

STUDY ON HOLLOW VISCUS PERFORATION

Dr. K.Anand and Dr.V.T.Arasu

Department of surgery, Chengalpet medical college, Chengalpet.

Article History: Received 2nd January,2015, Accepted February 25th 2015, Published 26th February,2015

ABSTRACT

OBJECTIVE: To find the age and sex incidence, etiological factors, adverse social factors and clinical features of different types of hollow viscus perforations and also to assess the site of perforation and the associated pathologies, and complications of all patients admitted in Chengalpattu government hospital for a period of 2 years. **METHOD:** 166 patients were taken up for study, they were prospectively and retrospectively analysed and followed up and filed up to give the study regarding hollow viscus perforation. **RESULTS:** Perforation of peptic ulcer was the most commonly encountered perforation (62 %). The most frequent cause of secondary peritonitis encountered in this study was peptic ulcer perforations, which was observed in 64% of cases. The highest incidence of secondary peritonitis (22 %) was observed in the age group 21 to 30 years and in males. Early presentation and timely surgical intervention were more successful. The omental patch procedure was very effective. **CONCLUSION:** Age of the patient, the duration of symptoms, gender per se, delay in surgical intervention, smoking stress, alcohol and degree of dyspepsia are independent predictors of mortality in patients with hollow viscus perforation.

Keywords: Sex incidence, Etiological factors, adverse social factors, hollow viscus perforations

1. INTRODUCTION

Hollow viscus perforation, defined by the presence of extraluminal air in a patient who presents with acute abdomen, constitute one of the commonest surgical emergency encountered by surgeons.^{1,2} Causes of hollow viscus perforation includes peptic ulcer disease, perforation of a gastrointestinal neoplasm [benign or malignant], acute appendicitis with perforation, acute colonic or small bowel diverticulitis, including Meckel's diverticulitis^{3,4,5}. Some rare causes includes iatrogenic perforations caused by endoscopes or catheters, spontaneous rupture of the distal esophagus (Boerhaave's syndrome), foreign body ingestion as well as ischemia.

In my study, am statistically analyzing the incidence of hollow viscus perforation at different sites of GIT (excluding appendicular perforation) and the various etiological factors, size of perforation and the other associated pathologies and causes in Chengalpattu government hospital in the period of oct 2010-12.

2. MATERIALS AND METHODS

Patients aged between 20 and 70 years were included- Clinically by obliteration of liver dullness, Radiologically by free air under the right dome of diaphragm in x-ray

appendicular perforation (diagnosed USG or intraoperatively), on chronic treatment with NSAIDS, antiplatelet drugs and the steroids were excluded.

Among the 166 patients taken up for study, they were prospectively and retrospectively analysed and follow up was done to give the study regarding hollow viscus perforation. First all the patients and the details of their age and occupation and the place from they hailed were documented. The patients were asked for the details of the previous admission to the hospital for peptic ulcer or intake of antiulcerogenic drugs from the counter directly. If so details of the ulcer, duration of pain, aggravating and related factors were enquired and take up for study.

The history regarding the loss of weight and loss of appetite were asked to work up for tumour cases.

The history of smoking and alcohol were asked and if so, the smoking index and pack years are calculated and the details with peptic ulcer were studied. If the patients suffered from blunt injury abdomen either from trauma or fall of heavy object over the abdomen, after asking the details of trauma from the patients [if gcs 12/15] or from the attenders, patient was taken up for laparotomy after the clinical and radiological pictures were suggestive of hollow viscus perforation. The findings in laparotomy were noted and the degree of injury and various factors regarding size of perforation, surrounding induration, sites in various parts of

*Corresponding author: **Dr. K.Anand**, Department of surgery, Chengalpet medical college, Chengalpet

gastrointestinal tract and associated pathology and the associated morbidities regarding mesenteric tear, hemoperitoneum were noted.

The other rare causes like meckels diverticulitis with perforation and sigmoid volvulus with perforation and the second part of duodenal perforation, and the other rare causes of perforation and the details were formulated.

Intraoperatively the site and the size of the perforated ulcers [small. Large and giant perforation] and the various associated pathologies regarding the intraoperative findings were elicited and worked up for the extent of disease and the assessment of morbidity and mortality. The blood parameters were analysed and the hemodynamic condition of the patients were improved before taken up for surgery.

