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Ayurveda

AYURVEDIC MANAGEMENT OF SEVERE OPEN PEDIATRIC HEAD INJURY- A CASE STUDY

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ABSTRACT Head Injury in infancy and childhood has been documented as one of the most common causes of death. It is the leading cause for disability among children and young adults. Head injury is termed as 'Shirobhighat' in Ayurved. Very few paediatric head injury cases reach for Ayurvedic management as people believe that it is in the domain of Modern science only. Here is the case study of severe open pediatric head injury that could not be managed by Modern surgery, but was successfully managed by Ayurvedic line of treatment.

KEYWORDS : Pediatric, Head injury, Ayurvedic treatment, Shirobhighat

Introduction:-

Head injury or traumatic brain injury (TBI) occurs due to sudden trauma to the head causing brain damage. Due to an impact injury of the brain in which there is diffuse damage to the brain cells causing severe deficit which can be physical, mental or emotional[1]. The management of such individuals is a medical/ surgical emergency. The mortality is 20% - 50% documented depending on the extent of damage to the brain2. Further this is a long-term challenge, since the brain damage affects the entire body and recovery may be possible with some permanent disability.[1]

It is the leading cause for disability among children and young adults. In India, children between 1 to 15 years comprise about 35% of the total population. Head Injury in infancy and childhood has been documented as one of the most common causes of death. In one study in India conducted at Department of Neurosurgery, PGIMER, Chandigarh, it was documented that head injury in children was observed in 56.5% cases was due to fall from height, followed by 21% due to road traffic accidents, other modes were simple falls from chair or bed (17.5 %) and falling of heavy objects on the head[3].

Head injury is termed as 'Shirobhighat' in Ayurved. Here is the case study of successful management of severe open paediatric head injury by Ayurvedic line of treatment:-

A four year old male child suffered severe open head injury falling from second floor on 28th June 2014. He had following symptoms:-

Nasal bleeding ++
Bleeding from ears +
No H/o Vomitting
No H/o Convulsions
Loss of consciousness lasting about one hour
He was immediately admitted to one of the reputed corporate hospitals in Pune.

Observations:- On admission Pt. had swelling on Lt. orbital region with inability to open Lt. eye. Child was drowsy, responding to deep stimuli.

There were wounds on following sites:- Lt. frontal region 3cm x 0.5cm & 4cm x0.1 cm. in size.

There were wounds noted on Rt. frontal region of 2cm x 0.5cm size & Lt. parietal region of size 3 cm x 1 cm . Wound on Rt. occipital region 4cm x 0.2cm.

All the wounds were sutured. There was constant oozing of serous fluid from the Lt. parietal region wound site.

There was swelling on Lt. eye noted with darkness present around Lt. eye.

There was paresis noted in the upper & lower extremities on Rt. side.

Child had vomiting+ after 24 hours of admission. Urinary incontinence+

Child developed Aphasia and oedema over face on 3rd day.

CT scan revealed Lt. orbital hematoma of size 3.5 cm x 2.5 cm x 2 cm. Parents were advised to be ready for surgery for their child i.e. **Craniotomy with duroplasty. The cost of the operation was told to be Rs. 7-8 lacs.** Further there was no assurance given to parents about the safety of life of the child after the surgery and no assurance of recovery without disability. Father of the child being a poor laborer could not afford to pay the huge amount for the surgery; therefore decided to shift the child to Sassoon General Hospitals, Pune. This hospital is the teaching Govt. hospital of B.J. Medical college, Pune. Pt. was admitted in the Surgical ward on 3rd July, 2014.

On admission in surgical ward on 3/7/2014, Clinically Pt was drowsy, semi conscious, G.C. guarded

Afebrile, Pulse-100/min
Pupils B/L semi dilated- reacting to light
Lt. orbital swelling +
Lt. orbital hematoma +
Aphasia +
Rt sided hemi paresis +
CT scan on 3/7/2014 revealed following findings:-

- Haemorrhagic contusion of size- 3.5 x2.5 cm on Lt. basi-frontal region.
- Sub arachnoid hemorrhage noted in Lt. frontal region
- E/o Minimally depressed fracture of Lt. frontal bone was noted
- Extra axial bleed of maximum thickness 6 mm in Lt. frontal region & 2 mm in Lt. parietal region
- E/o Ill -defined hypo density noted in Lt. cerebral hemisphere predominantly involving temporal & occipital region s/o MCA territory infarct
- Pneumo cephalus noted in Lt. parietal region
- Ventricular system appears effaced
- Generalized cerebral oedema
- USG abdomen showed minimal fluid in pelvis.
- H/o convulsions + once on 5/7/2014 & on 6/7/2014- three times. Urine not passed.

