

ENDOSCOPIC PNEUMATIC DILATATION FOR ACHALASIA OF THE OESOPHAGUS

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ABSTRACT

Seven patients with achalasia of the oesophagus were managed by pneumatic balloon dilatation. Dysphagia was relieved in all with a mean weight gain of 4.5 Kg at 3 months. Only one patient had transient symptoms of reflux, the others had remained asymptomatic at a mean follow up of 9.2 months. In our experience, endoscopic guided pneumatic balloon dilatation using the Microvasive dilator is a safe, simple and effective procedure for the management of achalasia of the oesophagus.

Key Words: Endoscopy, pneumatic balloon dilatation, achalasia.

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INTRODUCTION

Achalasia of the cardia is a disorder of oesophageal motility characterised by a failure of relaxation of the lower oesophageal sphincter and loss of peristalsis of the oesophagus on swallowing⁽¹⁾. Medical treatment using calcium antagonist and long acting nitrite have been tried with varying success^(2, 3). Surgical division of the lower oesophageal sphincter by cardiomyotomy (Heller's operation) produces effective and lasting decrease in resistance at the cardia and relief of dysphagia. Disruption of the lower oesophageal sphincter can also be achieved by forceful dilatation with pneumatic balloons⁽⁴⁾. Several series have been reported,^(5, 6, 7) showing this method is as effective as surgical cardiomyotomy and is associated with a lower incidence of reflux and subsequent stricture formation. We report our early experience with pneumatic balloon dilatation of this condition.

PATIENTS AND METHODS

Between January 1985 and November 1986, seven patients have undergone pneumatic balloon dilatation for achalasia of the oesophagus in the Combined Endoscopy Unit, Prince of Wales Hospital. There were three males

and four females, aged 22-75 years with a mean age of 51.5 years. The diagnosis of achalasia was based on clinical symptom, barium swallow finding and upper endoscopy. The duration of symptom ranged from 3 months to 2 years with a mean of 1 year.

Technique of pneumatic dilatation: The patient is fasted overnight and the procedure is performed under light sedation with intravenous diazepam and topical anaesthesia. An upper endoscopy is performed to confirm the diagnosis and to exclude the presence of a co-existing carcinoma. The level of the cardia is marked under endoscopic and fluoroscopic control with a radio-opaque marker. A guide wire is then inserted through the biopsy channel of the endoscope and left to lie along the greater curve of the stomach. The endoscope is then withdrawn leaving the guide wire in position. A 3.5 cm diameter dilatation balloon (Fig.1a) is passed over the guide wire and positioned under fluoroscopy across the cardio-oesophageal junction indicated by the radio-opaque marker (Fig. 1b). The balloon is then inflated with air and the pressure is kept between 260 to 300 mmHg for a period of 2 to 3 minutes. During the dilatation procedure, the patient may experience substernal pain and the balloon is usually covered with blood on withdrawal. The endoscope is then re-inserted and the lower oesophagus and the cardia is examined. This usually reveals a tear in the mucosa with mild bleeding which stops spontaneously. The patient is then observed overnight and allowed to take sips of water. If there is no complication and the patient can tolerate oral fluid, soft diet is resumed the next day. A check barium swallow is performed for assessment usually at 4 weeks.

RESULTS

Six patients had undergone one dilatation and one patient had a repeat procedure after four weeks because of residual symptom. There was no complication related to the dilatation. The mean hospital stay was 4 days (range 2-13 days). Six of the seven patients were discharged 2

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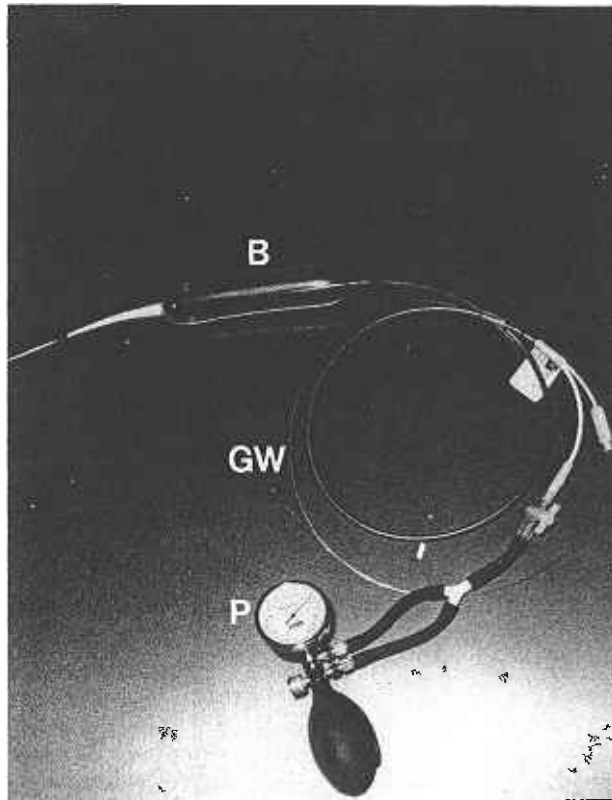


