

CASE REPORT

Total palliative care for a patient with multiple cerebral infarctions that occurred repeatedly in association with gastric cancer (Trousseau's syndrome)

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ABSTRACT

Objective: Malignancy-related thromboembolism, also referred to as Trousseau's syndrome, can present as acute cerebral infarction, nonbacterial thrombotic endocarditis (NBTE), and migratory thrombophlebitis. Therefore, many physical, neurological, and psychological symptoms associated with Trousseau's syndrome may occur in the clinical course.

Method: To illustrate this, we report a case of a male patient in his 50s with carcinomatous peritonitis caused by gastric cancer, with multiple cerebral infarctions that developed during disease progression. The patient was admitted to our hospital for the treatment of side effects of chemotherapy, although he strongly hoped to go home as soon as possible. In addition to making social supports plans, we were required to perform intensive total palliative care, because of his physical pain, general fatigue, anorexia, abdominal and neck pain, and psychological issues (insomnia, delirium, depression, suicidal thoughts, self-mutilation, panic attacks, agoraphobia, fear of death, and feelings of hopelessness).

Results: To the best of our knowledge, based on the literature search, this is the first reported case of Trousseau's syndrome described in the context of total palliative care, especially psychological care.

Significance of results: We propose that neurological symptoms of Trousseau's syndrome cause these extensive mental disorders. Furthermore, because of the prognosis of Trousseau's syndrome, we should utilize our expertise fulfill the patient's wishes.

KEYWORDS: Trousseau's syndrome, Cerebral infarction, Total palliative care, Palliative care team (PCT), Mental disorders

INTRODUCTION

In 1865, Armand Trousseau reported a patient with gastric cancer who had multiple cerebral infarctions

and pulmonary embolism caused by thrombophlebitis (Trousseau, 1865). As its etiological factor, chronic disseminated intravascular coagulopathy (DIC), associated with microangiopathy and arterial embolism, was indicated (Sack et al., 1977). Since then, it has been recognized that patients with cancer often, but not always, show abnormalities in the coagulation-fibrinolysis system, and this disorder is

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termed “Trousseau’s syndrome” (Sack et al., 1977; Walsh-McMonagle & Green, 1997; Zuger et al., 1997; Kikui & Yanagimoto, 2006; Varki, 2007; Gunn et al., 2009). A full review of this syndrome was performed by Varki in 2007.

Our hospital (Kamiiida Daiichi General Hospital) is located in metropolitan Nagoya in Central Japan and is a general hospital with 222 beds. We established a palliative care team (PCT) that consisted of two doctors, nurses, a pharmacist, a clinical psychologist, an administrative dietitian, a dental hygienist, medical social workers (MSW), and occupational therapists.

In the current article, we report a case of a male patient with gastric cancer with peritoneal dissemination in whom excessive blood coagulation may have led to repeated multiple cerebral infarctions, based on whose wishes our PCT was requested to perform holistic palliative care. We discuss important points regarding palliative care for Trousseau’s syndrome based on our clinical experience with this patient.

CASE REPORT

The patient presented in the this article was a man >55 years (we are not stating his exact age, to assure anonymity) who lived alone. After divorcing, he had remained single. His parents had died and he had no children.

Present Illness

In 200X, he underwent total gastrectomy for advanced gastric cancer, which was pathologically staged as T3N2M0, stage IIIB. He had a satisfactory postoperative course, and was discharged 3 weeks after the surgery. Tegafur, gimeracil, and oteracil potassium (TS-1TM) were used as adjuvant care during the first year after surgery, followed by tegafur and uracil (UFTTM) thereafter, which was orally administered. Two years after surgery, the patient became constipated because of rectal stenosis caused by the disseminated disease, and received three courses of TS-1/cisplatin therapy. Unfortunately, he did not respond well to this therapy and paclitaxel was administered as a second line. After completion of five courses of paclitaxel, adverse symptoms including anorexia, numbness of the fingers, and diarrhea were exacerbated. Finally, he was admitted to our hospital in April 200X + 3.

