CASE REPORT

Esophageal dysfunction in a female patient with diabetes mellitus and achalasia

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Abstract

Background: **Achalasia is an infrequent disorder of esophageal motility. Diabetes mellitus is an endocrine metabolic disease, the complication of which can afflict the motor activity of gastroenteral tract. The combination of these diseases in one patient is also very rare. In this study we introduce one patient suffering from this scarce coincidence of diseases.**

Case history: **A 54-year-old diabetic patient who lost weight of 26 kg in one month with repeated hypoglycaemic collapse states and regurgitation of poorly digested food and saliva with maintained appetite and thirst. The diagnosis of esophageal achalasia II was proved. A standard surgical performance was chosen, namely the laparoscopic myotomy. The extent of myotomy was verified by preoperative manometry. Approximately 1 month after the surgery, intermittent mild dysphagia especially after the consumption of solid food and some sorts of fruit appeared. The suspicion of stricture in the site of myotomy led us to the performance of endoscopic and radiologic examinations. The balloon calibration of cardia did not reveal any residual muscular fibres. The supplementation of a prokinetic drug of itoprid three times a day resulted in a significant improvement of difficulties.**

Conclusion: **Despite the sufficient extent of surgical treatment in a patient suffering from these two diseases, the resulting effect was not fully satisfactory. It is apparent that despite the correctly indicated and performed operation in patients suffering from a metabolic disease, the complications of which afflict the motility of upper digestive tract, the ideal response to treatment cannot be expected. The supplemented prokinetic therapy is inevitable, and informing the patient on the expected result and particular residual disorders can save both the patient and surgeon from disappointment.** ***(Fig. 3, Ref. 8.)***

Key words: achalasia, myotomy, diabetes, dysphagia.

Esophagocardial achalasia is a not very common primary esophageal dysfunction, which afflicts one person out of 100,000. It is manifested by dysphagia, regurgitation of undigested food and saliva, especially at night and in a lying position and in developed stages of disease also by loss of weight. It may cause aspiration and aspiration pneumonia.

The diagnostics is based on subjective troubles, radiological examination and endoscopy (1). The therapy is based on cardia dilatation, application of botulotoxin, attempts to influence pharmacologically the tone of lower oesophageal sphincter. At surgical workplaces, however, myotomy of lower esophageal sphincter (LES) is used most often. The most lasting effect is obtained by correct indication and performance of laparoscopic extramucosal myotomy (2).

Diabetes mellitus is an endocrine metabolic disease which may participate in development of digestive tract motility defects (8) and is usually considered to be a possible factor in the development of dysphagia (3, 4).

In our case report we want to introduce a case of unusual coincidence of these diseases in a female patient, who underwent laparoscopic myotomy. The effect of operation was veri-

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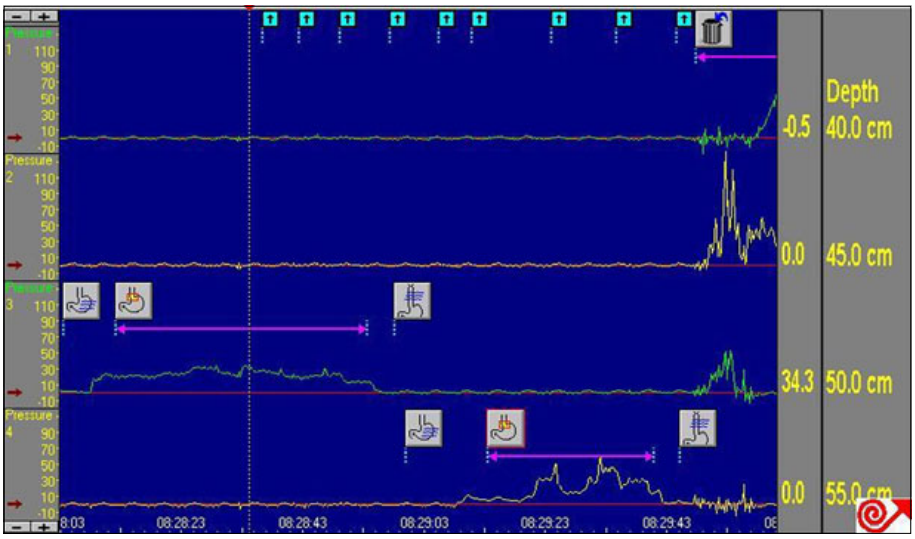

Fig. 1. Intraoperative manometry before myotomy: LES resting pressure 35–40 mmHg (tracing 3 and 4).

