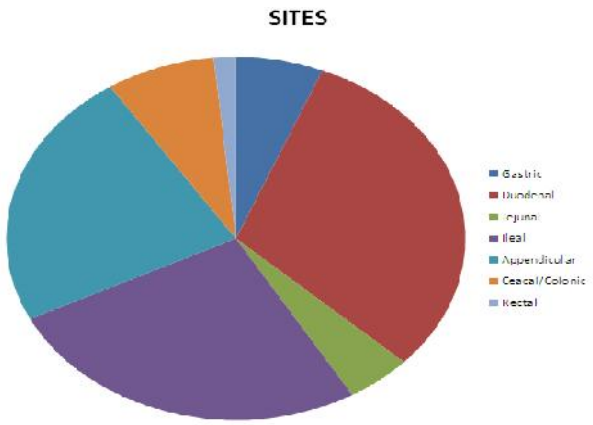

Figure 3 Various site of perforation

Sites of Perforation

The most common site of perforation was the gastroduodenal region, which accounted for 24 cases. This was followed by appendicular perforations and the least common region was the rectum, where we had only one case which was due to insertion of an object into the rectum.

Etiology of Perforation

The most common etiological factor in the presentation of disease was peptic disease, which accounted for 32.31% of the cases. This was followed by appendicular which accounted 24.6%. The least was an iatrogenic cause of gastric perforation due to an unskillfully done endoscopy., which accounted for only 1,54% of the cases.

Table 3 Etiology of Disease

Etiology	Number of Cases	Percentage
Peptic	21	32.31
Typhoid	07	10.8
Tubercular	10	15.4
Appendicular	16	24.6
Traumatic	04	4.6
Iatrogenic	01	1.54
Obstructed/Strangulated Hernia	02	3.1
Caustic Ingestion	02	3.1
Volvulus	02	3.1

Latent Period

Most of the patients presented to us more than 24hrs of onset of symptoms, predominantly being pain abdomen.

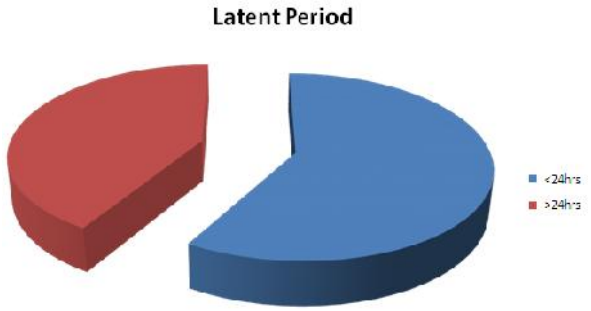

Figure 4 Latent period

Treatment

All the patients with appendicular perforations were treated with simple appendectomy. Majority of the patients had a simple closure with or without an omental patch.

Table 4 Types of treatment

Treatment	Number	Percentage
Appendectomy	16	24.6
Simple Closure	30	46.1
Resection Anastomosis	12	18.5
Hemi colectomy	05	7.7
Conservative Treatment	03	4.6

Post-operative Complications

Most common complication recorded in this study was SSI (16.9%) which was similar to that of respiratory infection/distress. Mortality in our study was 3.1% and was due to septicemia with older age group, delayed presentation to hospital and other associated co-morbidities being the additive factors.