Clinical Course After Admission

After admission, fluid replacement was performed. As the patient strongly expressed a desire for home care after symptom relief, the PCT was requested to

perform palliative care 3 days after admission, considering the introduction of nursing insurance. Subsequently, treatment was continued by the PCT and Department of Surgery. As nurses in the ward reported the patient’s nocturnal wandering, urination outside of the socially acceptable place, and other abnormal behaviors, treatment by a psychiatrist belonging to the PCT was initiated. The psychiatrist concluded that the patient had developed delirium related to short-acting hypnotics (zopiclone and/or zolpidem), that had been prescribed for the treatment of insomnia. Subsequently, they were discontinued, leading to the disappearance of the patient’s abnormal behaviors at night, and his consciousness returned to normal, up until the last few days. His appetite gradually improved, however as the insomnia was also noted, an intermediate-acting anxiolytic was administered, and his sleep was normalized thereafter.

Seven days after the aforementioned therapy was administered, incomplete paralysis of the right upper limb was noticed. Cranial magnetic resonance imaging (MRI) revealed multiple acute infarctions of the brain scattered in the bilateral cerebral cortex, white matter, and bilateral cerebella on diffusion-weighted images (Fig. 1). A neurologist was requested to treat acute cerebral infarction.

As the MRI findings suggested the high possibilities of Trousseau’s syndrome, hematological screening was performed. The thrombin-antithrombin III complex (TAT), fibrinogen-decomposing product (FDP), and D-dimer levels were 38.1 ng/mL, 85.0 μ g/mL, and 28.7 μ g/mL, all of which were very high. These findings were consistent with Trousseau’s syndrome. There were no abnormal findings on cranial magnetic resonance angiography (MRA) or on cervical or cardiac ultrasonography (US).

Cervical pain appeared 12 days after admission. Cervical radiographs showed deformity of the fourth cervical vertebra. Considering the possibility of bone metastasis, oral administration of celecoxib and oxycodone was started. Subsequently, the patient also complained of abdominal pain. The dose of oxycodone was increased in accordance with the symptoms. To reduce sudden pain, an oxycodone immediate-effect preparation was employed.

When reviewing Trousseau’s syndrome (Cestari et al., 2004; Yamazaki & Uchiyama, 2006), this patient’s survival was estimated to be a few months. Based on this, preparations for discharge were expedited in cooperation with the PCT members so that he could spend time at home, considering his wishes for home care. An MSW introduced nursing insurance, selected a care manager, and devised a plan. An occupational therapist was responsible for rehabilitation such as left-hand training regarding daily

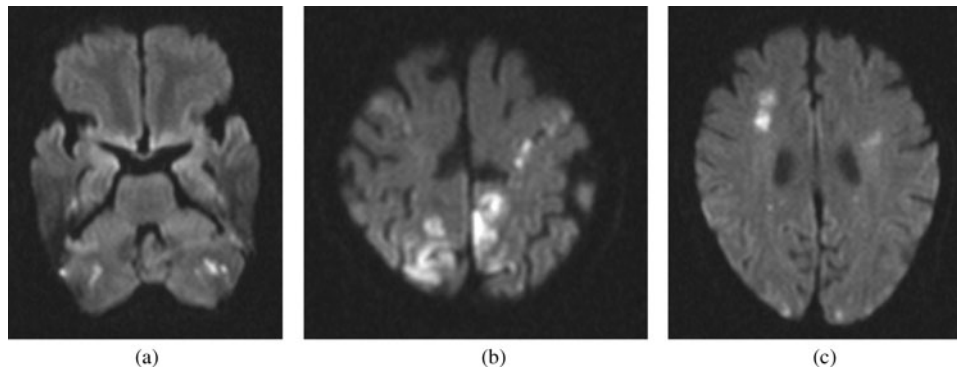


Fig. 1. Diffusion-weighted MRI demonstrated that multiple cerebral infarctions were scattered in the bilateral cerebral cortex (b), white matter (c), and bilateral cerebella (a).

activities and gait. A pharmacist conducted training for the self-management of opioids, including rescue opioids. An administrative dietitian devised the dietary form and fork usage.