M.R.I findings dated 10/7/2014

- Hemorrhagic contusion in Lt. frontal lobe of size 2.6 x 1.9 cm
- Multiple patchy areas of diffusion restriction predominantly involving the cortical rim of Lt. fronto -parietal & temporal lobe, Lt. caudate nucleus & Lt. thalamus. These could represent sequele of Acute hypoxic insult secondary to vascular spasm involving the Lt. ICA.
- Extensive S.A.H. in Lt. fronto parietal lobe.
- The extra axial bleed in Lt. fronto parietal region with bilateral subdural hygromas.
- Generalized cerebral oedema.

Parents were given understanding in writing that the condition of their child was critical.

The child remained under the treatment of surgical ward till 12/07/2014. There was no improvement in the condition of the child. **The child was transferred to Ayurvedic ward with the note that no more medical/ surgical management was possible.** The child was admitted in Ayurvedic ward on 12/7/2014.

Observations on admission to Ayurvedic ward:-On admission in Ayurvedic ward the clinical condition of the child was as follows:-

Child semiconscious, not oriented, not responding to verbal comma nds, Rt. eyeball converged medially, staring look, Lt. eye closed, blackish discoloration noted around Lt. eye. Fever+, Aphasia +, Peri-orbital oedema++, Constipated+, Kshudhamandya (low appetite) +, Nidra -khandit (sleep disturbed)

Vam hasta pad kriya hani + (Movement of Lt. upper & lower limb weakly present)

Dakshin hasta- pad kriya hani +++ - (No movement of Rt. upper & lower limb)

Movement of eye -Nasti (No)
Annavaha- Annabhilasha very low (Low appetite)
Mansvaha -sanhnan ↓↓
Medovaha-Swed ↓ sanhnan ↓↓
Asthivaha -Asthi dhatu -Kshat, sandhishool- Nasti
Majjavaha- Nidranash
Purishvaha-Malawshtambh
Mutravaha-Cathterised with Fowley's catheter with urosac .
Swedavaha- Avishesh

Lab investigations:-Hb-11.2 gm %, Hematocrit-31.6 %, Platelates-4,22000/cmm , RBCs-4.75 millions/cmm, WBCs-17,200/cmm

Serum Albumin-4.6 gm, Globulin-3.217 gm, Total proteins-7.8 gm, Alk. phosphatase- 1309, SGOT- 149 units, SGPT-60 units, Total serum Bilirubin-0.8 mg/dl

Creatinine- 0.4 mg./dl, Uric acid- 2.8 mg/dl
Na^{+}- 144.2, K^{+}-4.6

Granthkaras mentioned that, when there is Chhardi following Shirobhighat (Head injury) it is termed as 'Pranavritta Udan', when there is no control over mictuirition after head injury, termed as 'Pranavritta Apan', when H/o convulsions then termed as 'Pranavritta Vyan'; due to Shirobhighat, when there is Mandagni, it is termed as 'Pranavritta Saman'[4]. In the present case all of these were observed. As per modern science, this was a case of open head injury in which there was fracture of skull associated with tear of dura and arachnoid resulting in to C.S.F. leak to the external environment [5].

The child was treated by Ayurvedic drugs & some panchakarmas like, snehan (body massage with medicated oil) and Pindswed, Nasya, Basti, Shiro Pichu, Wran karma etc. Brain is considered as Sadya pranhar marma. Granthkaras said, 'Vayu tantra-yantradharah' Therefore to pacify Aghatjanya Vat-prakop, Vata chikitsa was done. Sneha is the best chikitsa to pacify Vata; therefore Shiro Pichu was kept with Bala tail. Snehan-(Bahya & Abhyantar), Swedan (Pind) was given. Snehan corrects gati of all Vayus & give strengths to body including all indriyas (Ch. Si.1/7). Nasya nourishes Uttamang/ Brain and it increases Indriya & Manobala. Further it decreases Sanchit doshas. Therefore Granthkaras have stated that 'Nasa hi shirso dwaram' (Ch. Si.9/88). Therefore Nasya treatment was given. The best treatment of Vata is by Basti chikitsa. Therefore Basti chikitsa was given (Yog basti & Majja Basti). Due to this treatment Pranavrutta Udan, Vyan, Saman & Apan were corrected.

On first day of admission in Ayurvedic ward, *Asthapana Basti* of Dashmool quath + Narayan tail was given, For Aghataj vat shaman *Pichu of Bala tail on shirobhag* & tied by dressing. Then Vacha choorna udvartan was made.

On 2nd day, 1-1 drop Bala tail *Nasya* given. Matra Basti by Bala tail 20 ml was given. The wound from where there was serous discharge was treated with a medicated oil Jatyadi tail. Gokshur quath 2 TSF twice daily with Bramhi vati 1 BD in crushed form.