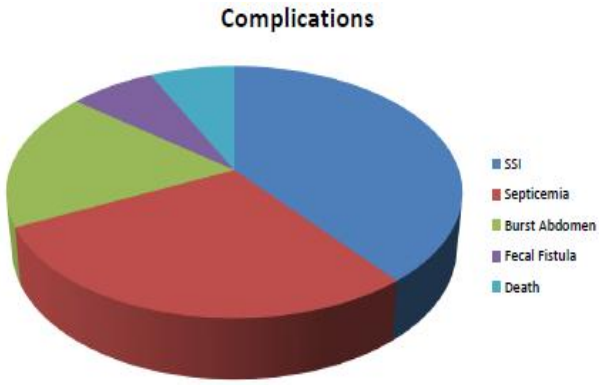

Figure 5 Types of post operative complication

DISCUSSION

Majority of the patients belonged to the age group of 25 to 35 years in most of the studies (20-21) except Afridi et al, (22) who reported majority of them being in the age group of 35 – 45 yrs. Mean age in this study was 29.2 yrs. which was comparable to that of Yadav et al, (20) who reported the mean age to be 33.9 yrs. Less mean age in our study was possibly due to the fact that many of the patients in this study were diagnosed of perforated appendicitis which is usually a disease of the young. 26.4% of the patients in this study had an appendicular perforation which was significantly less compare to other studies (20-22). Males were seen to predominate in incidence in all the studies (20-22). The highest male preponderance was noticed by Jhobta et al, where the ratio of male to female was 5.2:1, followed by Yadav et al (20) where the ratio was 4.9:1. Afridi et al (22) showed ratio of 2.1:1 which was nearing our study in which the ratio was 1.7:1. The most common symptom in all the study groups was pain abdomen in general. In our study all the patients (100%) had pain abdomen which was quite comparable to the other studies which reported the symptom to be the most common mode of presentation. Abdominal distention was quite predominant in the study by Yadav et al (20) who reported 73.6% of the subjects to have abdominal distention. Fever was the most common of all the symptoms (except pain abdomen) in our study. 41 of 65 patients (63.1%) gave a history of fever. The other studies quoted here showed a significant difference in the presentation of fever who reported quite less number of patients with fever as compared to this study. The graphic representation below will give a better idea of the symptom complex in the various studies taken here (20-22). The site of perforation was one of the most important parameters of all the studies. Doraijan et al (23) did a study in 1995, where he took 250 subjects for his study and he studied them according to sites of perforation, the etiology of perforation and the respective mortality. Similar was the case with Khan et al, (24) who studied these parameters in 54 patients in 2004. The most common site of perforation was seen to be at the gastro-duodenal region due to the fact that most patients had predisposing acid peptic disease. The highest incidence of acid peptic disease is thought to be unnecessary use of NSAIDS and

improper timing of meals in most patients. Also the incidence of H pylori infection is a major cause. In the recent times the discovery of PPIs and other antacids have reduced the incidence of perforations due to acid peptic disease. In this study we had 36.92% of patients having perforation at the gastro-duodenal region, which was comparable to the studies by Doraijan et al (23) (32%) and Khan et al (24) (38.8%). Perforations due to peptic ulcer disease were seen to be the most common cause of perforations consistently in all the studies except that of Doraijan et al (23), who showed that the majority of the perforations were due to tuberculosis (66.9%). This study showed 32.31% patients had perforations due to peptic disease which was the most common cause of perforation. This was similar with the studies by Jhobta et al, Afridi et al., and Yadav et al (20-22). Respiratory infection and distress was also commonly seen in the postoperative period which was the second most common form of post-operative morbidity in this study. Also this complication was consistently common which rest of the studies as well, account to 16.9% of the patients in this study, 28% in the study of Jhobta et al (21) and 20% in Afridi et al (22). Sepsis or septic shock was seen in 12.31% of the patients in this study. Jhobta et al (21) reported 17%, Afridi et al (22) 20% and Yadav et al (20) 5.2% of their patients having a septic shock in the post-operative period. This study had a mortality rate of 3.1% which was quite less as compared to the other studies. Jhobta et al (21) reported a mortality of 10% which was quite close with that of Afridi et al (10.6%) (22). Yadav et al had a mortality rate of 13% (20).

CONCLUSION

Mortality was more in patients with delayed presentation and older age group with associated co-morbidities, and can be prevented by adequate preoperative resuscitation, better surgical skills and good post-operative care. Surgical treatment is the most definitive treatment for perforative peritonitis patients and post-operative care remain extremely important in the better outcome of the patients.

