Postoperative Conversion Disorder in Elderly Oral Cancer Patient

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Abstract

Conversion disorder is a condition in which psychological stress in response to difficult situations manifests as physical symptoms. Here, we report a case of postoperative coma due to conversion disorder in an elderly oral cancer patient. An 82-year-old woman was referred to Tokyo Dental College Chiba Hospital with a mass lesion on the tongue. A biopsy revealed a well-differentiated squamous cell carcinoma. Surgical treatment was performed for the tongue carcinoma and tracheotomy for management of the airway. On postoperative day 5, the patient exhibited loss of consciousness (Glasgow Coma Scale: E1, VT, M1; Japan Coma Scale: III-300). The patient’s vital signs were all normal, as were the results of a full blood count, brain-CT, MRI, and MRA. Only the arm dropping test was positive. Therefore, the cause of the coma was diagnosed as conversion disorder. Seven hours later, the patient showed a complete recovery.

Key words: Conversion disorder — Postoperative — Oral cancer

Introduction

The number of elderly patients with oral cancer is anticipated to increase as the population continues to age. Careful perioperative management of elderly patients is critical, as there may be other underlying problems to take into account, including possible disorientation within their new environment. Conversion disorder is a condition in which psychological stress in response to difficult situations manifests as physical symptoms. This diagnosis requires one or more unexplained physical symptoms involving the musculature and sensory systems, such as paradoxical paralyses, seizures, sensory deficits, and pain.

Here, we report a case of conversion disorder in the form of a postoperative coma in an elderly patient with oral cancer.
Case Presentation

An 82-year-old woman was referred to our hospital with a mass lesion on the tongue. Palpation revealed an exophytic, irregular-shaped, painless mass located on the tongue margin. A biopsy revealed a well-differentiated squamous cell carcinoma. The results of CT, MRI, and FDG-PET indicated a clinical diagnosis of tongue cancer with metastasis to the lymph node of the neck (T3N1M0). The patient’s medical history was unremarkable. In November 2008, partial resection of the left side of the tongue was performed, followed by left supraomohyoid neck dissection and reconstruction with local platysma flap. The patient was unpremedicated. After pre-oxygenation, general anesthesia was induced with 100 μg fentanyl and 30 mg propofol. Intubation was carried out after accomplishing muscle paralysis with 4 mg vecuronium. General anesthesia was maintained with oxygen and an incremental increase in sevoflurane from 0.8 to 2%. The operation time was 407 minutes and amount of blood loss approximately 400 ml (Fig. 1). The intubation tube was left in postoperatively to prevent obstruction of the aerodigestive tract by edema. A tracheotomy was performed the next day for long term management of the airway. On postoperative day 2, the patient exhibited mild delirium and removed the airway tube herself. On postoperative day 5, the patient lost consciousness (Glasgow Coma Scale, GCS: E1, VT, M1; Japan Coma Scale, JCS: III-300). She did not react to her name and her light reflexes decreased. Her vital signs were all normal, as were heart rate, depth of respiration, oxygen saturation, full blood count, urea and electrophoresis, CK enzymes, liver enzymes, and arterial blood gases (Table 1). Her pupils were equal and mildly reactive. At first, brain infarction was suspected and a neurosurgeon consulted. The patient immediately underwent brain CT, MRI, and MRA, the results of which were all normal. Subsequently, the patient was taken to the Department of Cardiology, where she underwent cardiac ultrasonography, electrocardiogram, and a full blood count again.

Fig. 1 Partial resection of left side of tongue, left supraomohyoid neck dissection, and reconstruction with local platysma flap

(a) Incision line of neck dissection, (b) Left side of supraomohyoid neck dissection, (c) Tongue left side carcinoma, (d) Left side tongue resection, (e) Reconstruction using local platysma flap, (f) Reconstruction of left side tongue and oral floor.
However, the results of all examinations were normal; only the arm drop test was positive. Therefore, the diagnosis was a coma secondary to conversion disorder. Four hours later, the patient began to gradually recover (GCS: E2, VT, M5; JCS: II-30). After 7 hours, the patient showed a complete recovery (Fig. 2). On postoperative day 27, she was discharged and allowed to go home but with psychiatric follow-up for dementia.