However, although cervical MRI was scheduled, it was not able to be performed, because of the patient's claustrophobia. Furthermore, he emphasized that sudden anxiety and agitation both appeared repeatedly. He seemed to be shocked by the appearance of both cervical and abdominal pain following paralysis of the right upper limb. He uttered pessimistic words regarding the future. Based on these and other clinical symptoms, diagnoses of panic disorder with agoraphobia and major depressive disorder were made, although the treatment-related shortening of the symptom duration did not meet the diagnostic criteria (American Psychiatric Association, 2000). In Japan, only two selective serotonin reuptake inhibitors (SSRI) have been applied to treat panic disorder. However, these SSRIs were not selected, because nausea is a side effect. In such cases, it is recommended that antidepressants without cytochrome (CY)P450- or P-glycoprotein-mediated drug interactions (citalopram and mirtazapine) be administered to cancer patients (Laird & Mitchell, 2005). Drug therapy was performed with mirtazapine, which is classified as a noradrenergic and specific serotonergic antidepressant (NaSSA), and was expected to promote appetite and improve sleep (Croom et al., 2009). After that, the pain subsided, leading to the disappearance of panic attacks and improved sleep and appetite.

Approximately 4 weeks after the admission, when a nursing insurance service plan was prepared, the MSW, occupational therapist, care manager, and patient visited his home to finally confirm whether he could live alone. The staff considered that utilization of the nursing insurance service and adequate control of opioids for sudden pain might make it possible for him to live alone. Based on this, the day of

discharge was established, and training for the self-management of rescue opioids, physical daily activity training, and adjustment of the details for utilization of the nursing insurance service were scheduled before discharge. The patient was satisfied with this plan. However, despite his wishes for home care, he complained of loneliness. The staff considered it necessary to provide supportive mental care, and counseling by a clinical psychologist was started in a private room (once or twice a week). The clinical psychologist's intervention reduced the patient's anxiety.

The patient complained of vision disturbance in the afternoon the day before discharge. Cranial CT revealed a large infarction involving the left parietal to occipital lobes, and discharge was postponed. The treatment of acute cerebral infarction was initiated again. Complete paralysis of the right upper limb, incomplete paralysis of the lower limbs, and right hemianopia appeared the following day. The patient was shocked, and said: "Today, I could have returned to home; I don't know what I should do." Anorexia was noted again. The patient stated that he wished to die, and self-mutilation activities, such as hitting his head against the wall, were observed. After 1 week, left hemiparalysis appeared, making gait impossible. Furthermore, the visual field was completely affected. The patient complained of vision disorder, and said he wished to die. His consciousness level reduced the following day. After 4 days, the patient died.

DISCUSSION

The characteristics and issues of the present case are presented as follows:

1. The patient had strongly wished for home care until death.

2. Trousseau's syndrome was noted, and cerebral infarction repeatedly occurred. The prognosis was generally poor according to the literature review.
3. The patient had lived alone, and it was necessary to establish a social support plan and perform physical function training to enable discharge.
4. The cerebral infarction influenced physical functions and neurological symptoms. These physical symptoms affected the patient's mental state, leading to various behavioral and psychological symptoms.

Therefore, in the present case, it was necessary to perform intensive total palliative care in a short period of time. The PCT members were performing their duties while respecting the patient's opinions and the consensus treatment directions were established through the joint meetings of PCT members. The patient's condition improved gradually. However, complications caused by the cerebral infarction days before discharge resulted in the patient's death.

