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Reinforced Primary Repair in Delayed Thoracic Esophageal Perforation.

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Abstract:

A 55-year-old man with severe right-sided empyema was admitted to our hospital. Six days before this admission, he had undergone upper GI endoscopy in another center to remove a retained chicken bone in lower esophagus and despite documented thoracic esophageal perforation, treatment was surprisingly delayed. The perforation was closed with primary sutures and reinforced with intercostal muscle flap wrap and pleural patch. Esophagography performed 3 weeks after the operation showed a well-healed esophagus without stenosis or leakage. We conclude that regardless of the time interval between the injury and the operation, reinforced primary repair is recommended for non-malignant thoracic esophageal perforation and provide a one-stage operation with preservation of the native esophagus. As far as we know, this type of procedure (with regard to its underlying infected body region and considerable controversy in delayed esophageal perforation management) has not been previously performed in Iran.

Key Words: Esophageal perforation, Primary repair.

Introduction:

Esophageal perforation remains a life threatening situation and its management represents a challenge for the surgeon, especially if diagnosis has been delayed. At present, most surgeons recommend immediate surgical intervention except under unusual circumstances. Multiple surgical options are available but in most cases primary closure usually with buttressing of the suture line is recommended, regardless of the amount of time that has elapsed since the occurrence of the perforation(1). We report this case with an unusually delayed diagnosis of esophageal perforation to emphasize the safety and possibility of primary repair.

Case Report:

A 55-year-old man with obvious right sided empyema and clinical signs of sepsis was admitted to our hospital. Six daysbefore this admission he had undergone upper GI endoscopy in another center to remove a retained chicken bone in lower esophagus following which chest pain, fever and dyspnea appeared. A chest radiography had shown a significant right pleural effusion (Fig. 1) and a chest tube had been inserted. Surprisingly no definitive treatment had been performed and worsening empyema ensued. Vital signs at presentation were: PR=110/min, RR=28/min, T=39oC and BP=110/75mmHg. The patient was a farmer and had no underlying disease and physical examination revealed no other significant finding. Laboratory tests were normal except for WBC=13000 and PMN=90%. Following resuscitation of the patient and insertion of CVP and Foley catheters and administration of broad-spectrum antibiotics, an emergency barium esophagography was performed and esophageal perforation including its site and extent was confirmed (Fig. 2).

A right postero-lateral thoracotomy was performed and after evacuation of significant pus and complete clearing of the operative site by irrigation, the esophageal perforation was closed and reinforced with pleural patch and intercostal muscle flap wrap. A jejunostomy tube was also inserted. Post-operatively, 5-litre daily irrigation (by a catheter within the chest tube) and antibiotics were given until the drainage was clear and the patient became afebrile. Esophagography performed 12 days after the operation (Fig. 3) showed a scant leakage.Thus, feeding via jejunostomy tube and antibiotics were continued while the patient remained completely stable with no signs of sepsis. Esophagography performed 3 weeks after the operation showed

a well-healed esophagus with no leakage. The patient increasingly tolerated a normal diet and discharged after 35 days of hospital stay with no complication.

Follow-up of the patient since one year after the operation has revealed no dysphagia or any other difficulty in swallowing.

