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EXPLICIT APPRAISAL ON INTEGRATIVE APPROACH TREATING JOINT, BONE AND NERVE INJURY AFFECTING SHOULDER JOINT

Integrative Medicine

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ABSTRACT

Integrative management using Ayurveda and Physiotherapy is an innovative approach. Integrated treatments are very effective in three different conditions with joint, bone and nerve associated with shoulder joint. Recurrent anterior shoulder dislocation (RASD) occurs due to muscular weakness mainly. Second condition is scapular fracture fixed with open reduction and internal fixation (ORIF), third condition is neonatal brachial plexus palsy (BPP). All three conditions have abhighata janya (traumatic origin) as etiological factor. In RASD Amsa sandhi (shoulder joint) is affected. In scapular fracture Asthi (bone) is involved and in BPP trauma of C5-T1 nerves are injured. This leads to Mamsa dhatu ksheenata (shoulder girdle weakness) hindering daily activities. Shoulder joint is most mobile joint in body supported by loose joint capsule and muscles around the joint. Most common complications that arise in shoulder joint in all three conditions are pain, muscle weakness and wasting, subluxation/dislocation, joint stiffness and limb discrepancy especially in children with BPP. All three conditions were treated with Sthanika abhyanga (SA) and Shashtika shali pinda sweda (SSPS) for dhatu poshana (tissue nourishing). Physiotherapy treatments were selected according to the condition for cumulative effect and exercises as part of rehabilitation to carry out unhindered daily activities. An explicit appraisal on successfully treated conditions with integrative treatments is discussed.

KEYWORDS

Brachial plexus palsy, recurrent anterior shoulder dislocation, shashtika shali pinda sweda, Physiotherapy and integrative treatment.

INTRODUCTION:

Integrative treatment is an emerging approach for various ailments for cumulative effect. Ayurveda is Indian traditional system of medicine and Physiotherapy helps to improve functional activities in daily life or quality of life. Any system is mainly designed for patient to lead a normal or near normal life. In this process AYUSH departments are working together to bring about better results with integrative approach. This is an effort to put forth Ayurveda and Physiotherapy treatments though both systems are having different treatment principles yet work miraculously when used integrated. There are many myths that Ayurveda may not be beneficial or contra indicated along with Physiotherapy or rather work parallel and can't be integrated for optimal benefits. It is also true that a correct logic is required when two different systems are integrated. Considering the basic principles and contraindications of each system, apt selection of treatment modalities facilitates maximum benefits of both systems. Physiotherapy is given externally hence in all three conditions only *bahyopakramas* (external treatments) were selected as treatment of choice.

CASE STUDY:

A 38 year old patient with a history of fourth recurrent anterior shoulder dislocation was reduced under anesthesia and immobilized in a sling for 6 weeks.[1] A 40 years aged person met with road traffic accident, had fracture scapular body and glenoid left shoulder and treated with ORIF with recon plate fixation.[2] A 4 month old baby presented with complaints of inability to move her right upper limb completely and abnormal position, increasing since her birth diagnosed as BPP at 4 months of age.[3] All these three conditions were treated with integrative approach at SGS Hospital.

Common aspects in *Samprapti*:

In RASD, after one dislocation there are more chances of reoccurrence if muscles are not strengthened properly. 4th episode of RASD is taken up where shoulder muscles are much weaker. Scapular bone fracture after internal fixation and immobilization later resulted in weakness of muscles around shoulder. BPP is nerve injury that leads to weakness of hand depending on the site and number of roots involved (C_5-T_1).[4] In all the 3 conditions of RASD, scapular fracture and BPP etiology is *Abhighata janya* (traumatic origin) due to which joint, bone and nerve are is injured respectively. Due to impact of trauma, different areas and tissues are affected yet the most affected is the shoulder joint. As it is known shoulder joint rather than being supported by bony structure, loose joint capsule and muscles (Table-1) around the joint support the shoulder and bring about maximum mobility in joint. Due to weakness and pain, hand/shoulder joint is not used optimally as required. This further can lead to *Mamsa dhatu ksheenata* (wasting of shoulder muscles). Muscular weakness can further get complicated with shoulder subluxation or dislocation. Hence proper rehabilitative intervention is essential to carry out near normal life (Plate–1).

