

Rapid Communication

Parkinsonism Revealing Peptic Ulcer and Gastric Outlet Obstruction: Was it more than an Association?

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Abstract

Parkinsonism is a neurological syndrome characterized by tremor, hypokinesia, rigidity, and postural instability. This syndrome characterizes the Parkinson's disease which is a progressive neurodegenerative illness. However, a wide range of other etiologies may lead to a similar set of symptoms. Parkinsonism can be caused by drugs, toxins and metabolic diseases.

The author describes a case of Parkinsonism in an old man with peptic ulcer pyloric stenosis and Helicobacter Pylori chronic infection. The aim is to discuss possible links between gastric outlet obstruction and these specific neurological symptoms.

Keywords: Peptic ulcer-gastric outlet obstruction-parkinsonism

Introduction

Peptic ulcer disease may be accompanied by varying degrees of obstruction caused by inflammatory swelling of the pyloric channel or chronic scarring associated with fibrosis. In Tunisia, about 10% of patients develop gastric outlet obstruction from peptic ulcer pyloric stenosis. Metabolic disorders are frequent due to vomiting. In these cases several neuropsychiatric syndromes have been described [1].

The understanding of peptic ulcer disease (PUD) etiology and recommendation of Helicobacter Pylori eradication have decreased the incidence of this complication. Gastric outlet obstruction still requires surgical management due to frequent failure of non-operative treatment [2]. Helicobacter pylori has long been known to cause gastritis and ulcers, but mounting evidence suggests that this organism contributes to several extragastric diseases, including idiopathic Parkinson's disease [3].

Observation

A 73-year-old man presented to the neurological emergency unit with new onset tremor, bradykinesia, rigidity and postural instability. The diagnosis of Parkinson's disease (PD) was suspected and the patient was admitted for further exploration. During the hospitalization he presented several episodes of vomiting. The biological assessment showed an acute renal failure and severe hypochloaemic, hypokalaemic metabolic alkalosis. Upper gastrointestinal tract endoscopy and barium X-ray have confirmed the gastric outlet obstruction caused by a chronic peptic ulcer (Figure 1). Histopathology of biopsies showed a high rate of Helicobacter pylori infection. After a long preparation including nasogastric aspiration, intravenous proton-pump inhibitors, rehydration and antibiotherapy, the patient was operated due to the unavailability of the endoscopic treatment option. A truncal vagotomy and gastrojejunostomy were performed. The postoperative courses were uneventful. The neurological symptoms have persisted. However a marked improvement of bradykinesia and rigidity was observed. The diagnosis of Parkinsonism whose evolution was accelerated by metabolic disorders caused by the gastric outlet obstruction was retained. The patient was assigned to neurologists.

Discussion

Diseases that mechanically impede gastric emptying cause gastric outlet obstruction syndrome. Before 1980s, peptic ulcer was the most common etiology. However the incidence has declined with discovery of Helicobacter pylori and proton pump inhibitors that revolutionized the management of the early disease.

The biochemical syndrome of hypochloaemic, hypokalaemic metabolic alkalosis with paradoxical aciduria and hypocalcaemia is rarely seen in the modern medicine. The physiopathology of the biochemical aberrations in gastric outlet obstruction is the result of persistent vomiting of gastric hydrochloric acid. As dehydration progresses, metabolic abnormalities become more profound and renal function is overwhelmed [4,5].

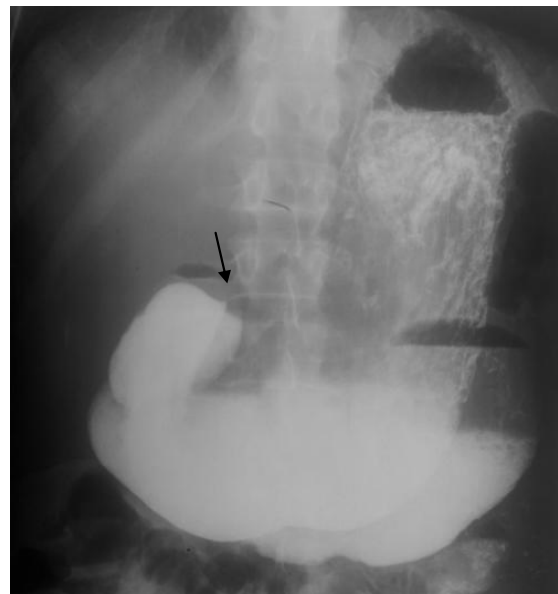


Figure 1: Overdistended stomach with an air/fluid level and deformed pyloric stenosis.

Patients with gastric outlet obstruction usually have a history of nausea, vomiting, and epigastric pain or fullness. Severe metabolic disorders may cause neurologic symptoms especially in the elderly. Parkinsonism was never described in association to pyloric stenosis but the probable role of helicobacter pylori has been suspected for years [6,7].

The people with Parkinson's disease are more likely than healthy people to be infected with this bacterium. Patients treated and cured of the infection showed a slight improvement. According to recent researches; the treatment of the common gastrointestinal infection with *Helicobacter pylori* may improve levodopa absorption in the gut and hence improve symptoms [8,9].

Traci Testerman and Michael Salvatore suggested that *Helicobacter pylori*, a bacterium that lives in the stomachs of about half the people in the world, may help trigger Parkinson's disease. These researchers demonstrated that middle-aged mice infected with the ulcer-causing bacterium developed abnormal movement patterns similar to the Parkinson disease [10].

A link between Parkinson's disease and the stomach bacterium can no longer be ignored.

Conclusion

Gastric outlet obstruction from peptic ulcer pyloric stenosis is not rare in Tunisia. The *Helicobacter pylori* infection plays a key role in the physiopathology of this syndrome. Dopamine-making cells may be the latest victims of the infection. This can promote the development of Parkinson's disease.

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