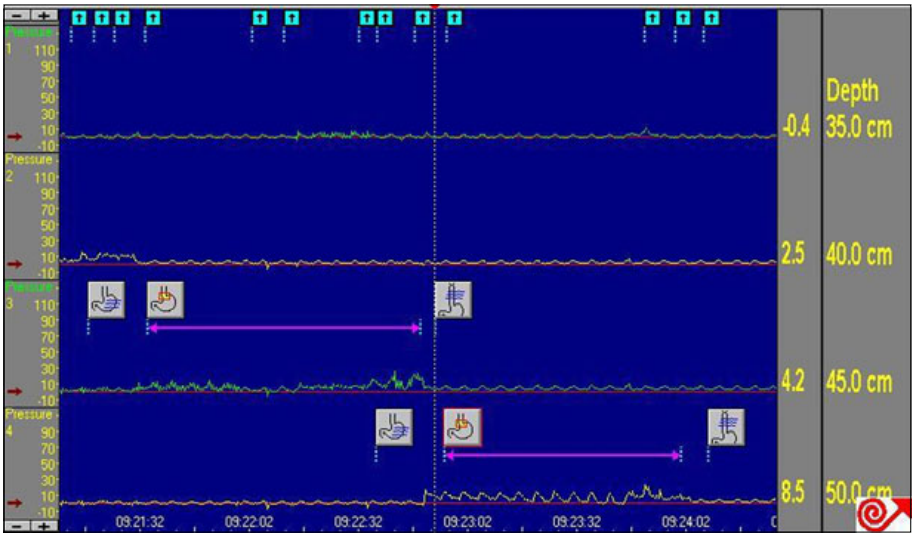

Fig. 2. Intraoperative manometry after myotomy: LES resting pressure 10–15 mmHg (tracing 3 and 4). Depression of LES resting pressure to 25–30 % of previous values.

fied by intra-operation manometry. Dysphagia, which developed in the latter post-operation period, was evidently caused by a severe esophageal motility defect caused probably by the combination of both of these diseases.

Case report

A 54-year-old female patient with type II diabetes, treated for 4 years – the first three years by peroral antidiabetic, the last year by insulin – referred from the department of Internal Medicine due to loss of weight from 92 kg down to 66 kg in one month, repeated collapse hypoglycaemia and regurgitation of undigested food and saliva, with good appetite and thirst. Only occasionally, she experienced swallowing disorders. Her gastroscopic examination showed free cardia patency, antrumgastritis, bulbitis and food retention in the stomach with suspicion of gastroparesis. The following were shown as the secondary diagnosis: organ diabetes complications – neuropathy, nephropathy with starting renal insufficiency, chronic ischaemic heart disease, arterial hypertension II according to the WHO, chronic obstructive lung disease, visceral obesity and paranoid schizophrenia.

The patient's examination was completed radiologically and by manometry, and the diagnosis of esophagocardiac achalasia II was confirmed. After the metabolic preparation and correction of glycaemia, the patient was ready for the surgery. The standard operation was selected using laparoscopic myotomy with intra-operation manometry, where the adequate extent of myotomy was verified (Figs 1, 2) and intra-operation endoscopy (Fig. 3), through which intact mucosa in the site of myotomy was shown. In the post-operation period, we observed a practically instant relief from