In our investigation, we found only a few reports referring to palliative care (Gunn et al., 2009), and no report on total palliative care (psychological care in particular), for Trousseau's syndrome associated with repeated multiple cerebral infarctions, conducted by a PCT. This is the first case report, and we emphasize following points:

1. As the patient's initial general condition was relatively favorable, this case was inconsistent with the prognosis of Trousseau's syndrome described in the literature. Considering abnormalities in the coagulation-fibrinolysis system, more prompt management may have been required.
2. As the patient expressed desire for home care, treatment that accommodated the patient's wish was chosen. Therefore, anti-DIC treatment was not appropriate, and heparin or heparinoid therapy may have been necessary (Sack et al., 1977; Walsh-McMonagle & Green, 1997; Zuger et al., 1997; Gunn et al., 2009). If this therapy had been administered, it might have prevented recurrent cerebral infarction, making it possible for the patient to live at home. On the other hand, the administration of heparin may induce hemorrhagic cerebral infarction.
3. Various physical symptoms related to Trousseau's syndrome may cause diverse psychological symptoms. It may be important to control not only physical symptoms but also psychological ones. To the best of our knowledge, based on

the literature search, this is the first reported case of Trousseau's syndrome described the regard to psychological symptoms and/or mental disorders.

4. The possibility of hypercoagulability in cancer patients must be considered. For example, deep vein thrombosis, cerebral venous sinus thrombosis, nonbacterial thrombotic endocarditis (NBTE), cerebral infarction, or pulmonary embolism may occur (Sack et al., 1977; Gunn et al., 2009). When symptoms related to these diseases are observed, hematological test for coagulation-fibrinolysis system should be conducted (Yamazaki & Uchiyama, 2006).

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REFERENCES

- American Psychiatric Association. (2000). *Diagnosis and Statistical Manual of Mental Disorders, 4th ed., Text Revision*. Washington, D.C.: American Psychiatric Association.
- Cestari, D.M., Weine, D.M., Panageas, K.S., et al. (2004). Stroke in patients with cancer; incidence and etiology. *Neurology*, *62*, 2025–2030.
- Croom, K.F., Perry, C.M. & Plosker, G.L. (2009). Miltazapine –A review of its use in major depression and other psychiatric disorders. *CNS Drugs*, *23*, 427–452.
- Gunn, S.K., Farolino, D. & McDonald, A.A. (2009). A case of warfarin-associated venous limb gangrene: Implications of anticoagulation in a palliative care setting. *Journal of Palliative Medicine*, *12*, 269–272.
- Kikui, S. & Yanagimoto, M. (2006). A patient with cholangiocarcinoma-related Trousseau's syndrome [in Japanese]. *Shinkei Naika*, *64*, 276–279.
- Laird, B. & Mitchell, J. (2005). The assessment and management of depression in the terminally ill. *European Journal of Palliative Care*, *12*, 101–104.
- Sack, G.H., Levin, J. & Bell, W.R. (1977). Trousseau's syndrome and other manifestations of chronic disseminated coagulopathy in patients with neoplasms: Clinical, pathophysiologic, and therapeutic features. *Medicine (Baltimore)*, *56*, 1–37.
- Trousseau, A. (1865). Phlegmasia alba dolens. Lectures on clinical medicine, delivered at the Hotel-Dieu, Paris, *5*, 281–332.
- Varki, A. (2007). Trousseau's syndrome: multiple definitions and multiple mechanisms. *Blood*, *110*, 1723–1729.
- Walsh-McMonagle, D. & Green, D. (1997). Low-molecular-weight heparin in the management of Trousseau's syndrome. *Cancer*, *80*, 649–655.
- Yamazaki, M. & Uchiyama, S. (2006). Hematological abnormalities (in Japanese). *Nihon Rinsho*, *64*, 204–208.
- Zuger, M., Demarmels, B.F. & Wuillemin, W.A. (1997). Subcutaneous low-molecular-weight heparin for treatment of Trousseau's syndrome. *Annals of Hematology*, *75*, 165–167.