3.DISCUSSION

166 patients were admitted in the period of oct 2010-12 with hollow viscus perforation. All the risk factors, etiological factors and their adverse social habits were taken retrospectively and the operative findings regarding the site, size, induration and the associated morbidity and mortality of the patients were taken up prospectively and from the registers and all the results are summed up to give the statistical analysis of perforation of various sites of gastrointestinal tract.

Among the 166 patients taken up for study with the evidence of perforation suspected clinically and confirmed intraoperatively, with evidence of hollow viscus perforation, 15 patients expired due to complications of perforation and delayed admission in hospital. 151 patients survived with interventional procedure, although with morbidity and post operative complications.

Of the 166 patients with features of perforation during the period of oct 2010-12, only 160 patients were taken up for study and the rest 6 come under exclusion criteria (appendicular perforation and drug induced viscus perforation) and so these patients are excluded from my study.

Of the total number of perforations taken up for study, males outnumber women in the ratio of 4.9 : 1. 27. Perforations are relatively more common in the age group of 20-30 years, as more number of young generations suffer from peptic ulcer either due to H.pylori and adverse social habits and accidental traumas^{6,7,8}.

Duodenal ulcer contributes to majority of the perforations and so the second part of duodenum is the most common site of perforation contributing about 62 % of total perforations. More commonly the perforations involve the proximal part of the gastrointestinal tract^{9,10,11,12} this being in contrast to studies from the western countries, where perforations are common in the distal part^{13,14,15}. Ileum which holds the second most common site to duodenum contributes around 12 % of the total perforations. The common causes attributed to be are the infections (typhoid and tuberculosis) and tumour causes (benign or malignant)

The jejunum attributed to be the third most common cause due to blunt trauma (exclusion: penetrating and stab) as it is intraperitoneal organ.

The study of etiological factors in my study, as expected goes in favour of acid peptic disease, which contributes about 60 % of total number of study people with perforations. According to a study from India, infections formed the most common cause of perforation peritonitis¹⁶, around 50% cases in this study were due to typhoid. In contrast to this, Noon et al.¹⁷ from Texas in their study reported only 2.7% cases due to infections. Also studies from the west have shown that around 15–20% cases are due to malignancy^{18,19}. In contrast, tuberculosis and typhoid fever as the cause of intestinal perforation contributes very little (< 10 %) in our study.

Among male patients with acid peptic disease, smokers (63.85%) have an increased risk of acid peptic disease and subsequent duodenal ulcer and perforation. The studies showed that majority of cases (51 %) were alcohol drinkers as compared to 49 % of non alcoholics. 86 % of the patients had small sized perforations that were easily treated by primary closure. Large sized perforations due to gastric carcinoma or tumour related perforations were treated by definite management. In patients with giant perforation of above 3 cms, either due to trauma or multiple perforations or stercoral perforations, the procedure resection anastomosis or primary closure of the bowel were done depending on the nature of abdominal exudates and condition of the patient.

In patient with stercoral perforation due to chronic constipation, with perforation of size about 5 cms, emergency colostomy was done due to the old age of the female and underlying fecal contamination.

Of the total number of patients taken up for study, 10 % of the perforation patients expired due to the disease process and its consequences. The overall mortality due to perforation peritonitis ranges between 6 and 27%²⁰.

4.CONCLUSION

In this study on hollow viscus perforation, we found that the incidence was more common in younger age group and in males than females. Perforation incidence was more among the patients of peptic ulcer especially duodenal ulcer. We conclude that the age of the patient, the duration of symptoms, gender per se, delay in surgical intervention, smoking stress, alcohol and degree of dyspepsia are independent predictors of mortality in patients with hollow viscus perforation. The mortality and morbidity can be best avoided by monitoring the patients perioperatively and high quality of care by anaesthesiologists for risk assessment of the cases and to give goal directed therapy.