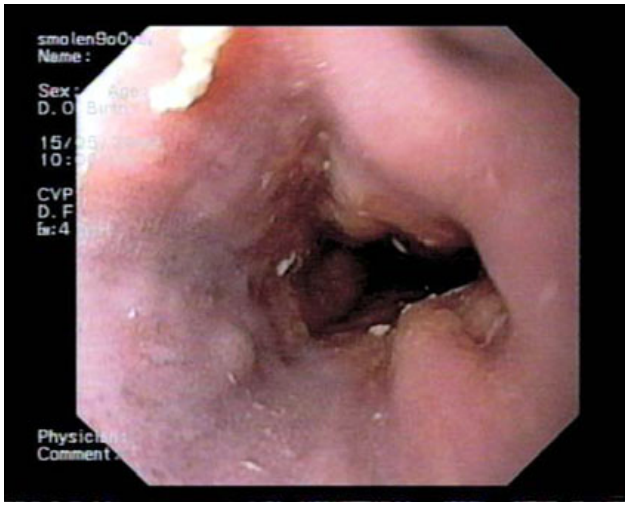

Fig. 3. Intraoperative endoscopy after myotomy — easy passage of endoscope through cardia, bulging of mucosa in myotomy area (three o'clock).

dysphagia difficulties, easy food intake, cessation of weight loss and even slight weight increase and very easy diabetes correction with a regular intake of a specified quantity of saccharides in the diet. No collapse due to hypoglycaemia occurred.

Approximately one month after the operation, after the commencement of the complete food intake including fruit, mild dysphagia occurred intermittently, especially after the consumption of solid food and some types of fruit (apples, citruse). The apprehension of stricture in the site of myotomy was the reason for post-operative endoscopic examination, which did not show an organic stricture, but on the contrary, it showed free passage of instrument and also radiological examination revealed slightly slower passage of cardia and uncoordinated oesophageal activity. Balloon cardia calibration did not show any residual muscular fibre or signs of organic stricture in the site of myotomy (scar) or reflux stricture, which we had been afraid of. Supplementing prokinetics in the form of itopridum hydrochloridum 50mg, three times a day, and repeated recommendation of certain consistent eating measures resulted in significant improvement. The patient tolerates practically any diet when taking into consideration the diabetes diet, maintains her weight and her diabetes is adequately compensated by insulin.

Discussion

The role of diabetes in the development of defects of digestive tract motility, especially in the gastroduodenal area, is known in the form of diabetic gastropathy. In literature, a relationship between age and the development of defects of esophageal motility (5, 7), the effect of diabetes on esophageal motility defects, including in asymptomatic diabetics (6) can be found. According to endoscopic findings of gastric food retention, diabetic visceropathy in our patient was certainly the cause of at least the defect of stomach evacuation (already prior to the operation).The patient was not examined by modern methods as electrogastrography or by scintigraphic evacuation studies. For determining the diagnosis and the selected therapy, the performed examinations were considered as adequate. Furthermore, the advanced stage of the affliction and repeated hypoglycaemia condition, accompanied by loss of weight, required almost immediate action. By intra-operation manometry, we objectivized the decrease in LES resting pressure and, at the same time, also the extent of adequate myotomy. The patient's post-operative progress was evaluated as positive on the basis of her subjective feeling and easy diabetes compensation during insulin therapy. The development of intermittent dysphagia, (after the full diet load, considering the permanent affliction of esophageal motility resulted from the original disease), led us to cardia calibration radiologically by balloon concurrently with its dilatation. The apprehension of incomplete myotomy proved to be groundless. The subsequent prokinetic therapy and its effect convinced us apparently that a permanent medication is necessary for undoubtedly combined defect of esophageal motility and that the original disease – achalasia, resulted from ganglia and fibre of myenteric plexus degeneration, and afflictions of other neuromotor components by diabetic visceropathy.

Although an adequate extent of surgical therapy was demonstrated in the patient with coincidence of both of these diseases, its final effect was not as satisfactory as we would expect on the basis of the results of simple achalasia. It is apparent that despite the correct indication and performance of surgery in patients suffering from metabolic diseases, the complications of which afflict the motility of upper digestive tract, no ideal result can be expected.

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