



## CASE REPORT

# Endoscopic management of intragastric penetrated adjustable gastric band for morbid obesity

Giovanni D De Palma, Antonio Formato, Vincenzo Pilone, Maria Rega, Maria Elena Giuliano, Immacolata Simeoli, Pietro Forestieri

Giovanni D De Palma, Antonio Formato, Vincenzo Pilone, Maria Rega, Maria Elena Giuliano, Immacolata Simeoli, Pietro Forestieri, Centro per l'Innovazione Tecnologica in Chirurgia (ITC)-Dipartimento di Chirurgia Generale, Oncologica e Tecnologie Avanzate. Università degli Studi di Napoli Federico II Facoltà di Medicina e Chirurgia, Napoli, Italy

Correspondence to: Giovanni De Palma, Centro per l'Innovazione Tecnologica in Chirurgia-Dipartimento di Chirurgia Generale, Oncologica e Tecnologie Avanzate. Università degli Studi di Napoli Federico II- Facoltà di Medicina e Chirurgia, Via Pansini, 5. 80131 Napoli, Italy. giovanni.depalma@unina.it

Telephone: +39-81-7462773 Fax: +39-81-7462773

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## Abstract

This report describes a case of successful endoscopic management of intragastric penetrated adjustable gastric band in a patient with morbid obesity. The favorable course of the case described here demonstrates that adjustable gastric bands in the process of migration need not be removed surgically in patients who are asymptomatic.

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**Key words:** Morbid obesity; Adjustable gastric band; Complications; Endoscopy; Endoscopic therapy

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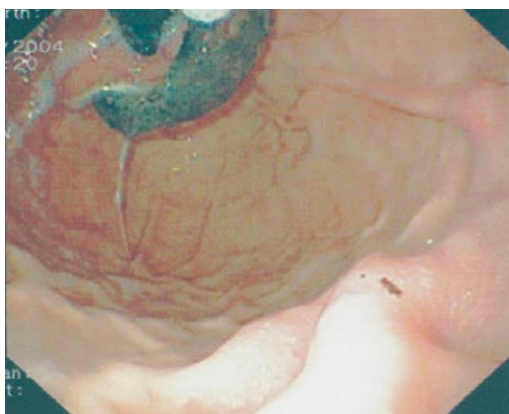
## INTRODUCTION

Adjustable gastric banding is an established procedure for the treatment of obesity. Early complications associated with gastric banding included per operative bleeding, infection, and pneumonia. Late complications relate to the band or to the port system. The former include displacement, with resultant valve or pouch enlargement; gastric perforation; and band penetration. Port-associated complications include infection, disconnection, or

migration. These late complications usually are corrected by surgery<sup>[1-9]</sup>. Penetration of a gastric band into the stomach lumen is a rare late complication. In almost all cases, a penetrated band must be removed surgically but, under certain circumstances, endoscopic intervention can be attempted. We here report a case of endoscopic management of intragastric penetrated adjustable gastric band.

## CASE REPORT

A 47-year-old man with morbid obesity (weight: 113 kg, body mass index 43.1 kg/m<sup>2</sup>) underwent open implanted adjustable gastric band (November 1997). The post-interventional follow up showed a good weight loss (weight 96.6 kg). Ten months later (September 25, 1998) because of the patient was found to have unexplained weight gains (weight 108 kg), filling volume in the band was increased to 2.5 mL. This was, however, ineffective (weight 110 kg), and because of the patient reported the possibility to have complete and plentiful meals a port disconnection was suspected. The port was replaced under local anesthesia. On November 2001, the patient was found to have once again weight gains (weight 117 kg) because of a recurrent port disconnection. A new port was implanted under local anesthesia and a filling volume in the band was progressively increased to 3 mL. On August 2002 (weight 93.5 kg), the patient experienced a sub-cutaneous abscess at site of port implantation, due to port-associated infection. An upper GI endoscopy was unremarkable and because of the infection was unresponsive to antibiotics, the port was removed and re-implanted. However, a recurrent port-associated infection was diagnosed 1 mo later and the patient was scheduled to receive a monthly upper endoscopy because of the risk of penetration of the gastric band into the gastric lumen. Six months later (February 2003; 62 mo after the banding procedure) endoscopy demonstrated a partial penetration of the gastric band into the gastric lumen (Figure 1). Because of the patient was asymptomatic at that time, it was decided to await the complete intragastric band migration for an endoscopic attempt to remove the gastric band. Gastroscopy 13 mo later (March 2004), revealed almost total penetration of the band; only a small tissue bridge held the device to the gastric wall. With almost complete penetration of the band, an endoscopic approach was



**Figure 1** Endoscopic appearance of intra-gastric migration of band.



**Figure 2** Endoscopic retrieval of the gastric band.

felt to be safe and feasible. An endoscopic attempt to remove the gastric band was therefore performed with surgical standby. The tissue bridge was injected with a dilute solution of epinephrine (1:10 000) and the tissue bridge then was resected step by step by using a needle-knife papillotome. After severing the tissue bridge, the band remained attached to the port system. Most of the silicone tube connecting the injection port with the gastric band was resected and the attached port was removed. The rest of the tube slipped into the stomach, the band lying freely within the gastric lumen. The band was cut by the means of the CBC360 AMI gastric banding cutter (C.J.Medical. Haddenham, Buckinghamshire, England) and finally retrieved endoscopically by using a polypectomy snare (Figure 2). The connecting tube was removed through little cutaneous incision. The post-interventional course was uneventful. A gastrografen swallow done postoperatively ruled out a leak, and patient was discharged 3 d later.

## DISCUSSION

Penetration of a gastric band into the stomach lumen is a rare late complication<sup>[2-9]</sup>. The suggested primary etiologic factor for the band penetration is pressure applied to the gastric wall. External pressure is applied either through chronic overfilling of the band or the inclusion of too much gastric wall at operation. Internal pressure is applied as a result of ingestion of excessively large food boluses early after operation. Another suggested factor is a rejection reaction against the silicon gastric band with subsequent circumferential fibrous contraction<sup>[3,9]</sup>. The main symptoms that suggest dislocation or penetration of a gastric band are weight gain and epigastric pain or port-associated infection. The diagnosis is established by endoscopy or x-ray study. Because barium contrast radiography provides additional information on other complications of gastric banding, such as band slippage or pouch dilatation, this imaging study should be performed initially. Nonetheless, the final diagnosis of band migration is established by endoscopy<sup>[4,5]</sup>. In almost all cases, a penetrated band must be removed surgically, and to our knowledge,

there are only two published case reports of endoscopic management of a penetrated gastric band<sup>[10,11]</sup>. Whether a penetrated gastric band can be managed endoscopically depends on the degree of penetration. The risk of gastric perforation after endoscopic management is higher in patients with a small or a partial penetration of the band. Thus, the optimal candidate for endoscopic therapy should have an almost complete penetration of the band. In this group of patients, the risk of an iatrogenic perforation is relatively small. As demonstrated by the present case, endoscopic management of a penetrated gastric band is feasible under certain circumstances, specifically nearly complete penetration of the band into the stomach. The favorable course of the case described here demonstrates that adjustable gastric bands in the process of migration need not be removed surgically in patients who are asymptomatic. Complete migration can be awaited and the gastric band retrieved less invasively. Compared with operative removal, the procedure described above is expected to have fewer complications.

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