Reference

1. Achkar E, Richard G. 1992. Farmer Bertram Fleshler. "Peptic ulcer disease in clinical gastroenterology 2nd edition, By Lea and Febiger, USA., 234-250.
2. Afridi SP, Malik F, Rahman SU, Shameen H, Samo KA. 2008. “Spectrum of Perforation Peritonitis in Pakistan: 300 cases eastern Experience” World J Emer Surg., 3: 31.
3. Arthur DJ, Thomas V, Berne, John DA. 1998. "Perforated duodenal ulcer - An alternative therapeutic plan". Arch Surg., 133: 1166- 1170.
4. Beniwal US. 2003. "Comparative study of operative procedures in typhoid perforations". Ind J Surg., 65(2): 172-176.
5. Ceneviva RC. 1986."Simple suture without proximal gastric vagotomy for perforated duodenal ulcer". Br J Surg., 73: 427-430.
6. Christiansen J. 1987. "Perforated duodenal ulcer managed by-simple closure versus closure and proximal vagotorny. Prospective study of 50 cases". Br J Surg., 74(4): 286-287.
7. Dorairajan LN, Gupta S, Suryanarayana Deo SV, Chumber S, Sharma LK. 1995. Peritonitis in India- A decade's experience. Trop Gastroenterol., 16: 33-38.
8. Inderbir S. 1991. "Alimentary system Gastrointestinal tract" in Human embryology, 5th edition, McMillan India press. 174-197.
9. Inderbir S. 1994. "Oesophagus, stomach and intestine". Textbook of human histology, 2nd edition, published by Jaypee Brothers Medical Publishers., 212-225.
10. Janikalpesh, Saxena AK. 2000."Management of large sized duodenal ulcer perforation by omental plugging". A new technique a prospective study of 100 patients". Ind J Surg., 62 (2): 134-138.
11. Jhobta RS, Attri AK, Kaushik R, Sharma R. 2006. “Apectrum of perforation peritonitis in India – review of 504 consecutive cases" World J Em Surg., 1: 1186-1749.
12. Kapoor VK. 1988. "Perforated duodenal ulcer simple is safe". Ind J Surg., 50: 424-27.
13. Khan S, Khan IU, Aslam S, Haque A. 2004. Reterospective analysis of abdominal surgeries at Nepalgunj Medical College, Nepalgunj, Nepal: 2 year's experience. Kathmandu University Medical Journal., 2: 336-343.
14. Mathur SN, Khandelwal R. 1991. "Peptic perforation A clinical study of prognostic factors", Ind J Surg., 53 (6): 251 -253.
15. Mourougayan V. Smile SR, Sibal RN. 1994. "Morbidity and mortality of definitive surgical procedures in duodenal ulcer perforation". Ind J Surg., 56(3): 102- 108.
16. Nair SK, Singhal VS, Kumar S. 1981. "Non traumatic intestinal perforation". Ind J Surg., 43 (5): 371-378.
17. Playforth MJ, McMahom MJ. 1978. "The indication of simple closure of perforated duodenal ulcer" Br J Surg., 65; 699-701.
18. Sadler TW. 1994. "Digestive system" in Langman's medical embryology, 7th edition, Williams and Wilkin Company., 242-271.
19. Sorsi GA, Richard H, Turnage. 2002. "Appendicitis in Gastrointestinal and liver disease. Pathophysiology and diagnosis / management 7th edition edit by Sleisenger and Fordtran's., 2: 2089-2096.
20. Sui WT. 2004. "Routine use of laparoscopic repair for perforated peptic ulcer". Br J Surg., 91: 481-484.
21. Thal ER. 1990. "Abdominal trauma". The surgical clinics of north america, W.B. Saunders Co., 70: 517-575.
22. Turner WW. 1988. "Perforated gastric ulcer a plea for management by simple closure". Arch Surg., 123: 960 - 964.
23. Wan LL. 1996. "A Randomize study of comparing Laproscopic versus open repair of a perforated peptic ulcer using suture or sutureless technique" Annals of the Royal College of Surgeons of England., 224 (2): 131-138.
24. Yadav D, Garg P. 2013. “Spectrum of perforation peritonitis in Delhi: 77 Cases Experiemce” Indian J Surg., 75(2):133-137.

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