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NEUROLOGY
Case Report

An Old Patient Displayed Rare Atypical Presenting Symptoms While on Imaging Revealed Massive Midline Shift Diagnosed as Case of Chronic Subdural Hematoma

Saeed Mazher[1]*, Abdul Ali[2] and Faisal Zia[3]

[1]*Consultant Neurosurgeon, Zubaida Medical Center, Pakistan*

[2]*Consultant Neurosurgeon, Abbasi Shaheed Hospital, Pakistan*

[3]*Consultant Physician, Kidney Center Karachi, Pakistan*

***Corresponding Author:** Saeed Mazher, Department of Neurosurgery, Zubaida Medical Center, Ghazi Salahuddin Road, C.P Berar Society, Dhoraj Colony, Karachi, Pakistan.

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Abstract

Chronic subdural hematoma usually presents with the symptoms of weakness, incontinence of urine and walking problems. We report 75 years old male patient who presented with complain of slurred speech and tendency to fall. Incidentally the patient was found to have a large chronic sub dural hematoma with some sub acute element on left side.

This case demonstrated a functional mode of natural life style continuation with pre existing weakness of one side of his body for the last more than 30 years with the previous history of large cerebral infarct. But as the scans and imaging were performed in addition to an old infarct it was reported to show a large chronic subdural hematoma with severe midline shift. Therefore it was promptly decided to intervene after optimization of patient's medical problems.

After a delay of one week under close follow up the patient was intervened in terms of single burr hole drainage along with placement of drainage tube for few days. Later on which was removed and patient got his atypical symptoms relieved with uneventful recovery and no recurrence was reported till 3 months of follow up.

Keywords: *Chronic subdural hematoma; Atypical presentation (Incomprehensive speech, Tendency to fall); Massive midline shift*

Introduction

This article focuses on the atypical presentations of chronic subdural hematoma. Most of the time patients present with altered mental state, head ache, focal neurological deficits, seizures and transient neurological loss. Whereas atypical symptoms has been reported in terms of isolated neurological deficit and ease of falling as displayed by our case. There are few cases which were reported with rare extra pyramidal symptoms and neurological syndromes.

Chronic subdural hematoma is predominantly a disease of the elderly. It usually occurs following a minor trauma. A history of direct trauma to the head is absent in up to half the cases. Morbidity and mortality is higher in the elderly if not managed timely with multidisciplinary approach but outcome is good in patients who undergo neurosurgical intervention on time with consideration of preoperative optimization and per operative proper monitoring.

Most of the time trauma is so trivial that it is forgotten. Other predisposing factors include anticoagulation, alcoholism, epilepsy, bleeding diathesis, low intracranial pressure secondary to dehydration or after the removal of cerebrospinal fluid, and receiving renal dialysis, presumably due to platelet dysfunction [1]. As many as 24% of patients with CSDH are on warfarin or an antiplatelet drug [2];

5%-10% have a history of alcoholism and epilepsy. Chronic subdural hematoma (CSDH) is an encapsulated collection of old blood, mostly or totally liquefied and located between the dura mater and arachnoid. It was first described by Virchow in 1857 as "pachymeningitis hemorrhagic interna". Later Trotter put forward the theory of trauma to the bridging veins as a cause of what he named "subdural hemorrhagic cyst". Since then trauma has been recognized as an important factor in the development of CSDH [3].

CSDH should be differentiated from acute subdural hematoma. Acute subdural hematomas generally occur in younger adults, after a major trauma. In contrast, CSDHs often occur in the elderly after a trivial injury without any damage to the underlying brain and usually there is a period of weeks to months before it becomes clinically evident. It has a peak incidence in the sixth and seventh decade of life. Fogelholm and Waltimo estimated an incidence of 1.72/100 000 per year, the incidence increasing steeply with advancing age up to 7.35/100 000 per year in the age group 70–79 [4]. This incidence is expected to rise further due to the continuing growth of the older population.