Fig. 1a

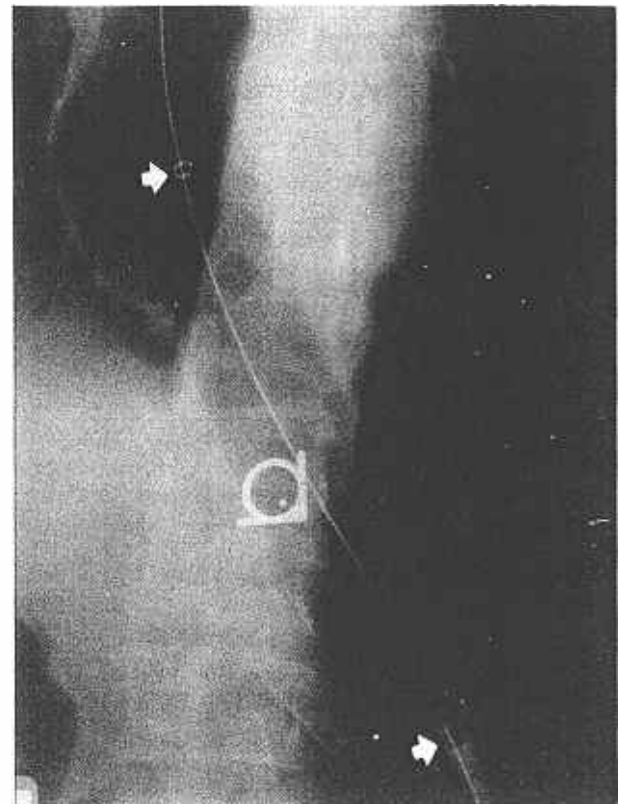


Fig. 1b

days after the procedure. A 75 years woman was hospitalised for 13 days for coexisting congestive heart failure. All patients reported a significant improvement in symptom with a mean weight gain of 4.5 kg (range 1.5 to 8.5 kg) at 12 weeks. Only one patient developed transient symptom of reflux which responded to a short course of H₂ blocker treatment, the others had remained asymptomatic at a mean follow up of 9.2 months (range 4-13 months). Follow up barium study was performed in 6 cases, all showing significant improvement of flow of barium through the cardia (Fig. 2).

DISCUSSION

The aim of treatment in achalasia is to disrupt the lower oesophageal sphincter. Drugs like isosorbide dinitrate and the calcium channel blocker nifedipine have been shown to be effective in reducing the lower oesophageal sphincter pressure resulting in symptomatic relief. Surgical cardiomyotomy is the most time-honored method which can most effectively disrupt the lower oesophageal sphincter. There is however, a considerable morbidity associated with surgery, and reflux oesophagitis occurs in about 10% of surgically treated patients⁽⁵⁾. Pneumatic balloon dilatation has a comparable success rate to surgery with a lower morbidity and shorter hospital stay. It is also associated with a lower incidence of subsequent reflux and stricture formation^(7, 8). Most gastroenterologist now believe that forceful dilatation of the oesophagus is

the treatment of choice for achalasia and surgical cardiomyotomy should be reserved for those patients who failed to benefit from the dilatation⁽⁵⁾.

Many types of balloon dilators have been used. The Hurst-Tucker (Brown-McHardy) dilator with a mercury weighed tip and the Rider-Moeller dilators are examples of fluoroscopic guided dilators. These are passed under fluoroscopic control into the stomach and the balloon inflated to disrupt the lower oesophageal sphincter. They have difficulty in passing through a tortuous oesophagus and could be dangerous in case of an epiphrenic diverticulum as the dilator may be lodged in the diverticulum and traumatize the oesophagus. It is safer to use an endoscopically placed guide wire and balloon dilator in the above situation. From a diagnostic standpoint, endoscopy is mandatory for dysphagic patients with suspected achalasia. Carcinoma of oesophagus may mimic the radiological appearance of achalasia and it is well known that achalasia is associated with a higher incidence of oesophageal malignancy⁽⁹⁾.

The most serious complication of pneumatic balloon dilatation is perforation of the oesophagus which occurs in 1-5% of cases resulting in mediastinitis⁽¹⁰⁾. The patient will complain of pain immediately after the procedure or after food with accompanying fever. Contrast examination is mandatory if there is clinical suggestion of perforation. A small localized perforation can be treated conservatively with continuous oesophageal suction, broad spectrum antibiotics and parenteral alimentation. A large free perforation is rare but may require immediate thoracotomy and repair.

