Formosan Journal of Surgery (2012) 45, 183–186

Available online at www.sciencedirect.com

SciVerse ScienceDirect

journal homepage: www.e-fjs.com

CASE REPORT

Glioblastoma multiforme hiding behind the intracerebral hematoma

Jen-Ho Tseng [a,b], Wen-Hsiung Lin [a,*]

[a] Department of Neurosurgery, Taipei City Hospital Ren-Ai Branch, Taipei, Taiwan
[b] Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei, Taiwan

Received 22 June 2011; received in revised form 15 August 2011; accepted 16 October 2011
Available online 29 August 2012

KEYWORDS
glioblastoma multiforme;
intracerebral hemorrhage;
stereotactic aspiration

Summary A previously healthy man experienced a headache and confusion for 3 weeks. A cranial computerized tomography (CT) scan showed a resolving lobar intracerebral hemorrhage (ICH) in the right frontal lobe. A stereotactic aspiration of the ICH was performed to relieve the mass, and biopsy was reported to only show hematoma. However, the patient continued to have a persistent headache and unsteady gait even 2 months after surgery. A further cranial CT scan revealed a hypodense parenchymal lesion involving the whole right frontal lobe, which was shown by magnetic resonance image as a heterogeneously enhanced and poorly circumscribed lesion extending into the mesial frontal and subcortical areas. Craniotomy was done to excise the lesion, and histopathology revealed glioblastoma multiforme (GBM). The patient then underwent temozolomide-based concurrent chemoradiotherapy. This is an unusual case of GBM with intratumoral hemorrhage masquerading as hypertensive lobar ICH, causing a diagnostic pitfall for spontaneous ICH. For stereotactic aspiration for atypical spontaneous ICH, targets should include the surrounding hypodense or edematous area.

1. Introduction

Glioblastoma multiforme (GBM) is the most common primary malignant brain tumor. Clinical manifestations and prognosis depend on tumor size and location, its range of infiltration, involvement of eloquent areas, and the range of surgical resection. Histopathologic features include necrosis, microvascular proliferation and hypervascularity, increased cellularity and mitoses, and microscopic intratumoral hemorrhage, among others. However, a macroscopic presentation as intracerebral hemorrhage (ICH) is rare, which is demonstrated in this case report.

* Corresponding author. 10, Section 4, Renai Road, Da'an District, Taipei City 10629, Taiwan.
E-mail address: jhtseng3@ms46.hinet.net (W.-H. Lin).

1682-606X/$ - see front matter
http://dx.doi.org/10.1016/j.fjs.2012.08.001

2. Case report

A 72-year-old man, without a remarkable medical history, experienced headache and confusion for 3 weeks. A cranial computerized tomography (CT) scan performed in a private community hospital disclosed a resolving ICH in the right frontal subcortical area with subfalcine herniation (Fig. 1B). Stereotactic aspiration of 30 mL of liquefied blood clot was done to relieve the mass effect (Fig. 1C). The biopsy only showed hematomas.

However, the patient had persistent headache and progressively unsteady gait even 2 months after the operation. Neurologic examinations performed in our hospital demonstrated a disorientation state (Glasgow Coma Scale (GCS) E4M6V4), left hemiparesis [medical research council (MRC) grade 4/5 of both upper and lower limbs], and a Babinski sign on the left. Other laboratory studies were normal. A follow-up cranial CT revealed a hypodense change in the whole right frontal lobe (Fig. 1D), and an MRI with gadolinium enhancement demonstrated a heterogeneously enhanced lesion with irregular margin in the right mesial frontal and subcortical areas (Fig. 1E and F). Imaging differential diagnoses included a glioma or infectious process following the previous operation; therefore, a craniotomy was performed to excise the lesion. Histopathology showed GBM (Fig. 2). The patient then underwent temozolomide (TMZ)-based concurrent chemoradiotherapy (CCRT) in accordance with Stupp's protocol,[1] and he has been followed up as an outpatient regularly for more than 6 months.

