

“How Fatal can an Animal Bite be?” A Rare Case Report of Clinically Diagnosed Acute Rabies Encephalitis - The Journey from Incubation to Recovery.

Dr.Saurabh Singhal¹, Dr. Sumirini Puppala², Dr. Bharat Veer Manchanda³,
Dr. S.K.K. Malik⁴, Dr. Rochak Pandey⁵, Dr. Naman Bansal⁶

¹Professor In Dept. of Medicine, Subharti Medical College, Meerut

³Asst. Professor In Dept. of Medicine, Subharti Medical College, Meerut

⁴Senior Resident In Dept. of Medicine, Subharti Medical College, Meerut

^{2,5,6}Post Graduate In Dept. of Medicine, Subharti Medical College, Meerut

Corresponding author: Dr.Sumirini Puppala

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I. Introduction :

Rabies^[1], is a fatal zoonotic viral encephalitis, caused by *Rabies virus*, of Family *Lyssavirus*, of family *Rhabdoviridae*. Known since past 4000yrs in literature, Rabies is said to be responsible, for around 50,000 human deaths ,annually, globally, and prevalent in all continents, except Antarctica. With India, having the highest rate of Human Rabies, in the world (about 1/3rd global burden).

Varying from less than 10 Days to More than 6 years, most common Incubation period is between 3-14 weeks, with closer the inoculation site to CNS , faster the manifestation. RABV , can infect several types of cells, commonly, skeletal muscle cells, and Fibroblasts, at the site of inoculation, and after several replication cycles, penetrates peripheral nerves, and spreads to CNS, by Retrograde Axonal Transport, and then further by both axonal and post-synaptic transport, disseminates within Brain and Spinal Cord. Clinically, prodromal symptoms, are non-specific with fever, general malaise, vomiting, general irritability developing 1-3 days before encephalitic symptoms. Then, in clinical form, patient suffers from pain and paraesthesia (tingling & numbness) at the site of inoculation, gradually travelling upwards to Brain & Spinal cord^[2].

Followed by : *The Furious Classical Form*, presenting with Agitation, Aggression, Pupillary Dilatation, Altered Phonation, Aimless wandering , drooling of saliva, muscle tremors, seizures, hallucinations and delirium, Hydrophobia (painful throat seizures, on attempt to drink water), Photophobia, Phonophobia, subsequently progressive paresis, paralysis . OR, *The Paralytic Form*, where Paresis and paralysis is manifested from the beginning, whereas anxiety and agitation, are almost absent. Once symptoms appear, death usually occurs within 1-10 days, with cardio-respiratory arrest.

II. Case Report:

We report a Case presented to us, in the Emergency room, of Chhatrapati Shivaji Subharti Hospital, Swami Vivekanand Subharti University, Meerut. The Subject , was apparently normal 18 days prior to presentation, with no history of any significant previous ailment, when, at around 4am, she was Bitten by a **Wild Honey Badger, Unprovoked**, with each bite mark, **1-2cm deep, with Profuse bleed**, and immediately was washed, and **Closed, with an Antiseptic pressure dressing**. She was given Anti-Rabies Vaccine (documented) , On Day 0-4-7-14-18. But, **No Immunoglobulins, were given**.

The patient, on **DAY -3**(Post-bite), developed pain, swelling, **tingling sensation**, locally, at the site of bite, on Right Leg. It was **A Shooting type of pain, radiating upwards, towards chest**. And in next 4-5 days, pain extended, up to mid-chest, and pain ended reaching the head and neck region, which manifested as **Severe Headache, and Vomiting**. On **Day-15**(Post-Bite), The patient developed **Fever**, acute in onset, progressive in nature, high grade, 101-102 degree Fahrenheit, associated with **Persistent Tremors**, with **Continuous Vomiting**, not relieved on Medication. On **Day-16** (Post-Bite), Water Drinking Test (**Hydrophobia**), and Wind flow exposure test (**Aerophobia**), was Positive .And , the patient developed **Anxiety, Insomnia with Agitation**, and Resistance to light and glare (**Photophobia**), with **Altered Phonation**, by evening.

[The patient, was then, provisionally Diagnosed as A Case of Classical RABIES, and with poor prognosis explained, was referred to NICD (National Institute of Communicable Disease), New Delhi]

On DAY-18(Post-Bite), The patient, gradually developed drowsiness, and altered sensorium (**Comatose**), gradually progressive, responding with eye opening, initially to voice commands, deteriorating later, only to deep painful stimulus, and couldn't move all her four limbs(**Paresis & Paralysis**).

The Subject, On Examination, the patient was unconscious, responding with eye opening, only to deep painful stimulus. Both Pupils were mid- dilated, and sluggish reacting. Both Plantars were Flexor. Neck Rigidity was present. All reflexes were diminished. The patient was **Febrile** , with temp **102 degrees** Fahrenheit, with BP =130/90mmHg , and pulse rate of 126 bpm, and Spo2 92% at Room air. Suction, from oro-pharyngeal area had profuse, clear, watery secretions.

Counselled for a definite ventilatory support requirement, the subject was admitted to Intensive Care Unit, for palliative care.

POST – ADMISSION:

Under Intensive Care Unit, patient was continuously monitored for her Blood Pressure, Heart Rate, Pulse, Oxygen sufficiency , Temperature and Random Blood Sugar levels.

Patient was duly investigated , by CSF Fluid examination, which was clear, colorless, normal in pressure(upon Lumbar puncture), no webs/ clots, which tested RBS = 74mg/dl, Proteins = 130mg /dL, TLC = 95 cells, with 90% lymphocyte predominant. The MRI Brain showed features of – ‘*Encephalitis with Viral Etiology*’. Her renal function test was deranged with Urea = 88.0 mg/dL, Creatinine = 2.2 mg/dL, with reduced urine output, with no alteration in Kidney echotexture /morphology (as on Ultrasonography).