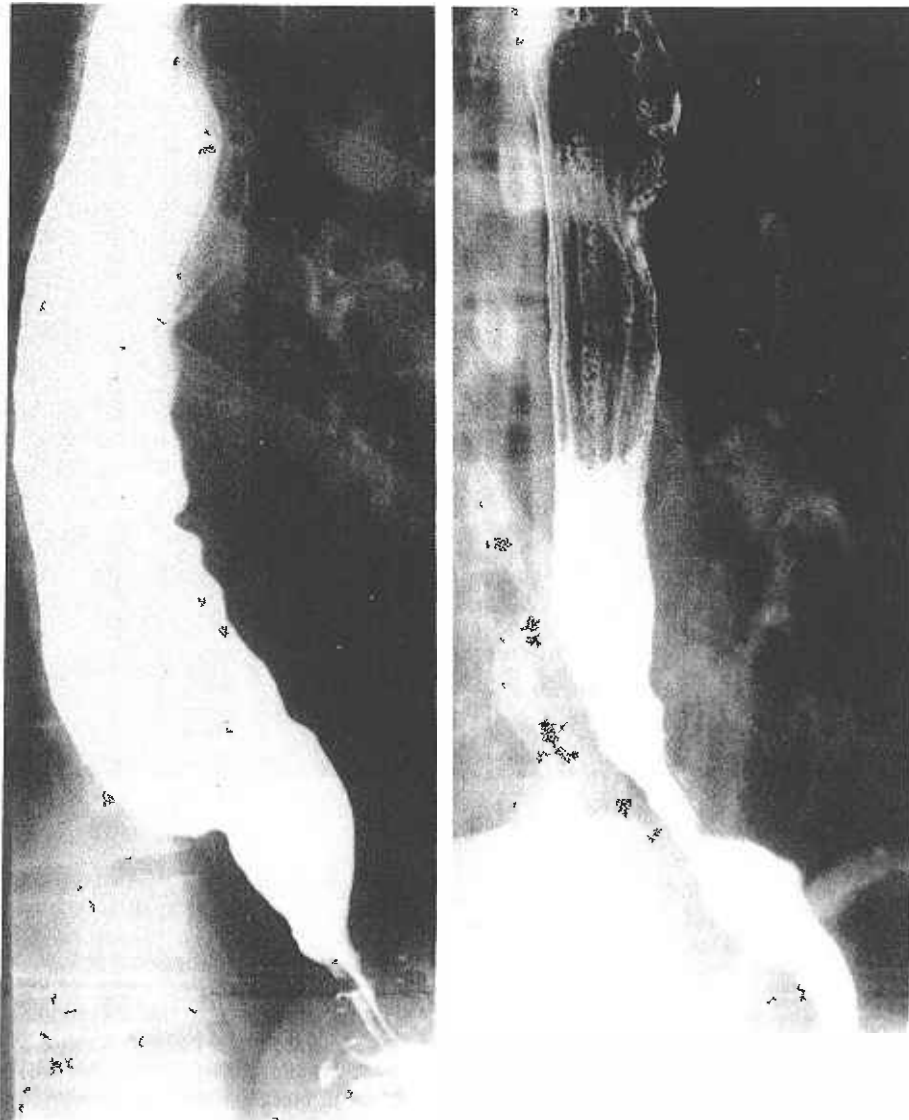


Fig. 2

REFERENCES

1. Pope C.E. II. Motor disorders in Sleisenger & Fordtran Ed. *Gastrointestinal Disease: Pathophysiology, Diagnosis and Management*. Saunders 1983.
2. Gelfond M, Rozen P, Gilat T. Isorsorbide Dinitrate and Nifedipine Treatment of Achalasia: A clinical, manometric and Radionuclide Evaluation. *Gastroenterology* 1982; 83: 963-9.
3. Bortolotti, Labo G. Clinical and manometric effects of nifedipine in patient with oesophageal achalasia. *Gastroenterology* 1981; 80: 39-44.
4. Fellows IW, Ogilvie AL, Atkinson M. Pneumatic dilatation in achalasia. *Gut* 1983; 24: 1020-3.
5. Vantrappen G, Helleman J. Treatment of achalasia and related motor disorder. *Gastroenterology* 1980; 79: 144-54.
6. Vantrappen G, Janssens J. To dilate or to operate? That is the question. *Gut* 1983; 24: 1013-9.
7. Yon J, Christensen J. An uncontrolled comparison of treatment for achalasia. *Ann Surg* 1975; 182: 672-5.
8. Bennett JR, Hendrix TR. Treatment of achalasia with pneumatic dilatation. *Mod. Treat* 1970; 7: 1217-28.
9. Lortat-Jacob JL, Richard CA, Fekete F and Testart J. Cardiospasm and oesophageal carcinoma: Report of 24 cases. *Surgery* 1969; 66: 969.
10. Stewart ET, Miller WN, Hogan WJ. Desirability of roentgen oesophageal examination immediately after pneumatic dilatation for achalasia. *Radiology* 1979; 130: 589-91.