

## Analysis of the Patient Anxiety to Upper Gastrointestinal Endoscopy

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### ABSTRACT

**Purpose:** Patients feel anxiety to gastroscopy. By removing such an adverse feeling, the patient can receive gastroscopy smoothly. We analyzed the cause and the level of the patients' anxiety to gastroscopy, and examined the necessity of the strategy for such a problem.

**Methods:** The subjects 24 were all outpatients who underwent gastroscopy at the Kumagaya Geka Hospital from January through April 2005. We investigated by interviewing the indication for gastroscopy, and the cause as well as the change of patient anxiety before and after gastroscopy. The systolic blood pressure (SBP) of the patient was measured before and after gastroscopy and compared with the values when arriving at the hospital.

**Results:** Patients' indications for gastroscopy are listed in Table 1. Main reasons for anxiety to gastroscopy are shown in Table 2. The anxiety evaluated by the face scale score increased by visiting the hospital (from  $3.08 \pm 0.83$  to  $3.58 \pm 0.88$ ) ( $P=0.0011$ ) but improved after gastroscopy ( $2.42 \pm 1.21$ ) ( $P=0.001$ ). The systolic blood pressures before gastroscopy ( $146.3 \pm 28.3$  mmHg) was significantly higher than one at visiting the hospital ( $129.5 \pm 23.5$  mmHg) ( $P=0.0006$ ), and not improved promptly after gastroscopy ( $142.5 \pm 25.4$  mmHg) ( $P=0.2727$ ).

**Conclusions:** Since the patients' anxiety to gastroscopy and the systolic blood pressure increased before and during gastroscopy, it is important to develop a strategy to minimize anxiety during gastroscopy by some measures and enough consideration. (Jikeikai Med J 2006 ; 53 : 1-5)

**Key words:** gastroscopy, patient anxiety, systolic blood pressure

### INTRODUCTION

Recently, upper gastrointestinal endoscopy (gastroscopy) has become a popular procedure that can be performed safely. The caliber of the gastroscope has decreased, and the maneuverability has improved. Therefore, gastroscopy has become much easier to perform. However, it is not a comfortable procedure for the patient. Naturally, the patient feels anxiety to gastroscopy. By removing such an adverse feeling, the patient can receive gastroscopy smoothly, and the endoscopist can perform gastroscopy without undue tension<sup>1</sup>. In many hospitals, use of the intra-

venous sedative after throat anesthesia has improved tolerance to gastroscopy. Pharmacotherapy can achieve adequate control of patients' anxiety during gastroscopy examination. However, the patients' anxiety to gastroscopy has not yet been fully investigated today.

In this study, we analyzed the cause and the level of the patients' anxiety to gastroscopy with the face scale score and the systolic blood pressure and examined the necessity of strategy for such a problem.

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## PATIENTS AND METHODS

The subjects 24 were all outpatients to whom I had performed gastroscopy at the Digestive Endoscopy Service, Kumagaya Geka Hospital on Wednesday from January 2005 through April 2005.

The age of the patients was  $64.5 \pm 16.7$  years, and 8 of them were women. The number of previous gastroscopy was  $3.71 \pm 2.39$  times.

The patients who underwent endoscopy for the first time were six.

In this hospital, basically, neither the sedative nor the antispasmodic (butyl scopolamine bromide or glucagon) to inhibit digestive motility had been used as premedications for gastroscopy, due to hesitation for possible decrease in the cardiopulmonary function.

We investigated by interviewing the patient characteristics, the indication for gastroscopy, and the causes as well as changes in patients' anxiety before and after gastroscopy. The patient anxiety level was evaluated by the face scale score (Fig. 1)<sup>2-4</sup>. The systolic blood pressure of the patient was measured before and after gastroscopy and compared with the values when arriving at the hospital. The Student's paired *t*-tests were used for statistical analysis. Differences with a *p* values less than 0.05 were considered significant, and data were presented as a mean  $\pm$  standard deviation.

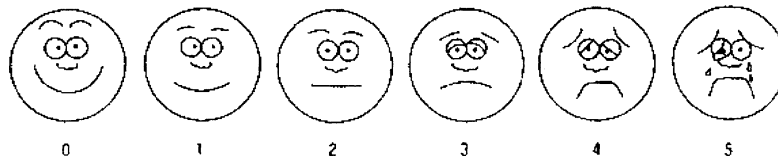


Fig. 1. Face scale score

0: No anxiety at all, 1: Little anxiety, 2: Slight anxiety, 3: Moderate anxiety  
4: Considerable anxiety, 5: Intolerable anxiety

Table 1. Patients' indication for gastroscopy

Indication	Number of patients
Epigastralgia	9 (4)
Cancer screening	8
Appetite loss	3 (1)
Heartburn and/or back pain	3 (1)
Observation for gastric cancer	1

( ): Patients who underwent endoscopy for the first time

## RESULTS

Patients' indications for gastroscopy consisted of epigastralgia in 9, secondary medical examination in 8, appetite loss in 3, heartburn and back pain in 3 and observation for gastric cancer in one patient (Table 1).