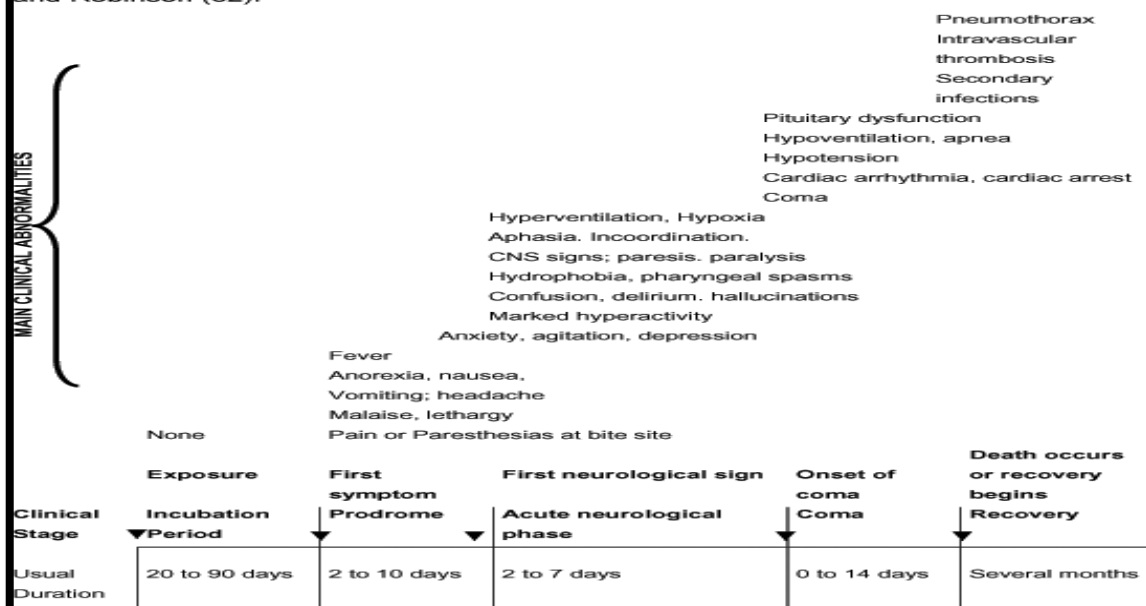
Patient was then empirically treated with Intravenous Anti-virals , and , Injectable Anti-Bacterials, along with 3-4 Litres of Intravenous Fluid every 24hrs, with Nebulization, and regular suctioning, of respiratory tracts.

Over the first 4 days, post-admission ,patient showed no signs of recovery, but, had no deterioration, with vitals well maintained, (under sedation) , except for ,the febrile episodes &tachycardia. Patient was responding, only to deep painful stimuli.**Thenext 3 days**, Patient had deteriorating trend, with patient having gradually progressive **Bradycardia**, but High graded febrile, with renal function test deranged , and Spo2 falling (~85 % @room air). Further since **8th day post admission**, patient gradually start recovering with heart rate around 100 to 110 bpm , Temp 99-100 degree Fahrenheit , Blood Oxygen Saturation 96-98% @ full flow oxygen , Blood Pressure : Systolic 100-120 mmHg , Diastolic 60-80 mmHg. Patient had varying level of consciousness with gradual progress to eye opening and response to verbal commands , with no external support required for maintaining the basic vital signs.

On day 15 post-admission, patient had spontaneous eye opening, but, still unable to move all four limbs and patient physiotherapy was started.**On day 20 post admission**, test oral sips of water were given and patient well accepted it and the patient was then shifted to a private room where she was given regular **Trans-Parenteral Nutrition intravenously** along with **regular physiotherapy** and **speech therapy**. Patient could now pronounce her name, but, speech production was unclear. Patient was oriented to surroundings and on Discharged on Day 33, UNDER STABLE AND SATISFACTORY CONDITION.

Post 1-year of animal bite , Patient is conscious, well oriented, speaks clear , does household chores independently but has persistent weakness of both lower limbs with a wide stepped gait , no other significant remnant of the disease is noted.

Table 1: Natural history of rabies in humans. Hypothetical composite case. Not all clinical abnormalities are necessarily present in every case. Adapted from Fishbein and Robinson (32).



[3]

III. Case Summary :

A Female patient, aged 33 years, with a history of Unprovoked Grade-III Bite by a Wild animal , presented with a Shooting, radiating pain at the site of Bite, progressing to Fever, Vomitings, Anxiety, Tremors, Photophobia, Aphonia, Hydrophobia, Aerophobia, Agitation ,Insomnia, gradually ending into Altered sensorium (Drowsiness) and Paresis & Paralysis. And, Based on , History of exposure, and Compatible symptomatology, **Patient was Diagnosed as A Case of Classical form of RABIES.** Patient presented in post -Acute Neurological Comatose state, with intent of only Palliative care. Upon admission, under Intensive Care Unit, patient was investigated using MRI brain, and CSF examination, which suggested of Viral Encephalitis. And Patient, was treated using Intravenous Anti-virals, and Anti-Bacterials , along with other conservative treatment. Over a span of 35 days, with 20 days in ICU , and rest 15 days in Private room, patient clinically recovered. With Initial deterioration, interspersed with varying level of consciousness, patient recovered, with initial improvement in basic vital signs, followed by Consciousness level, followed by speech, but, inability to move limbs persisted. Patient was accepting orally. Upon discharge, patient was stable, with speech therapy and Physiotherapy advised, at home. One year later, patient is well, with no apparent signs of disease, with patient walking independently except for wide-stepped gait, and persisting lower limb weakness.

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