MANAGEMENT OF LATE OESOPHAGEAL PERFORATION AN EXPERIENCE OF 11 CASES IN TWO YEARS

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ABSTRACT

OBJECTIVE: To evaluate outcome of delayed oesophageal perforation in our setup.

DESIGN: An observational descriptive study.

PLACE AND DURATION: Department of Cardiothoracic Surgery, Postgraduate Medical Institute, Lady Reading Hospital Peshawar from January 2004 to December 2005.

SUBJECTS AND METHODS: Computerized clinical data of eleven patients who presented late with oesophageal perforation was retrospectively analyzed.

RESULTS: This is case series of eleven patients who presented late with oesophageal perforation. Male: Female ratio was 5:6. Age range was 02 to 60 years. Mean age was 26.3 years. Nine patients had history of foreign body ingestion, one had achalasia and one had penetrating trauma. Four patients underwent surgery and repair of which two underwent left thoracotomy, one right thoracotomy and in one patient cervical approach was used. Seven patients were managed conservatively. Overall mortality was 18.18% (2/11). Mean duration of stay was 26 days

CONCLUSION: Mortality of late oesophageal perforation can be cut down to acceptable rate with aggressive conservative management in Intensive Care Unit (ICU) and proper surgical repair.

Keywords: Oesophageal perforation, Conservative Management, Surgical options.

INTRODUCTION

Oesophageal perforation is one of the most devastating perforations in the gastrointestinal tract. Prognosis depends not only on underlying etiology but also on the timing of intervention and treatment modality used.[1] The first spontaneous perforation of the oesophagus was reported by Boerhaave in 1724.[2] Since then, there has been a steady increase in the number of reports of both spontaneous and tumour-related perforation of the oesophagus, and endoscopic intervention is now leading cause of iatrogenic oesophageal perforation.[3,4] Rare causes of oesophageal perforation include nasogastric intubation, endotracheal intubation, hyperextension of neck and blast injuries.[5,6,7]

Clinical manifestation of oesophageal perforation include pain, tachypnea, tachycardia, hypotension, dyspnea, pneumothorax, surgical emphysema, signs of infections, empyema depending upon the site of perforation.[8]

Diagnosis is based on clinical suspicious and contrast radiological studies.[9] The aim of this study was to analyze our results / outcome in patients with oesophageal perforation who present late in Cardiothoracic Unit in our setup.

MATERIALS & METHODS

This is retrospective analysis of eleven patients who presented late with oesophageal perforation in our unit from January 2004 to December 2005.

Computer records of patient who were managed conservatively or surgically treated were included in this study. All patients with oesophageal carcinoma were excluded. All patients in whom diagnosis of perforation was made before 24 hours were excluded from the study while those diagnosed/reffered after 24 hours were included. All patients were managed in thoracic ICU and contrast study was done.Gastrograffin study was done to localize the site of perforation and to ascess proximal and distal oesophagus as these fac-

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tors are prime for management strategy. All patients were kept NPO with supportive treatment, I/V broad spectrum antibiotics and nutritional support. Injection Sulbactam was used as emprical antibiotic in all patients Methods used for nutritional support included nasogastric feeding,feeding jejunostomy and partial parenteral nutrition. A check contrast study was done in all patients before discharge from hospital. Fluid electrolyte balance,temperature pulse monitoring and chest drain monitoring was done in ICU.

All patients were managed conservatively initially, those who did not heal by 2 weeks were then surgically managed. Conservative measures included broad spectrum intravenous antibiotics, ICU care, tube thoracostomy and nutritional support in form of partial parenteral nutrition or via feeding jejunostomy. Surgical approaches used were right and left posterolateral thoracotomy and left cervical approach. Margins of perforation was freshened and rent approximated with meteric3 Vicryl full thickness interrupted stitches and repair reinforced with pleural, pericardiopleural, intercostal muscle and stennocliedomastoid flaps accordingly depending upon site of perforation.In one patient pericardial flap was used to enforce repair via left thoracotomy and combine pleuropericardial flap via left thoracotomy was used in second patient.Third patient had right thoracotomy and intercostal muscle flap was used for reenforcement and fourth patient was explored via left cervical approach and sternocliedomasstoid flap was used. The choice of flap was dependant on site of perforation and size of rent. No diversion procedure was done in any case. Check contrast study was done on 7th postoperative day and then oral feed was started.

RESULTS

Out of eleven patients 6 were male and 5 were female. Age range was 2 years to 60 years with mean age of 26.3 years. All patients belonged to different districts of NWFP except one from Afghanistan. Seven patients were referred from ENT Department of the three teaching hospitals of Peshawar and one was referred from Gastroenterology Department, where as three were from our own unit. Nine patients had history of foreign body oesophagus and endoscopic intervention, one had endoscopy for achalasia cardia and one had penetrating wound of oesophagus with delayed presentation. Initially all 11 patients were managed conservatively. By two weeks one patient had died and three had healed. Of these four, three had left chest tube thoracostomy and one had right tube thoracostomy. All of them received partial parenteral nutrition for at least 10 days. One patient died on 11th day of admission due to septicemia and DIC. The other three responded to conservative treatment. By 2 weeks seven patients still had a residual leak and were booked for repair. These seven patients underwent different surgical repairs. Seven patients had repair of perforation with reinforcement procedure, pericardial flap, pleural flap, pleuropericardial and stennochiectomastoid flap each in one patient and intercostal muscle flap in two patients. One patient had in addition to intercostal flap right decortication for perforation related empyema. Out of these seven patients three had additional feeding jejunostomy and four were managed with partial parenteral nutrition. Mortality in this group was one out of seven (14.2%) when intercostal muscle flap repair failed an patient ultimately succumbed to septicemia. Total mortality of this study was 2 out of 11(18.18%).

