

## Case Report:

### **A survival of Massive Cerebral Infarction associated with Gastroenteritis**

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**Key words:** Cerebral infarct, cerebrovascular accident, gastroenteritis

#### **Summary:**

We report a rare case of a two year old boy who survived massive cerebral infarct associated with gastroenteritis

#### **Case report**

Mohammed was a two year old, previously healthy boy, from El-

Gazira admitted to Khartoum Hospital with a three day history of diarrhoea

( 5-6 times/day)

The diarrhoea was followed two days later, by high grade fever associated with two seizures each lasting for ten minutes. The convulsions were generalized tonic clonic followed by loss of consciousness, left sided weakness and inability to speak.

The patient achieved his developmental milestones appropriately with age and he had been immunized. His prenatal, birth history and family history were unremarkable.

On examination the patient was conscious looked unwell and dehydrated. The pulse and respiratory rate were 92 and 28 per minutes respectively; the blood pressure was 90/60 ( 50<sup>th</sup> centile).

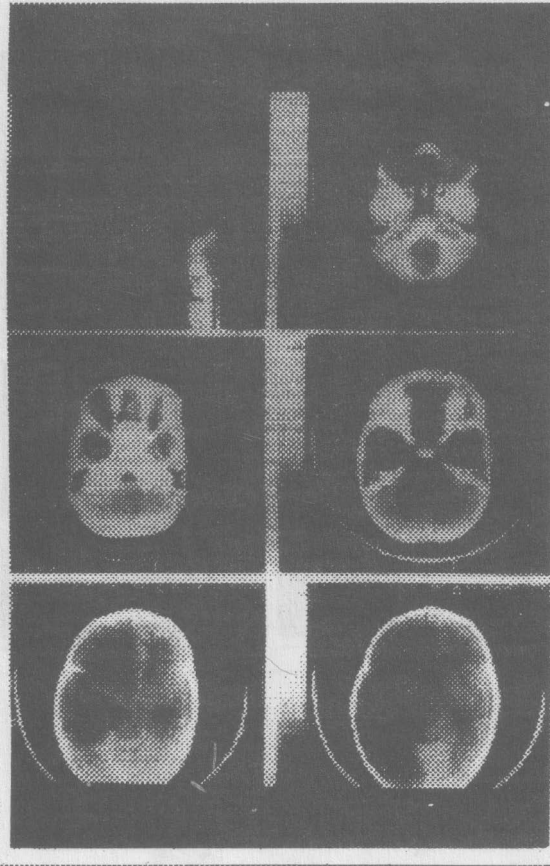
The patient's weight, length and head circumference were all on the 10<sup>th</sup> centile.

Central nervous system examination revealed an apathetic boy, who was disinterested in his surroundings with a fixed gaze. His right pupil was dilated but reactive to light and he had divergent squint. He had left sided upper motor neuron facial palsy with left sided spastic hemiplegia. He had head lag and was unable to turn from side to side or sit up. Sensation was grossly intact. The rest of examination was unremarkable.

Investigations showed: HB: 9.8 gm/dl, PCV: 30%, TWBCC:  $3.5 \times 10^6$  cells/l with normal differential; platelets count was  $160 \times 10^9$  /l; peripheral blood picture was normal; random blood sugar was 7.22

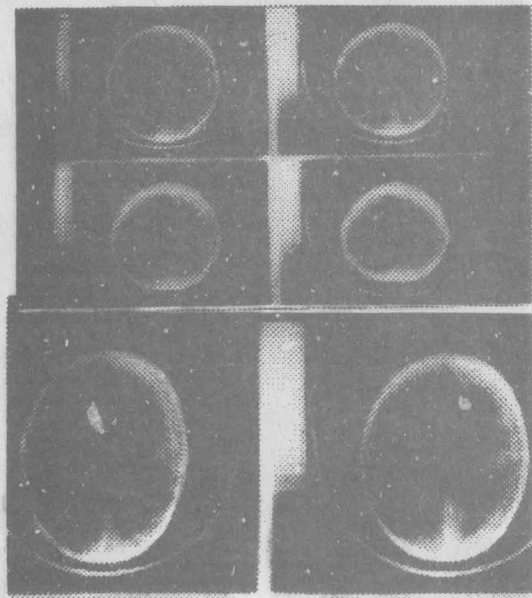
mmol/L. Cerebrospinal fluid examination showed proteins of 20mg/dl and sugar of 9.4 mmol/L and no cells. Sickling test was negative. Skull X-ray was normal. A computerized tomographic scan showed right side massive cerebral infarction with contralateral mid brain shift. (fig.a,b)

Regular follow up of the child up to six months showed ; gradual return of vision with correction of the squint, disappearance of the facial palsy and regaining speech. He was also walking unsupported with a hemiplegic gait.



Acomputerized tomographic scan  
showing right side massive infarction  
with contralateral mid brain shift

**Figure (a)**



A computerized tomographic scan showing right side massive infarction with contralateral mid brain shift

**Figure (b)**

## Discussion

A focal neurological deficit lasting more than 24 hours is defined as a stroke if it has a vascular basis <sup>(1)</sup>. Presentation with a stroke is rare in children with an incidence of 2.6 and 3.1 per 100,000 white and black children, respectively <sup>(2)</sup>. In a six years study done in Cameroon among hospitalized children, the average annual incidence was 1.85 per 1000 pediatric hospitalization. There was a progressive rise in the number of cases from 1985, with a peak in 1990 <sup>(3)</sup>. The initial presentation of stroke in children differs from that in adults. Seizures at onset more frequent in children and may occur with either haemorrhage or ischemic infarction. Stroke in dominant hemisphere produces loss of expressive language, usually presenting as mutism in younger children <sup>(4)</sup>.

Hemiparesis was reported to be the most common form of disability following stroke. <sup>(3, 5)</sup> The case presented here had gaze palsy, head turning and deterioration in the level of consciousness suggesting a large supratentorial infarct <sup>(6)</sup>.

This case also showed the commonest risk factors associated with cerebral infarct, namely non-specific viral infection and moderate dehydration <sup>(5, 7)</sup>.

There were multiple determinants of the outcome after a stroke. Black ethnicity was a risk factor for mortality from all stroke types (relative risk of 1.74 for ischemic, 1.76 for SAH, 2.06 for ICH  $p=0.0001$ ) <sup>(8)</sup>. Presentation with altered level of consciousness, seizures or both was found to be a significant risk factor for poor outcome with increased risk to immediate death <sup>(9,10)</sup>. The size of

infarct may also affect the outcome. All children who infarcted more than 10% of intracranial volume had poor outcome<sup>(11)</sup>.

Surprisingly the case presented here has satisfied all the risk factors for poor immediate outcome yet the child not only survived but showed progressive improvement and became mobile in less than 6 months. Such outcome couldn't be traced in the literature.

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