

Case Report:

Case Report: Severe Brachial Plexopathy – Management and rehabilitation with multiple complimentary therapies

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Abstract:

Brachial plexopathy is an injury to the brachial plexus. Damage to the brachial plexus is usually caused by direct nerve injury, stretching injuries (including birth trauma), pressure from tumors in the area (especially lung tumors), or damage that results from radiation therapy. The demographics of brachial plexus injuries depend on the etiology of the injury. Traumatic injuries are more common in men between the ages of 15 and 25. Like traumatic spinal cord injuries, these injuries are most commonly associated with motor vehicle and often motorcycle collisions. In adults, the most common cause of brachial plexus injury is trauma, either from compression or traction. Here we presented the case of a 20-year-old young boy with severe Rt. Brachial plexopathy. Our patient is an untreated case of brachial plexus injury due to a traffic accident, who presented to us 7 months after the injury. He was treated with a combination of therapies that included acupuncture, Ayurveda, panchakarma and physiotherapy. Patient management using combined therapies is our fundamental unique change for this type of patient at our center. Severe disability due to global brachial plexopathy due to trauma that was left untreated in the first 6 months was treated and disability could be significantly reduced by combining multiple adjunctive therapies along with physical therapy simultaneously under one roof.

Keywords: Brachial Plexopathy, Rehabilitation, Complimentary Therapies, Physiotherapy

Background:

Brachial plexus problems are regularly encountered by neurologists during inpatient and outpatient consultations. ¹ Diverse disorders affect the brachial plexus and the cervical radicles in the cervical canal. ² The often encountered problem of differentiating radiculopathies from plexopathies often proves difficult to solve. ³ However, despite improvements in surgical techniques, even though these lead to improvements in the final result, the functionality of the upper extremity is often disappointing. The goal of conservative treatment is to maintain the range of motion of the limb, strengthen the remaining functional muscles, protect denervated dermatomes, and manage pain. Patient management using combined therapies is our fundamental unique change in this type of patient at our center.

Case Report:

We reported a case of 20 years old boy patient presented with weakness of right upper limb with loss of sensations since 7 months followed by fall from motor bike in a Road Traffic Accident. He had CLW over head & forehead

with Right upper limb weakness at that time. His reports suggested a normal MRI brain & spine report. NCS of right upper limb revealed severe brachial plexopathy beyond insertion. He was advised Exploration of Brachial plexus with nerve transfer at that time by treating surgeon; but patient & relatives denied it due their financial problems. His CT angio of Right upper limb showed Right Subclavian artery stenosis. Vascular surgeon didn't advise any intervention as the limb was well collateralized.

When patient approached us 7 months after injury, he had absolute weakness of Right upper limb with total loss of sensation. On examination his motor power was- Trapezius Motor 4/5, Shoulder Motor 0/5, elbow Motor 0/5, wrist motor 0/5, fingers Motor 0/5. He also had absolute sensory loss of right upper limb in C5-C8 area. As patient was presented 7 months after injury & due to which surgical option was ruled out, we decided to restore the function of Right brachial plexus with physiotherapy along with complimentary therapies –Acupuncture & Ayurved-Panchakarma. Patient was admitted for 10 days wherein he was given Acupuncture, Panchakarma & Physiotherapy for 10 days.

Acupuncture-a system of complementary medicine in which fine needles are inserted in the skin at specific points along what are considered to be lines of energy (meridians)

Acupuncture Points given were-GV 20, GB 21, LI 11, LI 15, UB 60, ST 41, ST 43, ST 36, GB 34, SP 10, SP 9, SP 6, K 3, GV 14,

UB 11, GV 14, GV 4, GV 5, TW 4, TW 5, LI4, EX 28, UB 40, UB 56

In **Ayurved Panchakarma** he was given-

- **Snehan** - Snehan refers to the massage of medicated oil over whole body for a specific period.
- **Sweadan**- Swedana, means to "perspire". It is used in Ayurvedic treatment. It is also called as steam therapy.
- **Shirodhara** -Shirodhara is a classical and a well-established ayurvedic procedure of slowly and steadily dripping medicated oil or other liquids on the forehead. This procedure induces a relaxed state of awareness that results in a dynamic psycho-somatic balance.
- **Nasya**- wherein Ayurvedic medicine in the oil forms is infused into the nostrils.
- **Basti**-Basti is the introduction of herbal decoctions and medicated oils into the colon through the rectum

In **Physiotherapy** he was given-Weight bearing, Relaxed Passive Movements, Bridging, Trunk rolling, Surge Faradic current to right upper limb, Nylon brushing to right upper limb.

After treatment for 10 days patient's sensory power fully recovered, motor power at shoulder improved from grade 0 to 2 & motor power at elbow improved from grade 0 to 1.

Motor power at wrist & fingers improved to grade 1 from 0.

Discussion

The incidence of brachial plexus injuries is increasing rapidly due to the increasing number of high-speed motor vehicle accidents. This is a devastating injury leading to significant functional impairment of patients. Trauma is the most common cause of brachial plexus injury. If not corrected in time with surgery, it can cause serious disability. Surgical management options include direct end-to-end repair, neurolysis, nerve transplantation, and nerve transfer (neurotization). Surgery should generally be performed within 6 months of injury.^{4,5,6}

The goal of conservative treatment is to maintain limb range of motion, strengthen remaining functional muscles, protect denervated dermatomes, and manage pain.⁷ Various surgical procedures have been reported to improve functional outcome. Which one is appropriate depends on the type of lesion. Unfortunately, the incidence of traumatic brachial plexus injuries is increasing, leading to serious problems with the quality of life of affected patients.⁸ As they often occur in young people, the social/financial consequences can be severe. Conservative treatment can help relieve pain and preserve some functionality or movement. Scientific and technical progress in recent years has significantly increased the importance of direct surgical operations such as neurolysis, nerve grafting, and nerve transfer, which, when combined with arthrodesis, tendon transfer, or transplantation of functioning free muscle, can improve any muscle functionality to at least some degree.⁹

Our center is specialist in patient management with the help of combination therapies the help to restore functioning ability of patient and this is found highly effective in such patient management with reducing surgical management burden. The clinician should strictly look towards these patient with managing by combination therapies.

Conclusion:

Severe disability due to global brachial plexopathy caused by trauma and which was left untreated in initial 6 months was treated & disability could be decreased significantly with combination of multiple complimentary therapies along with physiotherapy simultaneously under one roof, can be consider as unique way of management of such type of patients. Our case report highlighted the importance of such management.

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