This article will be an addition in literature which can portray the significance regarding awareness about the spectrum of atypical symptoms which can be displayed by CSDH patients. Hence it is better to get the radiological confirmation for establishment of diagnosis at the earliest. So that management steps can be promptly prioritized under neurosurgical care center.

Case Report

A 74 years old man presented with progressive speech problem and increased tendency to fall for the last couple of days. On enquiry it was narrated by the care takers that day by day we are unable to understand patient's conversation. Moreover in the past medical history attendant stated about the occurrence of falling event in wash room approximately about fourteen days back. At presentation he had difficulty in walking which was elaborated by the care takers that it is very old since he had stroke about 30 years back from which he had uneventful recovery and successful rehabilitation.

As far as the drug history is concern he had been taking been taking tablet aspirin 75 mg for the last 6 to 7 year, simultaneously he was under close follow up of a cardiologist. Moreover there were no other risk factors like cigarette smoking and sedentary life style. The patient had a past medical history of stoke but he was able to perform his daily routine activity about two weeks back.

Initially he was brought to tertiary care medical college teaching hospital late night where he was catheterized in the emergency room and baseline work up was done including blood biochemistry and clotting profile along with Magnetic Resonance imaging. As the MRI showed large hematoma causing severe midline shift, patient was advised an admission in ICU. After one day of the similar hospital stay in ICU a CT scan was also performed which revealed a large collection of blood in the form of chronic as well as sub acute component. Afterwards he was referred to our medical center where he was advised admission under neurosurgical care with instruction to stop Aspirin one week before surgical intervention. Mean while he has been advised to recheck blood biochemistry including complete blood picture to confirm standard hemoglobin levels total leukocyte count and platelet count. Urea, Creatinine and electrolytes reports were also done. Further more blood clotting profile (PT, APTT and INR) was performed to rule out the requirement of fresh frozen plasma. In addition to blood screening tests chest X rays and echocardiogram was also done, and patient was referred for cardiac consultation. All reports came out to be unremarkable.

Hence with specific importance to cardiac and anesthetist consultations we proceeded for the surgical intervention after preoperative optimization and arrangement of one pint packed cells.

In the operating room the patient was sedated and being monitored by anesthetist, afterwards local anesthesia was infiltrated at the required area. Surgical intervention was done by performing single Burr hole with strict aseptic measures. A medium size drain was inserted with care to avoid entry of air in the cranial cavity. The drain remains placed for 2 days and approximately 220 ml liquefied blood was drained. Antibiotic coverage was given until we took out the drain. Before planning to remove the drain another CT scan was

performed this revealed resolution of midline shift. Therefore the drained was removed and later on patient was discharged to home with an instruction to come on regular follow up in outpatient department. After a follow up of one week the stitches were removed and patient was advised to continue the normal activity with close follow up with cardiac consultant.

Discussion

This article describes atypical neurological presentations of the chronic subdural hematoma. This case confirms the statement that the medicine is not like mathematics. Sometimes radiological findings do not correlate with neurological symptoms. Every case/patient should be considered individually [5]. The subdural hematomas are widely classified in to acute, sub acute and chronic one depending upon the time elapsed between the head injury and clinical symptoms. The chronic hematoma usually manifest after 2 to 3 weeks.

Many chronic subdural hematomas probably start out as acute subdural hematomas. Blood within the subdural space evokes an inflammatory response. Within days, fibroblasts invade the clot and form neomembranes on the inner (cortical) and outer (dural) surface, followed by in-growth of neocapillaries, enzymatic fibrynolisis and liquefaction of blood clot. Fibrin degradation products are reincorporated into new clots and inhibit hemostasis. The course of chronic subdural hematoma is determined by the balance between plasma effusion and/or rebleeding from the neomembranes and the reabsorption of fluid [6].