DISCUSSION

Oesophageal perforation is serious complication and its incidence is increasing due to increased use of endoscopic procedures through out the world.Ideal management is primary repair if prompt diagnosis is made and surgery is carried out within 24 hours.Management of oesophageal perforation with late presentation varies from case to case and carries upto 40% mortality.[10,11] Oesophageal repair should be considered in all cases of non-malignant oesophageal perforation and should not be influenced by the time of presentation.[12] The majority of injuries are iatrogenic and increasing use of endoscopic procedures can be expected to lead to an even higher incidence of oesophageal perforation in coming years as in our study of ten patients out of eleven. 99% had history of endoscopic intervention.[13,14]

Conservative treatment consists of management in ICU setup and supportive treatment especially total parental nutrition.We dont have facilities of TPN so alternate methods were used with satisfactory results.In surgical management approach is decided by contrast study results and is dependant on site of perforation and associated sequelae of

perforation like empyema. Repair of late perforation is usually reenforced by flaps. Intercostal muscle,s ternocliedomastoid, pleura, pericardium, diaphragm and stomach can be used as flap. In our study we used pleural,pleuropericardial and ICM flap all with good results. Despite the many advances in thoracic surgery, the management of patients with oesophageal perforation remains controversial.[15] The overall mortality in our series is two out of eleven patients i.e. 18.18% which is a bit higher than other recent studies as 13.9% in study from Turkey[15] and 4.2% in study from USA.[16]

CONCLUSION

Surgical repair with reinforcement with flaps or aggressive conservative management can yield acceptable results in cases of oesophageal perforation who present late. Treatment is tailored case to case and should be managed in specialized units to cut down mortality and morbidity of this dreadful condition.

REFERENCES

1. Sami M, Shimi. Disorders of oesophagus. Sir Alfred Cuschieri, Robert J.C Steele, Abdool Raheem Moossa, Editor : Essential Surgical Practice. 4th Ed. London. 2002: 234 – 39.
2. Boerhaave H. Atrocis, nec descripti prius, morbid historia Secundum artis leges Consripta, Lugduni batavorum, bontes teniana. Medicine 60, 1724.
3. Younis, Z and Johnson, DA (1999). The spectrum of spontaneous and iatrogenic oesophageal injury perforations, Mallary – Weiss tears, and haematomas. J Clin Gastroentrol 29: 306 – 17.
4. John R. Handy, Jr. Carolyn E. Reed. Oesophageal Injury. Arthur E. Bave, Editor: Glenn's Thoracic and Cardiovascular Surgery. 6th Ed. Appleton & Lange: 1996: 747 – 759.
5. Jackson RH, Payne DK, Bacon BR. Oesophageal perforation due to nasogastric intubation. Am J Gastroenterol 85: 1990: 439 – 442.
6. Johnson KG, Hood DD. Oesophageal perforation associated with endotracheal intubation. Anesthesiology 64: 1986: 281 – 83.
7. Latimer EA, Clevenger FW, Osler TM: Tear of the cervical oesophagus following hyperextension from manual traction: Case Report. J Trauma 31: 1991: 1448 – 49.
8. Gerard M. Doherty, Carlos A. Pellegrini, Lawrence W. Way. Oesophagus and Diaphragm. Lawrance W. Way, Gerard M. Doherty, Editor : Current surgical Diagnosis and Treatment. 11th Ed. Mc Graww – Hill: 2003 : 479 – 502.
9. White RW, Morris DM: Diagnosis and management of oesophageal perforations. Am Surg 58: 1992: 112 – 119.
10. Peng Lj Quan X, Zongzheng J, Ya G, Xiangsheng, Yitan D et al. Videothoracoscopic drainage for oesophageal perforation with mediastinitis in children. J Paedtr Surg 41(3): 2006: 514 -17.
11. Brinster CJ, Singhal S, Lee L, Marshal MB, Kaiser LR, Kucharczuk JC. Evolving options in the management of oesophageal perforation. Ann Thorac Surg 77(4): 2004: 1475 -83.
12. Zumbro GL, Anstadt MP, Mawalawde K, Bhimji S, Paliotta MI, Pai G: Surgical Management of Oesophageal perforation : role of oesophageal conservation in delayed perforation. Am Surg; 68(1): 2002: 36 – 40.
13. Drabek, J. Keil R, Namesny I, 1999. The endoscopic treatment of benign oesophageal strictures by balloon dilatation. Dis Oesophagus 12: 28-9.
14. Fernandez F, Ritcher A, Freuden S, Wendl K, Manegold B, 1999. Treatment of endoscopic oesophageal perforation. Surg Endosc 13: 962 -6.
15. Froglu A, Can Korkcuogu I, Karaogonogy N, Yinaz O. Oesophageal perforation: the importance of early diagnosis and primary repair. Dis Oesophagus 17(1):2004: 91–4.
16. Vogel SB, Rout WR, Martin TD, Aboitt PL. Oesophageal perforation in adults: aggressive, conservative treatment low morbidity and mortality. Ann Surg 2005: 2: 1016 – 21.