Non-traumatic Bilateral Orbital Subperiosteal Hematoma in a Person Who Attempted Suicide by Hanging

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Orbital subperiosteal hematomas are rare and most often result from facial trauma; however, occurrence of these hematomas due to non-traumatic causes is extremely rare. Herein, we present the case of a 38-year-old man who was transferred to our emergency department because he became comatose after attempting suicide by hanging. He underwent computed tomography (CT) of the head and neck. CT findings revealed a bilateral orbital subperiosteal hematoma. We then performed magnetic resonance imaging (MRI) of the head for definite diagnosis of hematoma.

There is no consensus regarding if this condition should be treated conservatively or surgically. Conservative management was selected for this patient because he was in deep coma. Some non-traumatic causes of orbital subperiosteal hematoma include weight lifting, coughing, vomiting, Valsalva maneuver, labor, and scuba diving. Sudden elevations in cranial pressure may be the mechanism underlying this condition. Although suicide attempt by hanging could have caused a sudden elevation in cranial pressure, this is the first report of the occurrence of this condition. Patients with orbital subperiosteal hematomas generally complain of blurred vision, eye pain, or exophthalmos. However, identifying this sign may be difficult in patients with disturbed consciousness.

Key words: orbital subperiosteal hematoma, suicide attempt by hanging

INTRODUCTION

Orbital subperiosteal hematomas are rare and most often result from facial trauma; however, occurrence of these hematomas due to non-traumatic causes is extremely rare [1, 2]. Herein, we report a case of bilateral orbital subperiosteal hematomas because of attempted suicide by hanging.

CASE REPORT

A 38-year-old man was transferred to our emergency department because he became deeply comatose (Glasgow Coma Scale 1-2-1) after attempting suicide by hanging. He presented with bilateral exophthalmos, conjunctival chemosis, hyposphagma and traces of rope at his neck (Fig. 1). He underwent computed tomography (CT) scan of the head and neck for the assessment of the hypoxic brain damage and cervical trauma. CT findings showed orbital hematomas caused by the accident (Fig. 2). We then performed magnetic resonance imaging (MRI) of the head for definite diagnosis. MRI findings showed well-circumscribed hematomas in the superior orbital subperiosteal spaces on both sides with no bone discontinuity or fracture (Fig. 3). This patient had no history of systemic diseases such as coagulopathy or bleeding disorders. He could not directly complain of any symptoms because of his deep coma; therefore, we decided to treat him with conservative management. Seven days after his admission, his consciousness improved as GCS 4-4-6. Eight days after his admission, MRI showed reduction in the hematomas in his orbital subperiosteal space (Fig. 4). Moreover, he had no eye symptoms. We continued treating him with conservative management. Seventy days after his admission, he was moved to a rehabilitation hospital because of his higher brain dysfunction.

DISCUSSION

Patients with orbital subperiosteal hematomas generally complain of blurred vision, eye pain, or exophthalmos [3]. Orbital subperiosteal hematomas are classified as traumatic or non-traumatic. Non-traumatic orbital subperiosteal hematomas are rare. Some causes of non-traumatic orbital subperiosteal hematomas include weight lifting, coughing, vomiting, Valsalva maneuver, labor, and scuba diving [1, 2]. Sudden elevations in cranial vevous pressure may cause the orbital subperiosteal vessels to collapse and result in hematomas in this space because of the weakness of adhesion between the orbital frontal bone and periorbita [3]. This could have been the mechanism underlying the development of hematomas in this case.

There is no consensus about how this condition should be treated. Observation, needle aspiration, and surgical evacuation have been reported as methods for management [4]. Small hematomas without impaired vision may spontaneously resolve. Intervention is recommended for cases of compressive optic neuropathy, progressive exophthalmos, suspicion of tumor,

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Fig. 1 Bilateral eye proptosis (left) and a trace of rope (right).