The diagnosis of a CSDH is not usually suspected at the time of initial presentation in majority of cases. In a series of 194 cases (in 1979), CSDH was suspected only in 28% of patients [7]. Other suspected diagnoses at the time of presentation include tumour (27%), subarachnoid haemorrhage (10%), and cerebrovascular accident (6%). However in our recent study involving 40 patients (unpublished data), cerebrovascular accident was the most common initial diagnosis (48%) followed by CSDH (20%) and others including tumour (32%).

It is well established in the literature that small hematomas can resolve spontaneously with close monitoring. It has also documented that in old days people used to treat it by the help of steroid which is not being practiced nowadays.

Whereas it has also been documented that CSDH can present with a wide variety of symptoms. However movement disorders (the most common is Secondary Parkinsonism) in CSDH are one of the atypical rare presentations [8,9].

Hence according to the recently published report sudden onset of movement disorder in elderly patients require prompt radiological investigation to establish the correct diagnosis of CSDH. In contrast to resting tremors of Parkinsonism CSDH patient displayed intention tremors which usually occur in cerebellar disorder [10].

Kernohan-Woltman notch phenomenon appears when any superatentorial mass lesion causes the midline shift and there is compression of cerebral peduncle against the tentorial edge causing the ipsilateral hemiparesis or hemiplegia and mydriasis [11,12].

Trepanation has been considered to be the standard treatment modality for chronic sub dural hematoma. The clinical improvement usually observed when pressure has become zero inside the cavity which is seen after removal of 20% the blood. A patient with high subdural pressure tends to have more quick expansion and resolution of symptoms as compared to those with low pressure. In elderly patient rapid drainage of hematoma may be associated with hyperemia which may lead to intra cerebral hematoma or seizures [13].

All the figures (figure 1-6) of the case study have been shown as follows.

