

Commentary

Brucellosis is one of the most endemic zoonotic diseases worldwide, especially in the Middle East.^[1] Three main *Brucella* species that have predominant animal reservoirs can cause human infections: *Brucella melitensis* (main reservoirs are goats and sheep) *B. abortus* (cattle), and *B. suis* (pigs). Neurobrucellosis is a very rare complication; it develops in less than 5% of systemic brucellosis cases.^[2] Central nervous system involvement of the affected individuals with brucellosis can be categorized into one of eight groups: (1) Meningoencephalitis, (2) Meningovascular involvement resulting in stroke or hemorrhage due to assumed rupture of mycotic aneurysm, (3) Myelitis, (4) Polyradiculitis and Guillain Barre syndrome, (5) Neuritis involving the peripheral or cranial nerves, (6) Papillitis, papilledema and increased intracranial pressure, (7) Sensorineural hearing loss and (8) Cerebral venous thrombosis (CVT).^[3,4]

Cerebral venous thrombosis (CVT) is responsible for 1-2% of all strokes in adults and affect all age groups. They estimated annual incidence of 3-4 cases per million people and a mortality rate of 8%.^[5] Approximately one-third of CVT patients developed intracerebral hemorrhage leading to a dilemma in evaluating clinically these patients and treating them. Subarachnoid hemorrhage could be the initial presentation of CVT in certain cases.^[6] Certain risk factors are correlated with this association that include older age, female sex, acute onset (<48 h), headache, decreased level of consciousness, seizure, elevated blood pressure and papilledema.^[7] The presentation of CVT is usually subacute, with symptoms evolving over days to weeks. Confirmatory tests are needed in this context including magnetic resonance imaging and magnetic resonance venogram. Treating these patients with anticoagulation therapy is the most commonly recommended option despite the presence of intracerebral hemorrhage. Such conditions are usually associated with a poor prognosis.

Dr. Fardin Faraji and his coworkers in their recently published paper entitled: "Uncontrolled seizures resulting from cerebral venous sinus thrombosis complicating Neurobrucellosis: A case report",^[8] described a case of a 33-year-old woman who is known to have a history of complex partial seizure treated and well controlled. She presented for uncontrolled seizures despite adequate treatment, new onset fever, headache and asthenia of one month duration. The authors performed initially CT scan of the brain which showed intracerebral hemorrhage in the left posterior parietal and the temporal lobe. The presence of the blood in the brain alone could not explain her full clinical presentation. For this reason, further investigations were done to rule out an underlying infection of the central nervous system in this clinical context. CVT was found, as well as systemic infection with *Brucella* documented with positive serological tests in blood. The authors could not perform a lumbar puncture because of the presence of intracerebral hemorrhage to confirm the central nervous system infection with *Brucella* but they assumed clinically that the patient developed neurobrucellosis complicated by CVT and intracerebral hemorrhage placing the multiple pieces of the puzzle together for the definite diagnosis.

The patient, being from the Middle Eastern area, was subject to develop brucellosis and neurobrucellosis. The following factors that include gender, uncontrolled seizures and headache make her prone to be at risk to have CVT and as a consequence intracerebral hemorrhage. This report is the first one to describe a case of neurobrucellosis complicated by CVT and intracerebral hemorrhage at the same time making it original in terms of diagnosis and differential diagnosis. The patient received adequate treatment with antiepileptics, antibiotics and anticoagulation that controlled her seizures, fever, and headache and improving her condition.

In conclusion, the authors recommend to search for the

possibility of having neurobrucellosis as a cause of CVT and intracerebral hemorrhage in certain cases, in one hand and to start the treatment with the *anti-brucella* agents and anticoagulation as soon as possible to obtain the optimal care for the patients and prevent the complications, on the other.

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