On 3rd day and onwards Nasya- facial massage with Bala tail was done daily followed by mrudu swedan & drops of Panchendriya vardhan tail instilled in both the nostrils. Asthapana Basti was given by Dashmool quath + Narayan tail. Full body massage by Narayan tail & Dashmool tail. Pindswed was done every day twice daily, this is a treatment of rice[Shashtika shali] + mash +kale til [Black Sesame seed] cooked in Bala, Ashwagandha and Devdar bharad kadha [decoction] and dipped in to warm millk and applied all over the body.

Further treatment started from 5th day onwards as follows:-

- Patient was given ½ TSF Tiktaghrit (medicated cow-ghee) in warm water daily
- Gokshur quath 2 TSF twice daily
- Bramhi vati 1tab twice daily
- Amrutarishta 1 TSF twice daily for fever
- Sitopaladi churna + Avipattikar 500 mg thrice daily.
- Jatyadi oil applied on the lacerated wounds for faster healing.
- Erand oil was also applied on the wounds for smoothening effect.
- From 8th day
- We added Vidangarisht 5 ml. twice daily
- Saraswat choorna 500 mg + Sita - (Sacckarum purificitum) 500 mg
- Ekang veer rasa ½ tab thrice daily
- Child was given Majja-Basti, followed by Asthapana Basti on the next day, followed by Matra Basti of Bala + Narayan tail on next day. This cycle was repeated 7 times.
- Pt.was given Siddha milk containing Ashwagandha, Shatawari, Sunthi, Sariva, Kawachbeej, Manjista & Haridra along with Sitopaladi choorna twice daily.
- Roasted Chana- Bengal gram + Khadi sugar i.e. Sita - (Sacckarum purificitum)
- Proteinex powder in warm water
- From 10th day onwards
- He was also given Laddu of Rajgira.
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Cliinical Improvement details:-

- **On the 3rd day of admission in Ayurvedic ward** the child who was having aphasia cried well, giving the indication that child started responding to treatment & parents were also convinced about utility of Ayurvedic treatment. Rt. upper & lower limb showed feeble movement,
- Urine catheter removed. Child passed urine twice.
- On 4th day, Child showed good appetite, ate semi solid food. Cry sound louder +, peri orbital swelling started reducing.
- On 5th day Pt. started moving limbs, started responding to verbal commands,
- On 6th day tone in muscles started showing improvement, opened both eyes, obeyed verbal commands. Stool passed, urination 3-4 times(involuntary)- Sanvedana nasti
- Intra- cath removed
- On 7th day, stool passed twice, urine passed well - voluntarily.
- On 10th day peri- orbital oedema reduced, Eye movements normal, slept well
- On 11th day, oriented, fully conscious, recognized parents & other known persons, Lid oedema reduced,
- On 12 th day, G.C. stable, alert for sounds, Lt arm and Lt. leg weakness still present, but good recovery
- On 14 th day, child started sitting, Rt. hand weakness noted, Rt. leg movements seen, Lt hand & Lt leg movements noted. Good recovery.
- On 15 th day, Rt. hand weakness persists, child started walking with support, tone in Lt hand & Lt leg improved to normal
- On 16th day, Pt. had mild fever: temp- 1000 F treated with Amrutarista
- On 17th day, Pt. had fever: temp- 99.60 F treated by Mahasudarshan kadha 1 TSF + Sitopaladi choorna 500 mg BD & it subsided.
- On 20 th day child started walking without support- most notable improvement. However Rt. hand weakness persisted.
- On 24 th day, child started speaking few words, peri- orbital oedema absent
- On 26 th day, child elevated Rt upper limb, muscle tone in Rt. upper limb increased, child clearly spoke few words
- On 30 th day complete wound healing was achieved.
- Physiotherapy was given as supportive treatment to improve muscle power in Rt. upper & lower limb for 3 weeks.
- On discharge: Child regained full muscle power in both limbs -Rt side
- **Child was given discharge on 21/10/2014.**

Follow up MRI findings on 24/12/2014 revealed :-
Changes of gliosis involving the Lt. fronto-parietal & superior temporal region with exvacuo dilatation of entire Lt. lateral ventricle s/o old Lt. MCA territory infarct.

However it is surprising to mention that the MRI findings did not match clinically. Despite the deficiencies seen from MRI, child did not exhibit any disability.

Follow up after 2 years: Clinically the child is perfectly normal with no adverse change in his intelligence & behavior. Further there is no weakness or disability whatsoever that normally remain after recovery from such a severe open head injury. Child runs, plays normally with friends of his age group, and plays computer games swiftly. The child is kept on Phenytoin for prophylaxis of epilepsy.

This case study has given concrete evidence that Ayurvedic treatment can successfully treat a severe head injury case & such cases could be treated conservatively (without surgery). If Ayurveda is given adequate opportunity to treat such types of critical cases, costly surgical intervention may no longer will be required.

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Fig. No.1. On 3rd day

Fig. No.2: On 3rd day

Fig. No.3: On 8 th day

Fig. No.4: On 21st day

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