Recurrence Hiccups of Different Etiologies in An Elderly Man

Shi-Min Yuan
Department of Cardiothoracic Surgery, The First Hospital of Putian, Teaching Hospital, Fujian Medical University, Putian, Fujian Province, People’s Republic of China

Abstract
A 67-year-old male patient with gastric upset disclosed a huge cardiac myxoma incidentally in a cardiac screening examination before gastroscopy. He thus gave up the gastroscopy and received a cardiac myxoma resection. Following the operation, he developed persistent hiccups, which were considered to be a result of the postoperative mediastinal hematoma. The hiccups were cured after the completion of a 21-day treatment with integrated Western and traditional Chinese medicine. One year later, he developed recurrent intractable hiccups. Barium contrast radiography, chest computed tomography and gastroscopy all suggested a gastric cardia tumor involving the esophagus and gastric body. He received radical resection of the gastric cardia carcinoma and recovered uneventfully, being free from intractable hiccups after the operation. The evolving different etiologies of a hiccup may perplex the physician and a definitive diagnosis can be imperative to ensure the correct treatment is offered.

Introduction
Postoperative hiccups after cardiac operations are rare and are usually curable in the majority of cases [1]. Hiccups that are alternative to other usual neurological and digestive etiologies can sometimes be misinterpreted as being caused by a gastrointestinal disorder whereby the patient manifests, primarily, digestive symptoms [2,3]. In particular, hiccups can have complex etiologies, for instance both cardiovascular and digestive, in the same patient and this may pose a challenge when prompting diagnosis and subsequent treatment.

Case presentation
A 67-year-old male patient was referred to this hospital due to recurrent intractable hiccups. One year ago, he was admitted because of persistent gastric upsets and a transthoracic echocardiography incidentally disclosed a huge left atrial myxoma. He thus gave up the gastroscopy examination and received a cardiac myxoma resection. On postoperative day 2, chest computed tomography revealed a huge mediastinal hematoma measuring 90 mm. He and his family declined surgery for evacuation of the mediastinal hematoma. He was conservatively managed with antibiotics and blood transfusions. On postoperative day 8, he developed persistent hiccups and was treated with oral lidocaine mucilage and baclofen via the Tsusanli (ST 36) and Neiguan (PC 6) acupoints[4]. After 21 days of treatment, the hiccups subsided. At approximately three months after the operation, he was still hiccup-free and chest computed

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Corresponding author: Shi-Min Yuan
Address: 389 Longdejing Street, Chengxiang District, Putian 351100, Fujian Province, People’s Republic of China
E-mail: shiminyuan@126.com
Telephone: 86-594-6923117

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tomography revealed an almost completely resolved mediastinal hematoma. The gastroscope examination for identifying the cause of the gastric upset was postponed through fear of possible heart lacerations. Chest computed tomography revealed no remarkable findings of the stomach (Figure 1).

One year later, he again had recurrent hiccups. Barium contrast radiography showed a local lumen stenosis of the gastric cardia with coarse stomach lining and mucosal disruption. A chest computed tomography demonstrated poor stomach filling, uneven thickening of the lining of the gastric cardia, and multiple lymph node shadows around the stomach (Figure 2). Gastroscopy revealed a sunken lesion (measuring $3 \times 3$ cm) on the lesser curved side of the upper gastric body with a scabby appearance. Histological study of the gastroscopic biopsy demonstrated poorly-differentiated adenocarcinoma. He was diagnosed with gastric cardia carcinoma involving the esophagus and the gastric body. He received radical resection of the gastric cardia carcinoma and recovered uneventfully, being free from hiccups after the operation.

**Discussion**

Miscellaneous causes can induce hiccups, including central and peripheral disorders and procedures that involved the hiccup reflex arc [5]. A cardiac operation can induce hiccups in two ways. Firstly, an ice slush for heart surface cooling, especially during induced heart arrest, may jeopardize the phrenic nerve and temporary diaphragmatic paralysis [1]. Secondly, postoperative complications, such as diaphragmatic hernia [6], delayed pericardial tamponade [7] and huge mediastinal hematoma [4] may became the underlying causes of secondary hiccups, with the phrenic nerve being compressed or stretched.

It has been assumed that, in this patient, the primary persistent hiccup was induced by complex etiologies, firstly by a left atrial myxoma, and subsequently via a postoperative mediastinal hematoma. With the subsidence of the mediastinal hematoma and progression of the gastric cardia carcinoma, the digestive etiology became prevailed. The correct diagnosis of the hiccup causes was imperative to ascertaining an effective treatment. Chang and Lu [5] categorized the etiologies of hiccups into four: central, peripheral, procedural and miscellaneous. As has been proposed, Launois et al. [8] proposed that routine examinations (chest X-ray, blood test, erythrocyte sedimentation rate, serum electrolytes and gastroendoscopy) could be the initial screening methods for the chronic hiccup. Following this, brain computed tomography or magnetic resonance imaging could be helpful if necessary.

**Conclusions**

The correct diagnosis of the complex etiologies of hiccups is important with regards to the early correct diagnosis of the primary disorder and subsequent proper treatment.
References


個案報告

不同原因導致的復發性呃逆

袁師敏
福建省 莆田市 福建醫科大學 莆田市第一醫院教學醫院 胸心外科

摘要

一位 67 歲男性病患胃部不適，胃鏡檢查前心臟篩查無意間發現巨大心臟黏液瘤。他接受心臟黏液瘤切除術，而放棄胃鏡檢查。他在手術後出現持續性呃逆，被認為是手術後腹腔血腫所致。中西醫保守治療共計 21 天後呃逆消失。一年後，持續性呃逆復發。造影、胸部 CT 像和胃鏡檢查都顯示侵及食管和胃體的胃腫門癌。胃腫門癌根治術後，病人順利康復，呃逆消失。呃逆的不同病因的演變可能困擾醫生，其病因的確診對及早地給予正確的治療至關重要。

關鍵詞：鑒別診斷、呃逆、胃腫瘤