3. Discussion

Microscopic hemorrhage is frequently found in surgical tumor specimens of primary or metastatic malignant brain tumors with reported rates of 9%—15%, but a macroscopic intratumoral hemorrhage large enough to cause clinical

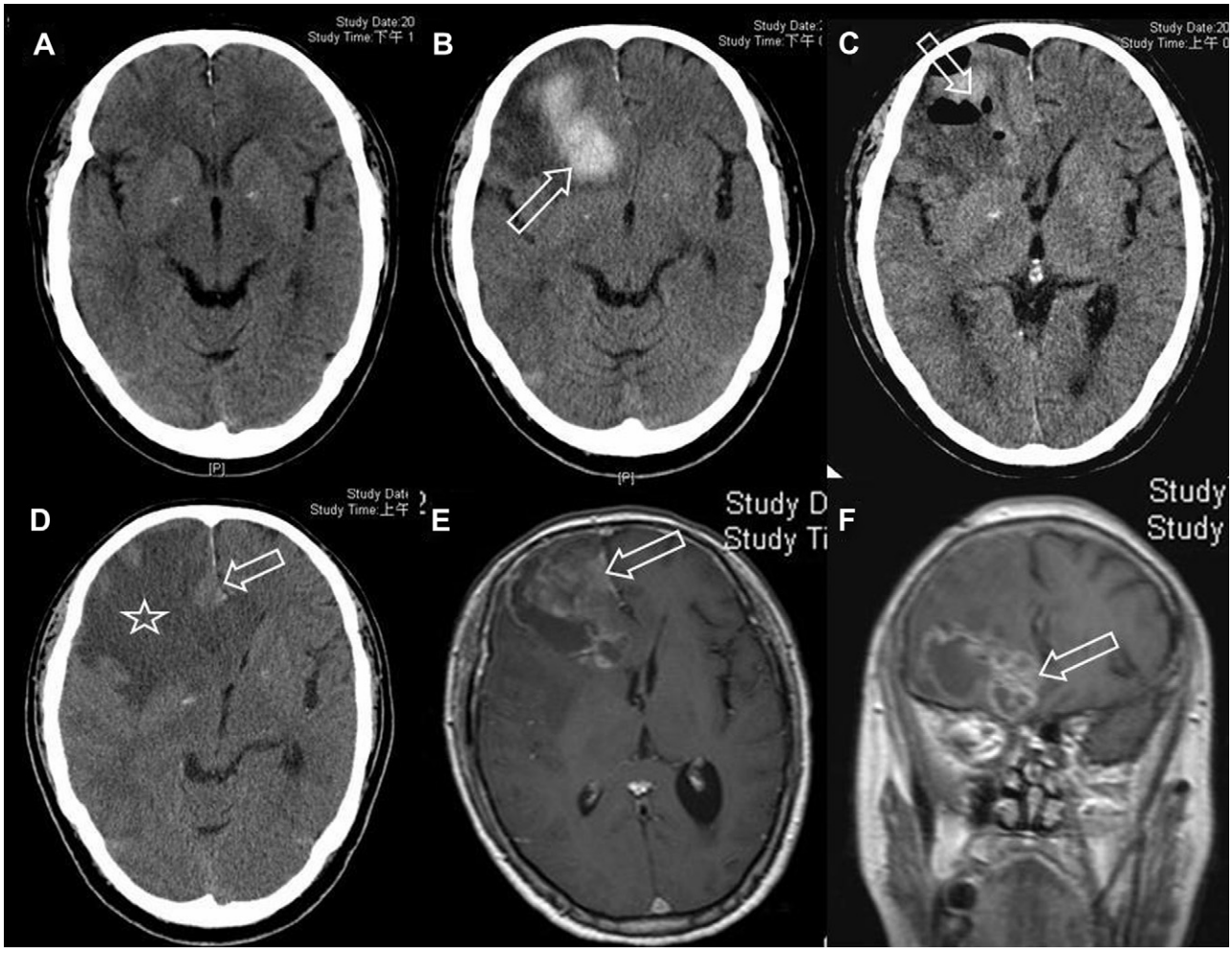

Figure 1 (A) Cranial CT 7 months before diagnosis of GBM. There was no identifiable lesion. (B) Cranial CT 2 months before diagnosis of GBM. There was a resolving right frontal subcortical ICH (arrow) with perifocal edema and subfalcine herniation. (C) Postoperative CT after stereotactic aspiration of the ICH. Procedures were performed by targeting the center of the hematoma (arrow). (D) Cranial CT 2 months after stereotactic aspiration. Diffuse hypodense changes in the right frontal lobe were observed (star), and a mass effect can also be seen (arrow, subfalcine herniation). (E, F) Brain MRI demonstrated a heterogeneously enhanced lesion with an irregular margin in the right mesial frontal area (arrow). CT = computed tomography; GBM = glioblastoma multiforme; ICH = intracerebral hemorrhage; MRI = magnetic resonance imaging.