

**TABLE 1.** Distribution of Data for Every Year

	1998	1999	2000	2001
No. of patients	37	33	29	36
Percent per year	6.7	8.9	7.7	9.5
Male (%)	18 (48.6)	17 (51.5)	14 (48.3)	12 (33.3)
Female (%)	19 (51.4)	16 (48.5)	15 (51.7)	24 (66.7)
Mean age ( $\pm$ SD)*	73 $\pm$ 10	79 $\pm$ 11	72 $\pm$ 14	79 $\pm$ 10
Median age*	75	77	75	81
Mean age/year ( $\pm$ SD)	76 $\pm$ 12	76 $\pm$ 12	75 $\pm$ 12	74 $\pm$ 14
Median age/year	78	78	77	77

Abbreviation: SD, standard deviation.

\*Data in considered period (September 11–October 7).

Since 1998 at Fatebenefratelli Hospital, in Milan, Italy, we have registered every patient arriving at the ED because of an acute cerebrovascular event. Between 1998 and December 31, 2001, we registered 1528 patients with an ischemic stroke. From this register we tabulate every case of ischemic stroke in the period between September 11 and October 7 (the day of the first U.S. attack on Afghanistan). We compare the relevant data during the interval September 11 and October 7 since 1998. We also calculate the number of registered patients born before 1940 as subjects who have already been through a war experience. Data are analyzed by the Student *t* test and chi-squared test. A *P* value lower than .05 is considered significant.

In the considered period (September 11–October 7), the percentage of the registered cases was higher in 2001 than in other years (Table 1). There were more females with an acute cerebrovascular accident and mean and median age were higher in 2001. In the 2001 cohort, there was a higher percentage of subjects born before 1940 in the considered period than the annual percentage for 2001. This difference was higher in 2001 than in the other years (Table 2). Only in 2001, the median age of the considered period was higher than median age of cases registered in the year. None of the data were statistically significant.

The relationship between stressful life events and onset of disease is well documented.<sup>2,3,5</sup> The brain mediates and integrates all the cognitive activities, the emotional experiences, and finally the behaviours.<sup>6</sup> Devries et al. demonstrated that stressful experience significantly compromises an endogenous molecular mechanism of neuroprotection in an injured brain.<sup>2</sup> In this way, stress could play a role as cofactor in increasing the stroke risk. Our data show that in the period between September 11 and October 7, the percentage of stroke was higher than during the same period in other years. As a result of the chronobiologic rhythm, the onset of ischemic stroke is more common in September, in fact, an increase in ischemic events in the autumnal months has been already reported,<sup>7</sup> but the percentage of events in September 2001 was higher than in other years in any case. In addition, mean age in the considered period was higher and there were more patients born before 1940.

We believe that those who have already experienced a war could be more susceptible to events that recall these experiences.

Our data represent a relatively limited number of a local register and thus do not constitute an epidemiologic study. However, they could suggest that even in our reality, which seems far from New

**TABLE 2.** Percentage of Subjects Born Before 1940

	1998	1999	2000	2001
Annual percentage	92.1	90.7	90.6	85.4
Period * percentage	89.2	90.9	86.2	91.7
$\Delta$ percentage (period *— year)	-2.9	+0.2	-4.4	+6.3

\*Period = September 11–October 7.

York, such a dramatic event can provoke psychological stress that can contribute to the precipitation of a cerebrovascular event.

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## SUBARACHNOID HEMORRHAGE PRESENTING AS CHEST PAIN

*To the Editor:*—Patients presenting with chest pain continue to be a difficult challenge to the emergency doctors.<sup>1</sup> Cardiovascular causes must be ruled out first because the history cannot distinguish between coronary artery disease and other causes of chest pain. The percentage of patients who present at the ED with acute chest pain and are admitted to the hospital is growing,<sup>2</sup> and costs increase as well. At the same time, discharging patients with myocardial infarction because of a missed diagnosis can have dire consequences.<sup>3</sup> However, chest pain sometimes could be a dilemma between different life-threatening cardiovascular diseases,<sup>4</sup> be a common symptom of noncardiac diseases,<sup>5</sup> or masquerade unfrequent neurologic diseases.<sup>6</sup>

We describe a patient with spinal subarachnoid hematoma whose clinical presentation with sudden acute chest pain without any neurologic sign at onset prompted the initial diagnostic suspicion of an acute vascular emergency.

A 74-year-old man presented to the ED with the sudden, abrupt onset of acute pain, described as very severe and tearing, associated with diaphoresis, paleness, and hypotension. The pain was felt in the center of the chest and radiated to the back. In his medical history, there was only mild hypertension. On admission, the electrocardiogram excluded acute myocardial ischemia, the blood chemistry panel did not show elevations of cardiac enzymes, whereas a chest radiograph revealed a significant aortic root dilatation. An aortic dissection was therefore suspected, but a computed tomography scan with contrast excluded this diagnosis.