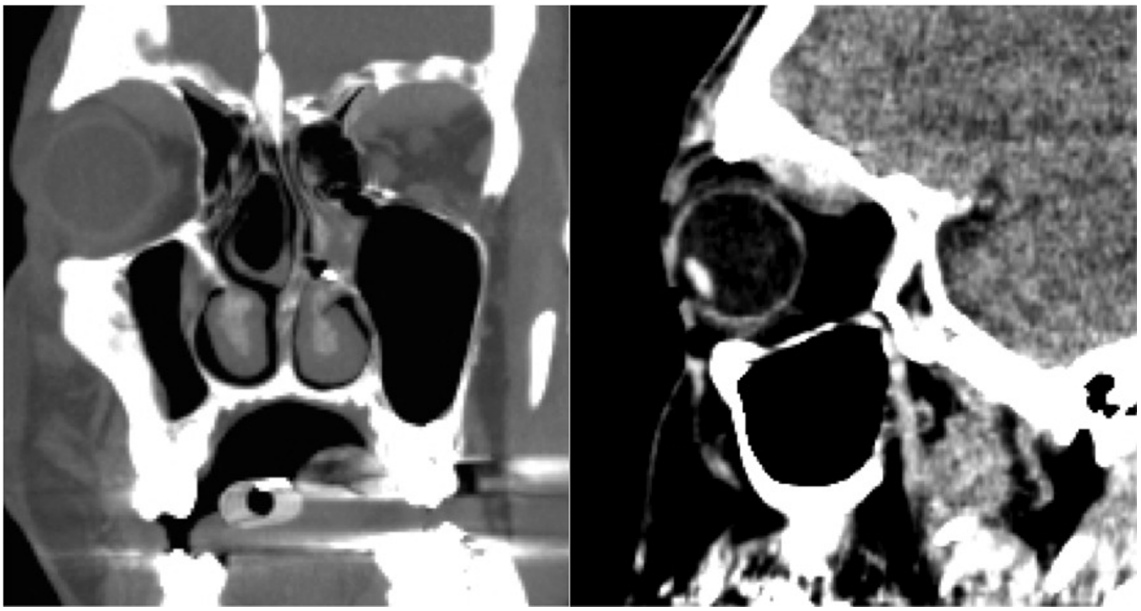

Fig. 2 Head CT scan
This head CT scan presented hematomas in bilateral orbital cavity.

or rebleed [4]. Needle aspiration is less invasive, but does not remove clots or stop active bleeding. Orbital exploration allows removal of coagulated blood, drain placement, and fracture repair [4]. Patients presenting with late symptoms generally have clotted blood with no ocular compromise and can be treated effectively using steroids [5].

Patients with disturbed consciousness have difficulty in complaining of any symptoms of orbital subperiosteal hematoma such as blurred vision or eye pain. In such cases, those signs of sudden elevations in cranial vevous pressure such as exophthalmos, conjunctival chemosis or hyposphagma can provide clues to the diagnosis of orbital subperiosteal hematoma. And furthermore, CT scan can help identify orbital subperiosteal hematoma in patients with disturbed consciousness. This is the first report of the occurrence of non-traumatic bilateral orbital subperiosteal hematoma after a suicide attempt by hanging. The findings of this case suggest that the other cases of suicide attempt by hanging may also develop bilateral orbital subperiosteal hematomas.