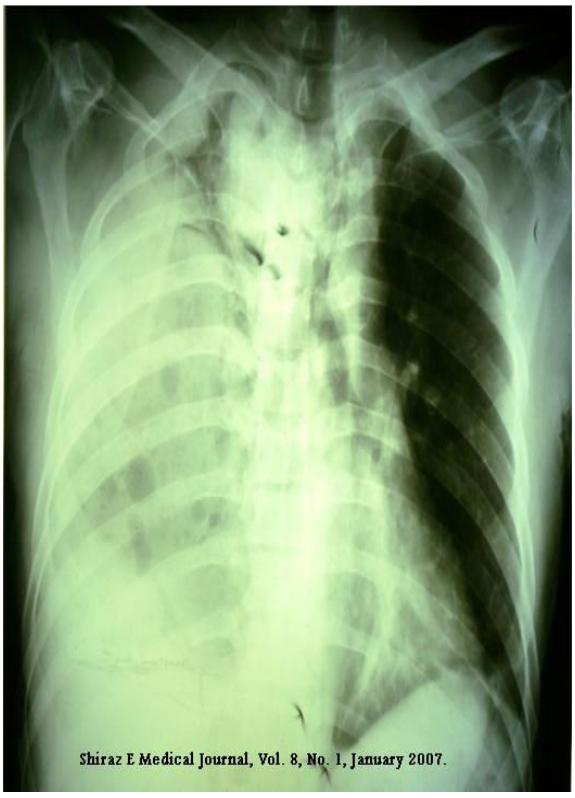

Fig 1: Significant right pleural effusion due to esophageal perforation

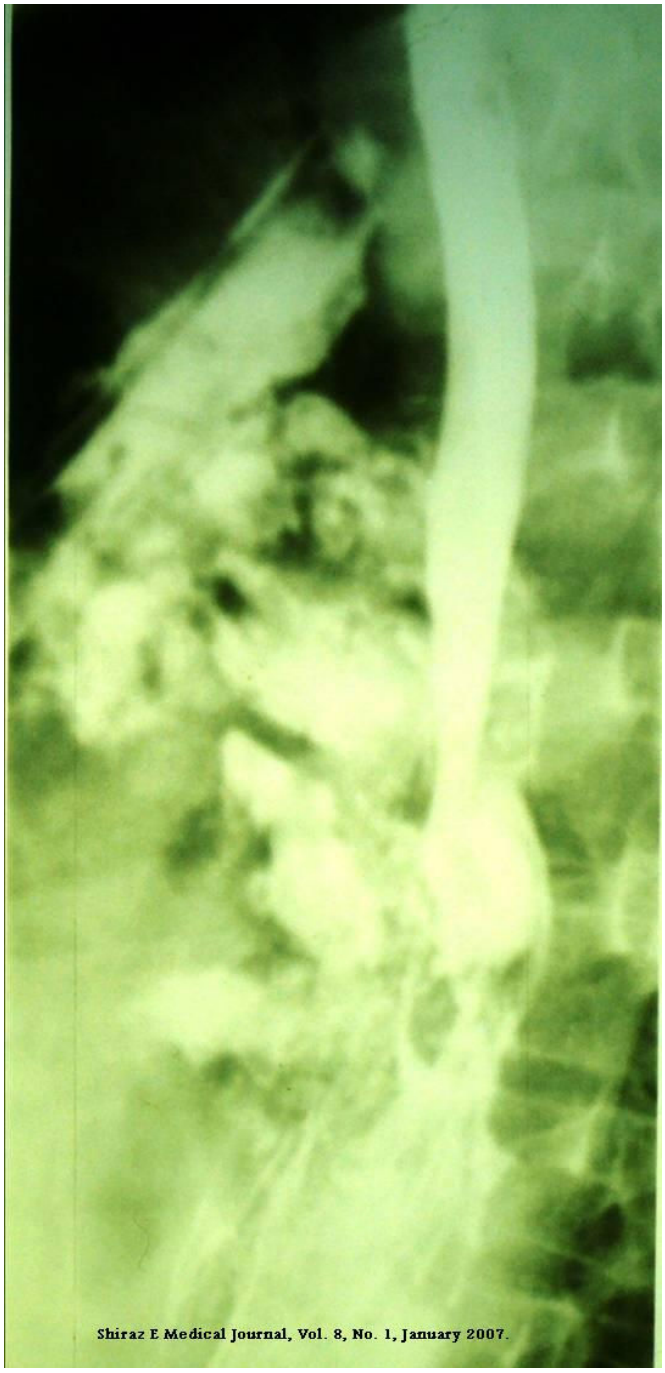

Fig 2: Barium esophagogram shows obvious leakage of barium

Fig 3: Barium esophagogram 12 days after the operation shows a well-healed esophagus with minimal leakage

Discussion:

At present, immediate surgical intervention is recommended and multiple surgical options are available including[1]: primary closure, primary closure with buttressing of suture lines, muscle flap closure, exclusion and diversion, T tube drainage, esophagectomy, intraluminal stent, minimally invasive repairs and finally, drainage only. There is increasing consensus that primary repair provides good results[2] regardless of time to presentation[3] but in order to avoid leakage the repair should buttressed with some kind of tissue flap[4,5]. The time interval between injury and its recognition is an important factor in regards to the extent of the inflammatory process but at present it is not regarded as a major factor in determining the appropriate therapeutic management nor of a successful outcome of repair[1,2,3,6,7]. Reinforced primary repair retains the native esophagus and avoids the need for later reconstructive operations[8]. In the absence of a non dilatable stricture or cancer, this procedure is recommended for most thoracic esophageal perforations, early or late.

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