### Discussion

According to the DSM-IV criteria, conversion disorder is characterized by (1) one or more symptoms affecting voluntary motor or sensory function; (2) resemblance to neurological or medical disease; (3) involvement of psychological factors; and (4) unintentional, unfeigned symptoms.

This condition, previously known as hysteria, or hysterical paralysis, occurs rarely, with an incidence of 11–300 cases per 100,000 people. Symptoms may begin at any age, but usually occur during adolescence or early adulthood, and are seen more frequently in women than in men. Devinsky et al. reported that conversion disorder may also be more common in people with less formal education, those from minority ethnic groups, those from rural areas, or those from the lower socioeconomic strata. The risk factors for this disease include female sex, lower educational level, physical or sexual abuse, emotional trauma, pre-existing psychopathology, and a history of serious medical illness. Furthermore, Khu et al. noted that the etiology for conversion disorder was unclear, but suggested that it was caused by severe stress, emotional conflict, or an associated psychiatric disorder. Nakagawa et al. speculated that conversion disorder developed due to lack of communication and excessive stress. In the

| Table 1 Blood examination results |
|-----------------------------------|
|                                    |
| (a) | (b) | (c) |
| SpO2 (%) | 98 | 100 (O2: 2 liter/min) | 100 (O2: 2 liter/min) |
| BP (mmHg) | 150/70 | 108/61 | 150/84 |
| Arterial Blood Gases |
| pH | 7.459 | 7.467 | 7.462 |
| PaCO2 | 40.6 | 37.8 | 38.3 |
| PaO2 | 99.0 | 227.1 (O2: 2 liter/min) | 218.1 (O2: 2 liter/min) |
| Blood examination |
| WBC (μl) | 6,000 | 9,800 | 7,700 |
| RBC (×10^6 μl) | 4.3 | 4.0 | 4.3 |
| PLT (×10^9 μl) | 21.9 | 17.1 | 16.3 |
| Na (mEq) | 137 | 138 | 136 |
| K (mEq) | 4.3 | 3.4 | 3.5 |
| Cl (mEq) | 103 | 100 | 102 |
| AST (IU/liter) | 18 | 22 | 20 |
| ALT (IU/liter) | 14 | 19 | 16 |
| CK (IU/liter) | 55 | 64 | 73 |
| BS (mg/dl) | 170 | 248 | 157 |

Blood examination results were within normal range. (a) Preoperative blood examination, (b) Blood examination performed at time of diagnosis of unconsciousness, (c) Blood examination performed at time of recovery of consciousness.
present case, the patient was an elderly woman who exhibited postoperative delirium. We believe that the conversion disorder in this patient may have been caused by excessive stress due to the operation and tracheotomy.

Henry and Woodruff and Rosenberg suggested that forced downward deviation of the eyes may be used as a useful diagnostic sign in patients with coma by conversion disorder. However, this was not observed in the present case, nor that previously reported by Maddock et al. Generally, Hoover’s signs — paradoxical paralyses, seizures, sensory deficits, or pain — are effective for diagnosing conversion disorder. However, in the case of coma by conversion disorder, this method is not available. On the other hand, the arm drop test can be used to assist in distinguishing coma from coma by conversion disorder. This disease is recoverable, but needs to be monitored carefully. Judge and Spielman noted the importance of the surgeon bearing in mind the possibility of paralysis by conversion disorder if unnecessary procedures are to be avoided. Nakagawa et al. suggested that conversion disorder should be considered in
cases with unexplainable physical symptoms after all other possible causes have been eliminated, especially those requiring prompt intervention.

Conversion disorder cases involving head and neck surgery are very rare. However, a tracheotomy or oral region surgery may cause various types of dysfunction. One such type of dysfunction is dysphasia, which impedes communication, which in turn may cause conversion disorder, as described above. All of this points to the need for careful planning of postoperative management.

**Conclusion**

In summary, we have reported a rare case of postoperative conversion disorder in an elderly oral cancer patient. Such cases are expected to increase with the aging of the population. This indicates the need for careful planning of treatment in elderly oral cancer patients.

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