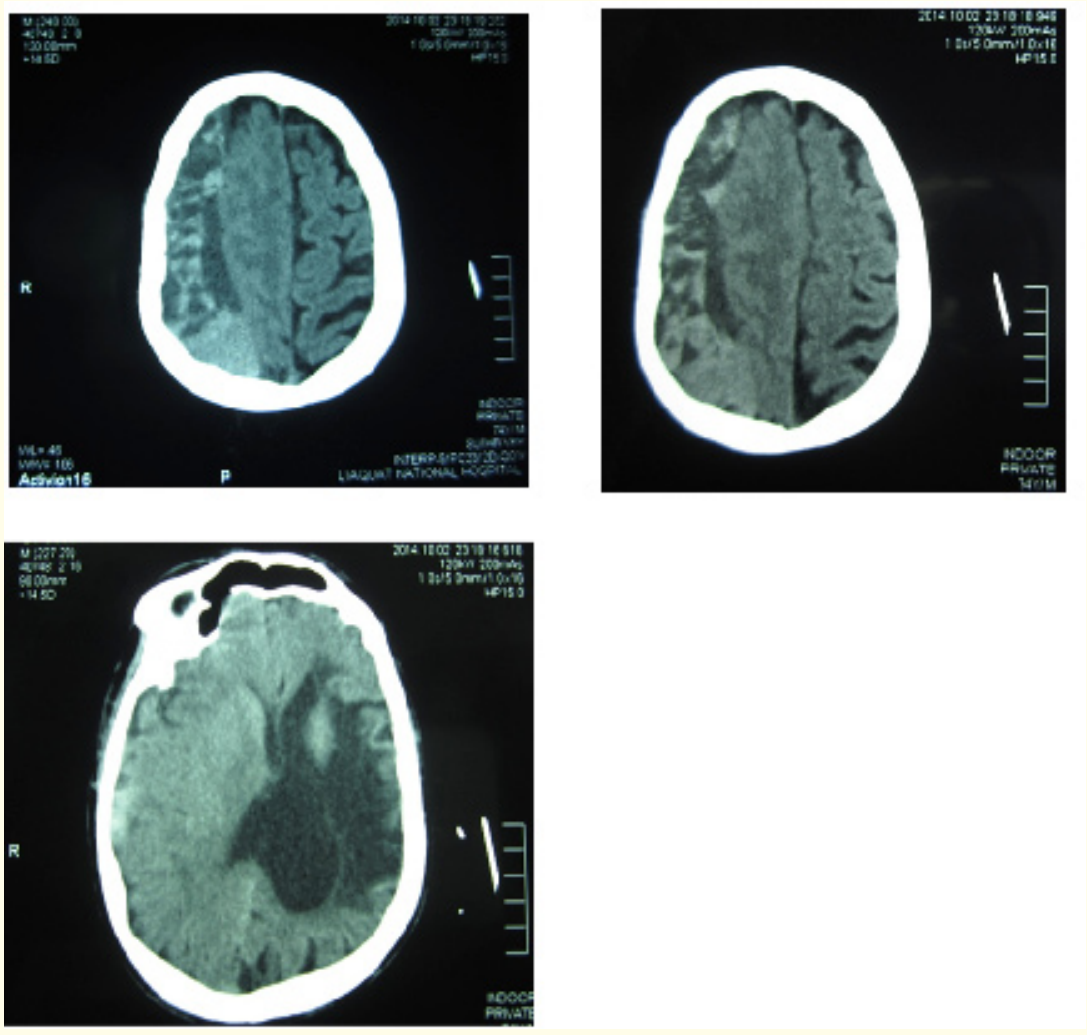

Figure 1: *CT Scans at the time of presentation (In emergency room).*

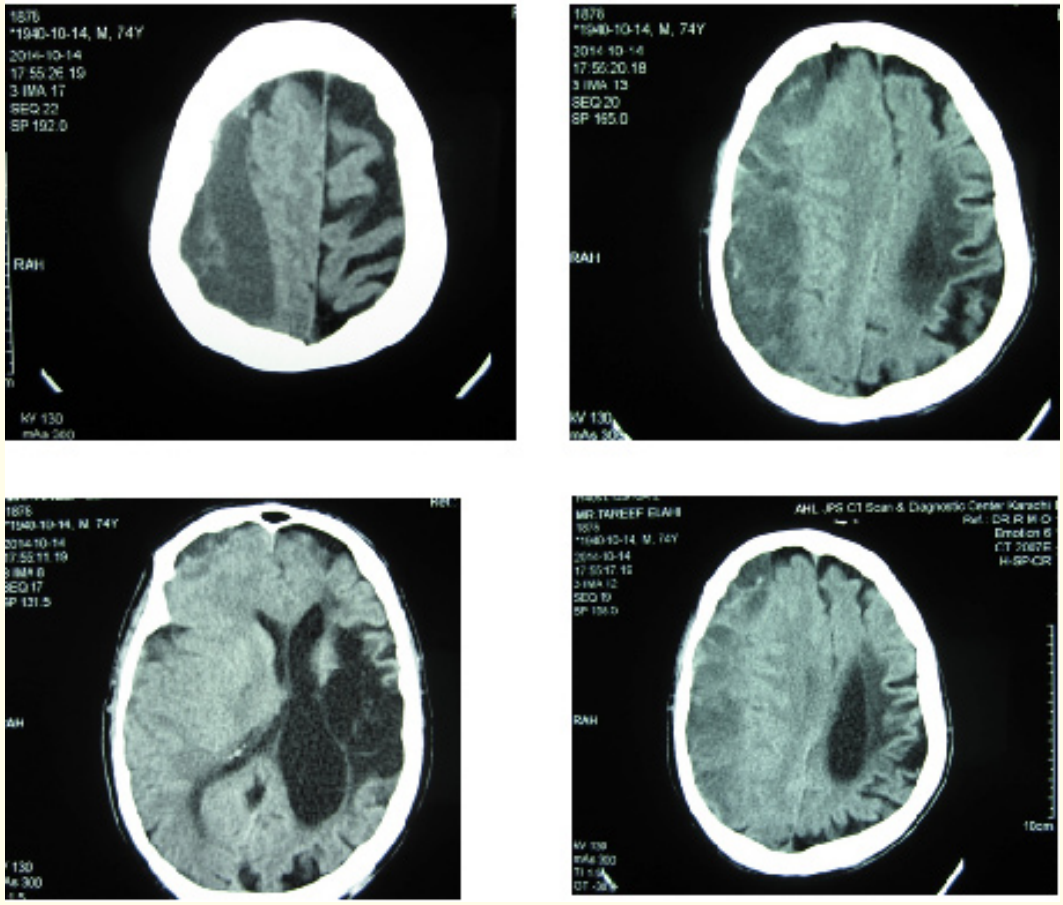

Figure 2: *CT Scans after one week of initial presentation (In out patient department).*

