

Special Article

## A Case of Transient Global Amnesia after Upper Gastrointestinal Endoscopy without Premedication

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### Abstract

Transient global amnesia (TGA) is characterized by sudden, temporary and anterograde memory loss, which has been associated with migraine history, cardiovascular diseases and stress conditions. Endoscopy-related TGA seems to be an uncommon adverse event and has frequently associated with premedication use. We present a case of TGA after upper gastrointestinal endoscopy without medication use, in order to increase clinicians' awareness of this condition.

**Keywords:** global transient amnesia; endoscopy; complication; gastroscopy

### Introduction

Transient Global Amnesia (TGA) is characterized by acute, temporary and anterograde amnesia, usually lasting several hours. During TGA, the other neurological functions remain normal. TGA has been associated with many conditions, such as migraine history, cardiovascular risk factors, history of epileptic seizures, physical effort, emotional stress and temperature change, nevertheless, its etiology remains unclear (Jang et al., 2014). In this paper, we present a case of TGA after upper gastrointestinal endoscopy without premedication use.

**Case presentation:** A 62-year-old woman underwent esophagogastroduodenoscopy at hospital due to chronic dyspeptic symptoms. She suffered from arterial hypertension, atrial fibrillation and depression and took medications for these diseases. Prior and during endoscopy, the patient did not receive sedation and upper gastrointestinal endoscopy was uneventful and revealed mild gastritis. The procedure time was 5 to 7 minutes. Several minutes after endoscopy,

the patient was constantly asking "what hospital am I in?" and "why am I at hospital?" and was disoriented. Furthermore, she did not remember the endoscopy procedure. She denied chest pain, headache and dizziness. The vital signs such as heart rate, blood pressure, oxygen saturation and temperature and electrocardiograph revealed the already known atrial fibrillation. Neurological examination was normal without neurological deficits and recent memory had been only impaired. CT brain was normal and electroencephalogram detected no epileptic abnormalities. A few hours after endoscopy, the patient's memory has been recovered, except for the period during episode. In addition, brain MRI diffusion-weighted images 24 hours after episode showed no abnormalities. According to these findings and clinical picture of patient, a diagnosis of endoscopy-related TGA was made. The patient was discharged after two days.

### Discussion

TGA was first described in literature by Bender, in 1956 (Jaffe and Bender, 1966) and its diagnosis

is required the exclusion of alternative etiologies. Hodges and Worlow have been proposed the following diagnostic criteria:

1. Attacks must be witnessed,
2. Anterograde amnesia during the attack,
3. Cognitive impairment is limited to amnesia,
4. No clouding of consciousness or loss of personal identity,
5. No focal neurological signs,
6. No epileptic features,
7. Symptoms must resolve within 24 hours,
8. No history recent head injury (Spiegel et al., 2017; Hodges and Warlow, 1990).

Differential diagnosis of TGA includes several diseases, such as, migraine headache, transient epileptic amnesia, transient ischemic attack, dissociative amnesia and intoxication. The pathophysiology of TGA is not fully clarified; nevertheless, venous congestion, psychogenic disorders and arterial ischemia seem to contribute to TGA development. No treatment is needed, because TGA is a benign and self-limited condition (Spiegel et al., 2017). Several medical procedure-associated with TGA have been reported, including frequently cerebral angiography, coronary angiography and general anesthesia. Predisposing conditions for the development of medical procedure-related TGA seem to be Valsava-associated activities, pain and use of many medications, such as benzodiazepines (Jeong et al., 2018).

Regarding gastrointestinal procedures, several cases of TGA after gastroscopy have been reported. The etiology of endoscopy-associated TGA remains unclear. In some cases, the use of hyoscine butylbromide (Buscopan), as premedication, has been associated with TGA (Lee 2007). Furthermore, midazolam, a frequent used agent in endoscopy, may commonly induce anterograde amnesia (Yi and Shin 2005). However, several cases of upper gastrointestinal endoscopy-related TGA without premedication use have been reported (Hiraga 2006). In our case, no premedication prior or during endoscopy has been administered. It has been proposed that rapid gastric dilatation, stress and discomfort during endoscopy may result in changes in autonomic nervous system, precipitating to TGA (Hayashi et al., 2000). In conclusion, TGA may be a rare side effect of upper gastrointestinal endoscopy and endoscopists' awareness of this possible adverse event is warranted, even in upper gastrointestinal endoscopy without premedication.

**Ethical approval:** Informed consent was obtained from the patient and it is available upon request

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