5.REFERENCES

1. K. Ramakrishnan and R. C. Salinas, "Peptic ulcer disease," *The American Family Physician*, vol. 76, no. 7, pp. 1005–1013, 2007.
2. T. Ersumo and B. Kotisso, "Perforated peptic ulcer in Tikur Anbessa Hospital: a review of 74

- cases," *Ethiopian Medical Journal*, vol. 43, no. 1, pp. 9–13, 2005.
3. L. Sharma, S. Gupta, A. S. Soin, S. Sikora, and V. Kapoor, "Generalized peritonitis in India—the tropical spectrum," *Japanese Journal of Surgery*, vol. 21, no. 3, pp. 272–277, 1991.
 4. S. M. Bose, A. Kumar, A. Chaudhary, I. Dhara, N. M. Gupta, and S. K. Khanna, "Factors affecting mortality in small intestinal perforation," *Indian Journal of Gastroenterology*, vol. 5, no. 4, pp. 261–263, 1986.
 5. K. M. Nadkarni, S. D. Shetty, and R. S. Kagzi, "Small-bowel perforations. A study of 32 cases," *Archives of Surgery*, vol. 116, no. 1, pp. 53–57, 1981.
 6. C. Svanes, H. Salvesen, B. Espehaug, O. Soreide, and K. Svanes, "A multifactorial analysis of factors related to lethality after treatment of perforated gastroduodenal ulcer 1935–1985," *Annals of Surgery*, vol. 209, no. 4, pp. 418–423, 1989.
 7. R. M. Watkins, A. R. Dennison, and J. Collin, "What has happened to perforated peptic ulcer?" *British Journal of Surgery*, vol. 71, no. 10, pp. 774–776, 1984.
 8. A. Uccheddu, G. Floris, M. L. Altana, A. Pisanu, A. Cois, and S. L. F. Farci, "Surgery for perforated peptic ulcer in the elderly. Evaluation of factors influencing prognosis," *Hepato-Gastroenterology*, vol. 50, no. 54, pp. 1956–1958, 2003.
 9. N. Agarwal, S. Saha, A. Srivastava, S. Chumber, A. Dhar, and S. Garg, "Peritonitis: 10 years' experience in a single surgical unit," *Tropical Gastroenterology*, vol. 28, no. 3, pp. 117–120, 2007.
 10. M. A. Malangoni and T. Inui, "Peritonitis—the Western experience," *World Journal of Emergency Surgery*, vol. 1, no. 1, article 25, 2006.
 11. J. Bohnen, M. Boulanger, J. L. Meakins, and P. H. McLean, "Prognosis in generalized peritonitis. Relation to cause and risk factors," *Archives of Surgery*, vol. 118, no. 3, pp. 285–290, 1983.
 12. A. C. Dean, C. G. Clark, and A. H. Sinclair-Gieben, "The late prognosis of perforated duodenal ulcer," *Gut*, vol. 3, pp. 60–64, 1962.
 13. S. Gupta, R. Kaushik, R. Sharma, and A. Attri, "The management of large perforations of duodenal ulcers," *BMC Surgery*, vol. 5, article 15, 2005.
 14. N. Mandava, S. Kumar, W. F. Pizzi, and I. J. Aprile, "Perforated colorectal carcinomas," *The American Journal of Surgery*, vol. 172, no. 3, pp. 236–238, 1996.
 15. B. di Venere, M. Testini, S. Miniello et al., "Rectal perforations. Personal experience and literature review," *Minerva Chirurgica*, vol. 57, no. 3, pp. 357–362, 2002.
 16. A. K. Khanna and M. K. Misra, "Typhoid perforation of the gut," *Postgraduate Medical Journal*, vol. 60, no. 706, pp. 523–525, 1984.
 17. G. P. Noon, A. C. Beall, and G. L. Jorden, "Clinical evaluation of peritoneal irrigation with antibiotic solution," *Surgery*, vol. 67, pp. 73–78, 1967.
 18. S. Breitenstein, A. Kraus, D. Hahnloser, M. Decurtins, P. A. Clavien, and N. Demartines, "Emergency left colon resection for acute perforation. Primary anastomosis or Hartmann's procedure? A case-matched control study," *World Journal of Surgery*, vol. 31, no. 11, pp. 2117–2124, 2007.
 19. F. Roviello, S. Rossi, D. Marrelli et al., "Perforated gastric carcinoma: a report of 10 cases and review of the literature," *World Journal of Surgical Oncology*, vol. 4, article 19, 2006.
 20. M. Oheneh-Yeboah, "Postoperative complications after surgery for typhoid ileal perforation in adults in Kumasi," *West African Journal of Medicine*, vol. 26, no. 1, pp. 32–36, 2007.