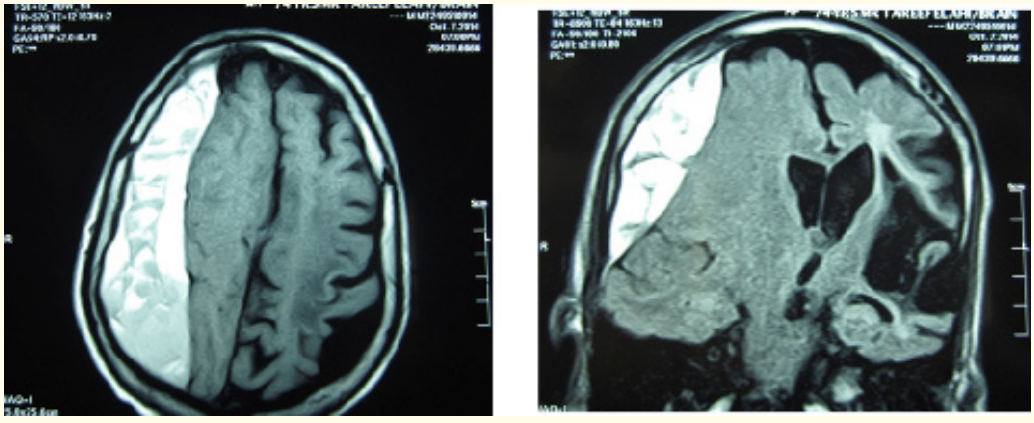

Figure 3: *MR Imaging at the time of presentation.*

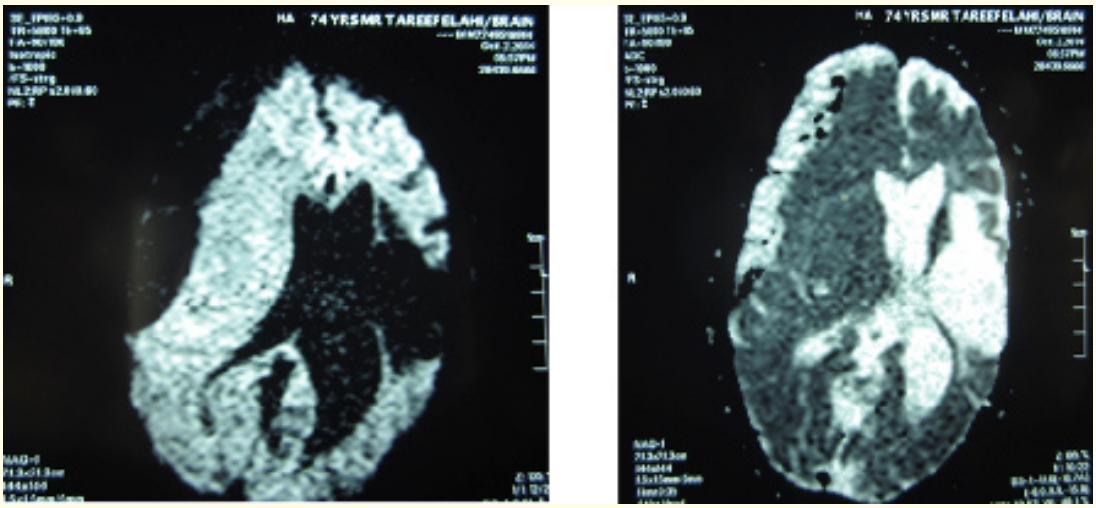

Figure 4: *Diffusion perfusion images of same patient.*

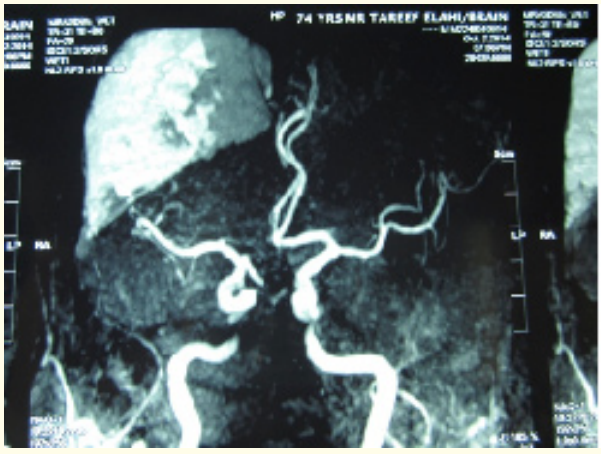

Figure 5: *MRI Angiogram of same patient.*

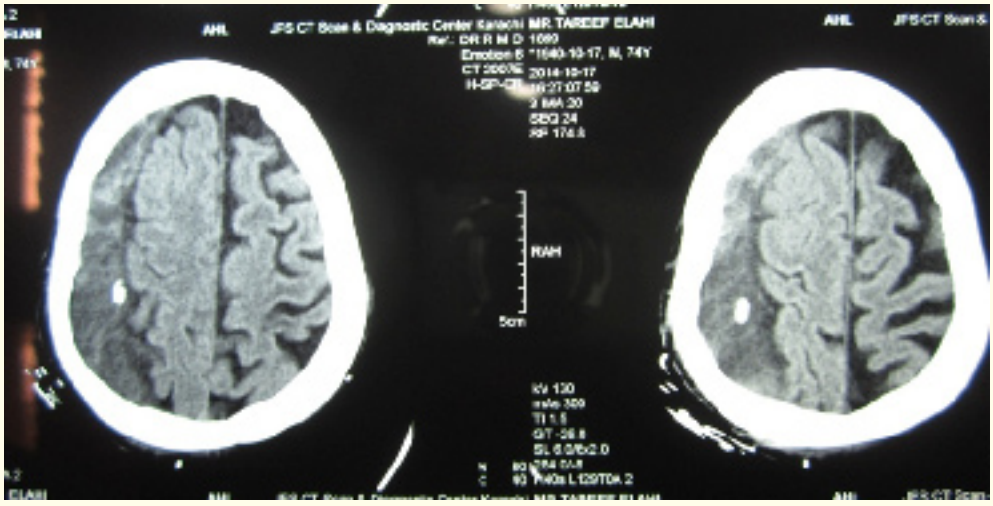

Figure 6: *CT Scan after placement of drain showing resolution of midline shift.*

Conclusion

It is justified that whenever a patient comes with atypical symptoms, it is obligatory to perform the radiological workup to establish the definitive diagnosis. Moreover it is mandatory to check out bleeding diathesis and details about the drug history regarding blood thinning agent intake. Obviously these agents should be timely stopped before intervention. Elderly patients should always be screened and optimized for cardiac, respiratory and bleeding problems before proceeding for the proper drainage. Recheck scanning should be considered whenever sub acute or acute blood clots were reported in previous scans. Last but not the Least, intervention is best recommended under local anesthesia and sedation with all parameters being monitored by consultant anesthetist.

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