Physical and neurologic examinations resulted in normal findings. The pain propagated distally down within a few hours. The day after, he experienced paresthesias with a sock distribution in the left lower limb. Neurologic examination revealed only a Babinski sign on the left. Panspinal magnetic resonance image (MRI) showed the presence

of a subarachnoid haemorrhage with a hematoma at the dorsal level D9–D12. The spine was normal. Clotting disorders were carefully excluded. The subsequent clinical course was uneventful and the patient underwent complete recovery within 2 days. A further MRI examination demonstrated the complete blood reabsorption and confirmed normal spine signal. No vascular malformations were detected apart from the presence of an angioma at the level D11 within an otherwise normal vertebra. Spinal angiography was not performed because of the patient's refusal.

Spontaneous spinal subarachnoid hemorrhage is unusual and rarely results in spinal subarachnoid hematoma because the cerebrospinal fluid tends to dilute the blood and prevent the formation of clots. Patients with this disease could present with serious signs of myelopathy, and urgent surgical decompression is then warranted to preserve neurologic functions.<sup>7-9</sup> When spinal cord symptoms are present, the correct diagnosis is easily made. However, often, the clinical picture is that of local pain in the spinal column, which eventually becomes stiff. The pain can be severe and worsened by movement. It could be felt at various level along the vertebral column depending on the site of bleeding.<sup>7</sup> Thus, the frequent absence of remarkable spinal cord involvement and nerve root signs could delay diagnosis or lead to misdiagnoses, in particular while arising at the thoracic level and presenting with sudden thoracic pain, mimicking vascular emergencies. Slight signs of meningeal irritation, nerve roots, and spinal cord compression must be carefully searched in patients with sudden backache without proven cardiovascular causes.

There is no doubt that triage of patients with chest pain is extremely difficult,<sup>10</sup> and medical literature everyday adds new suggestive presentations of infrequent diseases. Nevertheless, EPs should be familiar also with unfrequent conditions to assure appropriate therapy in a timely manner. Spontaneous spinal subarachnoid hemorrhage should be considered early in the differential diagnosis either of acute spinal cord compression or, in any case of sudden back pain of unknown etiology, even in the absence of remarkable neurologic deficit.

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## ASSESSING NEW-ONSET MENTAL STATUS CHANGES IN PATIENTS WITH DEMENTIA

*To the Editor:*—Psychiatrists will frequently be consulted in the ED to assess patients with documented histories of dementia who are exhibiting signs and symptoms of new-onset mental status changes.<sup>1</sup> Not uncommonly, spouses, caregivers, or nursing home attendants will accompany the patient and provide a history of observing behavioral or cognitive changes in the person, which have occurred either abruptly or over the course of several days. Although these clinical changes could well be secondary to an underlying psychiatric disorder, it is also critically important to rule out other common causes of behavioral and personality changes in those who, as a result of their underlying cognitive deficits, are unable to provide an accurate or complete history.<sup>2</sup> A number of clues can alert both the ED physician and psychiatrist to the likelihood that the new mental or behavioral changes are secondary to an underlying physical disorder or medication: an abnormal level of alertness, psychiatric symptoms that are more sudden or severe than what is normally observed, coexisting chronic medical illness, or recent changes in medications.<sup>3</sup> The assessment should begin with a thorough history taken from a reliable informant followed by a comprehensive mental status evaluation and physical examination. Clarification of the diagnosis can be aided by recalling the most common reasons for new-onset mental status changes in this highly vulnerable population. When in the ED, I remember this particular differential diagnosis as *The Seven Is*.

### 1. INFECTION

Urinary tract infections and pneumonias are notorious for causing new-onset mental status changes in the geriatric patient. An elderly individual with progressive dementia will always be at high risk for either or both of these infections whether they are living in the community or residing in a skilled nursing facility.<sup>4,5</sup> A thorough physical examination, appropriate lab studies, and possible chest x-ray will help to clarify the diagnosis.

### 2. INFARCTION

Myocardial infarctions, as well as cerebral vascular accidents, could well present initially as behavioral or cognitive changes in the person with dementia.<sup>6</sup> An electrocardiogram and cardiac enzymes could be indicated in a person with a known history of coronary artery disease or if a “silent” myocardial infarction is suspected. In situations when there is evidence of focal neurologic findings on physical examination or a clouded sensorium, a computed tomography scan of the brain could well help identify the primary cause behind the mental status changes in the patient.

### 3. INJURY

Individuals with dementia frequently wander, have gait disturbances, or suffer from orthostatic hypotension, which can lead to unwitnessed falls. Fractured hips, subdural hematomas, and painful soft tissue injuries are not uncommon occurrences in this population and can lead to significant mental and behavioral changes before obtaining an accurate diagnosis.<sup>7</sup> Clarification of the underlying cause will be derived from obtaining a careful history from a reliable caregiver followed by a focused physical examination and appropriate radiologic studies.