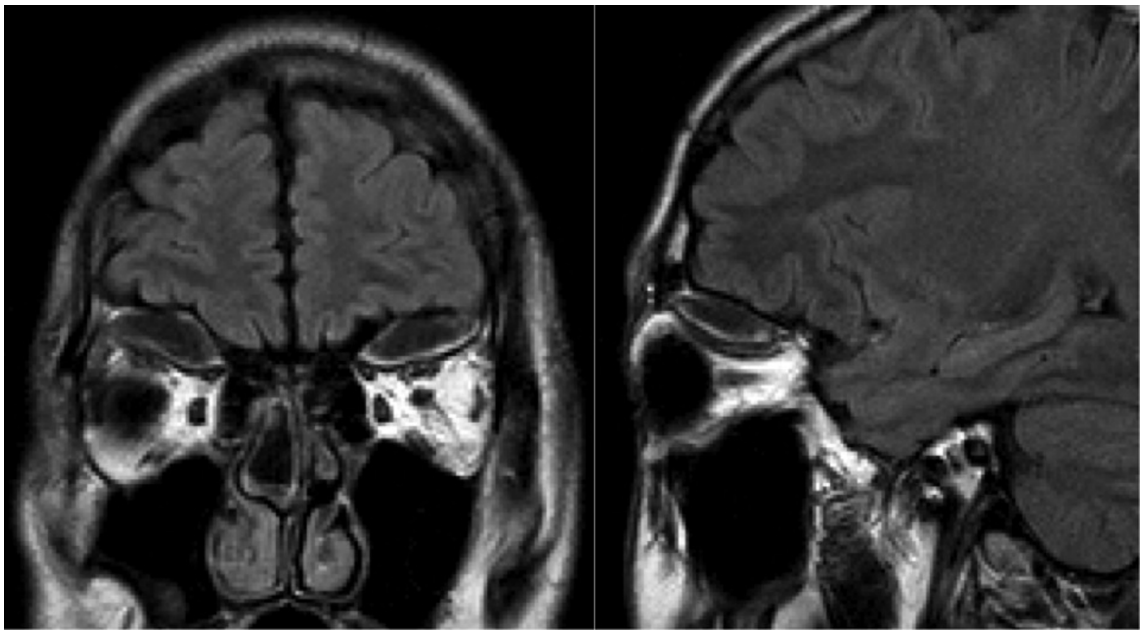

Fig. 3 MRI presented well-circumscribed hematomas in the bilateral superior orbital subperiosteal spaces with no bone discontinuity or fracture.

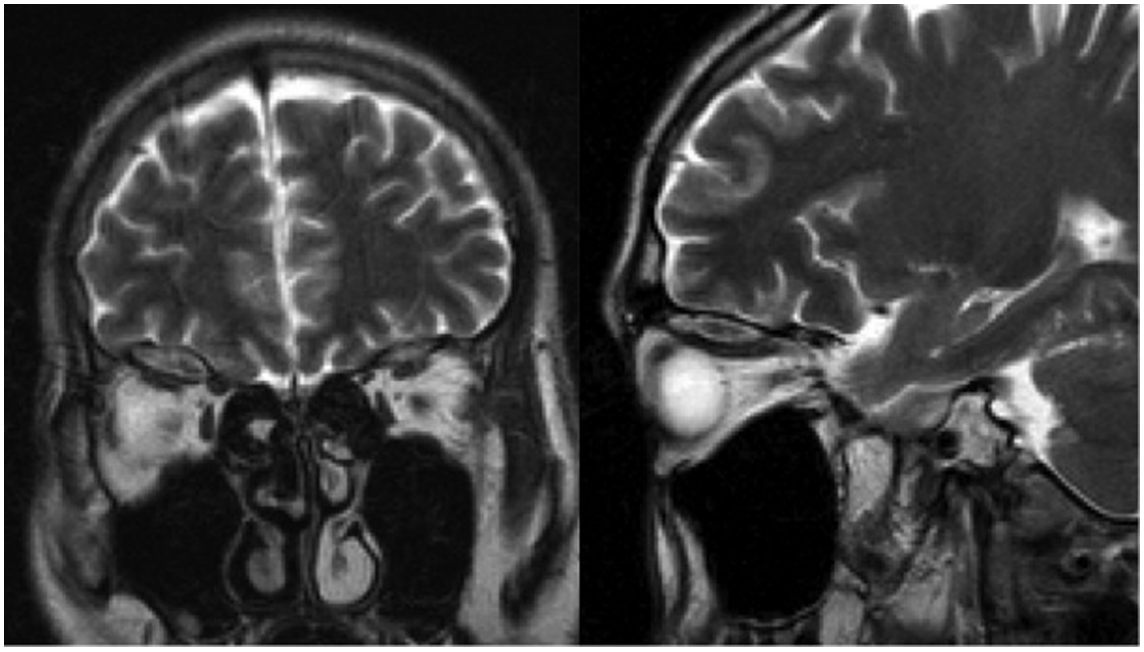

Fig. 4 Eight days after his admission, MRI presented reduced hematomas in his orbital subperiosteal space.

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