Heparin-Induced Thrombocytopenia Post Reconstructive Surgery

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ABSTRACT

Heparin-induced thrombocytopenia (HIT) is a rare immune-mediated complication of heparin. The diagnosis of HIT is considered when patients exposed to heparin present with thrombocytopenia and thrombosis. We report a case of HIT after reconstruction surgery of head and neck cancer, successfully treated with argatroban, and discuss how to diagnose and treat this severe condition.

INTRODUCTION

Heparin-induced thrombocytopenia type II (HIT II) is a rare immune-mediated complication of heparin. The diagnosis of HIT is considered when patients exposed to heparin present with thrombocytopenia and thrombosis. We report a case of HIT after reconstruction surgery of head and neck cancer, successfully treated with argatroban, and discuss how to diagnose and treat this severe condition.

CASE PRESENTATION

In November 2008, a 75-year-old man was referred to our hospital complaining of tongue pain. A small tumor of 3cm x 3cm was found on the right side of tongue (Fig 1). The histologic diagnosis made from a biopsy specimen was squamous cell carcinoma. Head and neck CT revealed a lesion suggesting a lymph node metastasis (Fig 2). The patient had stage III in the TNM classification. The preoperative platelet count was 225,000/µL (Table 1). The patient’s history did not reveal any previous exposure to heparin.

The patient underwent right hemiglossectomy, right suprathyroid neck dissection and reconstruction with left free forearm flap. Following surgery, 60-day period of enoxaparin E1 was administered for 7 days and 5,000 units of heparin for 7 days to prevent thrombosis. As the patient was commenced on antiplatelet agents and statistically surveyed in the department of medicine.

On the morning of postoperative day 7, the patient’s platelet count had suddenly dropped to 54,000/µL from 190,000/µL, indicative severe thrombocytopenia (Table 2). This afternoon, the color of the tongue flap was altered (Fig 3). Following a series of test, we suspected HIT and checked an anti-heparin antibody assay. The “4T”-test produced a maximum score of 8, highly suggestive of HIT (Table 3). After heparin is stopped, the patient underwent second surgery.

The postoperative day, the patient’s platelet count had suddenly dropped (Table 4). We continued argatroban and the patient was commenced on oral anticoagulation with warfarin until the time of discharge (Fig 6).

DISCUSSION

It’s important to keep a blood flow and prevent of thrombus of pedicle flap after reconstructive surgery. The anticoagulant, the antiplatelet and the vasodilator are used in many cases. The heparin is the most commonly used drugs to prevent thrombus but it has hemorrhage and thrombosis of the side effect. HIT can be a cause of unexplained venous thrombosis or thrombocytopenia after reconstruction surgery of head and neck cancer.

CONCLUSIONS

Heparin-induced thrombocytopenia is a severe complication of heparin. It is necessary to be alert for HIT in the presence of unexplained venous thrombosis or thrombocytopenia in patients receiving heparin therapy. It can be the cause of severe thrombotic events. Therefore, HIT may also be the cause of false flap as well as pedicled flap failure and should be considered early on when venous flap congestion is observed postoperatively. It is necessary to be able to adjust the dose of heparin in the presence of unexplained venous thrombosis or thrombocytopenia in patients receiving heparin therapy.

Table 1. Blood laboratory finding on preoperation

Table 2. Blood laboratory finding on postoperative day 7

Table 3. The 4T scoring system for the diagnosis of HIT

Table 4. The 4T scoring system for the diagnosis of HIT

Figure 1. A small tumor (3 cm x 3 cm) was found on the right side of tongue.

Figure 2. Head and neck CT revealed a lesion that it was a lymph node metastasis.

Figure 3. The color of the tongue flap was altered on postoperative day 7.

Figure 4. There were thrombus within the right internal jugular vein and external jugular vein.

Figure 5. This showed subcutaneous and cheek computed tomography. There was a thrombus vicinity in inferior vena cava (A). There was a thrombus in right jugular vein (B).

Figure 6. Platelet counts and key clinical events during hospitalization.