Main reasons for anxiety to gastroscopy consisted of gastroscopy itself in 17, the state of disease in 5 patients, while the other two patients were anxiety free. Moreover main reasons for anxiety of the patients who underwent endoscopy for the first time consisted of gastroscopy itself in all (Table 2).

The anxiety evaluated by the face scale score increased by visiting the hospital (from  $3.08 \pm 0.83$  to  $3.58 \pm 0.88$ ) ( $P=0.0011$ ) but improved after gastroscopy ( $2.42 \pm 1.21$ ) ( $P=0.001$ ) (Fig. 2).

The systolic blood pressures before gastroscopy ( $146.3 \pm 28.3$  mmHg) was significantly higher than one at visiting the hospital ( $129.5 \pm 23.5$  mmHg) ( $P=0.0006$ ), and not improved promptly after gastroscopy ( $142.5 \pm 25.4$  mmHg) ( $P=0.2727$ ) (Fig. 3).

## DISCUSSION

It is well-known that the patient scheduled for gastroscopy is often anxious and frightened<sup>5</sup>. High levels of anxiety may result in more difficulty and

Table 2. Main reasons for anxiety to gastroscopy

Main anxiety	Number of patients
Procedure itself	17 (6)
State of disease	5
Anxiety free	2

( ): Patients who underwent endoscopy for the first time



Fig. 2. Changes in anxiety level

The anxiety evaluated by the face scale score increased by visiting the hospital (from  $3.08 \pm 0.83$  to  $3.58 \pm 0.88$ ) but improved after gastroscopy ( $2.42 \pm 1.21$ ) (\*  $P = 0.0011$ , \*\*  $P = 0.001$ ).



Fig. 3. Changes in systolic blood pressure

The systolic blood pressures before gastroscopy ( $146.3 \pm 28.3$  mmHg) was significantly higher than one at visiting the hospital ( $129.5 \pm 23.5$  mmHg) (\*  $P = 0.0006$ ), and not improved promptly after gastroscopy ( $142.5 \pm 25.4$  mmHg) (\*\*  $P = 0.2727$ ).

painful procedures.

The benefit of the use of sedatives as premedication for gastroscopy is to reduce patient anxiety. On the other hand, the risk of cardiopulmonary hypoactivity is pointed out in elderly patients<sup>6-9</sup>. Therefore, the non-pharmacological and non-invasive interventions to reduce the patient anxiety are necessary.

In this study, the patients had more anxiety to the procedure itself than the state of disease. Nevertheless, the patients' anxiety may be influenced by vari-

ables such as their experience with gastroscopy, symptoms of disease and patient characteristics.

It is reported that the systolic blood pressure increase by the tension caused by anxiety<sup>10</sup>. And our results in this study proved it. Moreover, the systolic blood pressure did not improve promptly after gastroscopy because of response through the endocrine and sympathetic nerve system after the mental stress decreases<sup>11</sup>.

In this study, main reasons for anxiety of the

patients who underwent endoscopy for the first time consisted of gastroscopy itself in all (Table 2). There is a report emphasizing the importance of detailed written and videotaped information about the safety and comfort of gastroscopy, especially for those who undergo endoscopy for the first time, which reduce anxiety and allow better execution of gastroscopy<sup>12</sup>. The patients' anxiety has increased before and during gastroscopy as judged by the change of the face scale score and the systolic blood pressure.

There is a report that the visual analog scale such as face scale score was appropriate as the objective indicator of the anxiety, and we adopted it in this research<sup>13</sup>.

It is necessary to offer the optimal soothing environment to reduce the patients' anxieties in the waiting room and during gastroscopy. Moreover it was reported that the holistic, alternative and complementary approach, lavender odorants<sup>14</sup>, music intervention (Mozart's tune etc.)<sup>15,16</sup>, and optimal soothing environment were associated with reduced mental stress and reported to be effective in improving the hospital environment<sup>17,18</sup>.

In conclusion, the patients' anxiety to gastroscopy and the systolic blood pressure increased before and during gastroscopy, for which a strategy to minimize anxiety and pain during gastroscopy by some measures and enough consideration seems important to improve their compliance.

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