Common aspects in integrative treatment:

According to Ayurveda the main treatment principle is *Viparyaya chikitsa* (opposite in nature to pathology) and *Samprapti vighatana* (interruption of pathology). Hence *Santarpana janya chikitsa* (nourishing treatment) is the main line of treatment in the three conditions. Since the dosha involved is *vata*, SA with oils like *maha masha tala, ashwagandha bala lakshadi taila* and/or *bala taila* helped control vitiated *vata* as well as nourishing the tissues. SSPS is also nourishing in nature that helped *dhatu poshana* (nourishment of tissues - bone, joint, muscle and nerve) was observed in all three conditions. Physiotherapy treatments were selected accordingly IFT along with exercises; active assisted and active exercises and electric stimulation with exercises were selected for the three conditions respectively. Thus with integrative approach of Ayurveda and Physiotherapy treatments all the three conditions were successfully treated with optimal results in SGS Hospital (Plate–2).

DISCUSSION:

Ayurveda is Indian traditional system of medicine that cures aliments with internal medication and pancha karma treatments balancing the *tridoshas*. Physiotherapy or Physical therapy is allied health care that addresses the illnesses or injuries that limit a person's abilities to carry out daily life functional activities. In present day scenario with changing *dinacharya* (daily activities) due to lifestyle changes; following traditional system is restricted to carry out the treatments. Hence to obtain optimal results integration of systems is an innovative choice. Selection of treatment modalities that enhance the result and not interfering with other system is the key cue in integrating systems of Ayurveda and Physiotherapy. Only then the results can be optimal like these three conditions.

In RASD, SA and SSPS treatments strengthens shoulder muscles. Interferential therapy (IFT) brings anti-inflammatory and analgesic effect. Active assisted and or active exercises rehabilitates the muscles to carry out shoulder joint movements. Shoulder muscle strengthening is the goal of the entire rehabilitation program in RASD. Hence in this condition Ayurveda treatments improved muscle strength and improved muscle strength was used to improve joint mobility with exercises and IFT. Hence cumulatively it helps patient to have better tolerance with pain to carry out exercises. In all Ayurveda treatments *ativyayama* (excessive exercising) etc were listed by Acharyas in treatise. Hence care shall be taken while exercising, limiting to 10 joint movements to avoid *vyayama dosha*. Ayurveda treatments shall be followed by exercising to improve the strength of muscles, only then the rehabilitation is effective. Thus considering both systems positive effects yet not contradicting with other system would be apt modalities for the condition.

After road traffic accident, patient had fracture scapular body and glenoid left shoulder and treated with ORIF with recon plate fixation. Post operation physiotherapy was taken by patient for 4 months but could not hold arm above 90° as arm was dropping down. With SA and SSPS the muscle power was improved. In this case every care was taken to avoid applying pressure over the internal fixed area. Only application of selected oils was done in SA. SSPS was done over the muscular area. Thus adopting such changes during treatment is essential for optimal benefits and prevention of complications. Passive exercises were also avoided to prevent any external force over tissue of internal fixation. Hence only active assisted and active exercises were encouraged. Since these were changes were adopted from regular treatment methods, the results were encouraging. With cumulative effects of integrative treatments for 10 days patient could achieve the strength and full active range of motion to carry out unhindered daily activities.

In BPP nerve is involved hence requires multiple sessions; however the results are encouraging. SA and SSPS facilitate *dhatu poshana* (nourishing the tissues). The ingredient of SA and SSPS decides the final effect on the tissues though the procedure seems same in all the three conditions. Muscle power with 0-2 activity is not visible hence till then electric stimulation helps rehabilitate the nerve and muscles as well. Thus depending on the condition the ingredients of SA and SSPS would vary along with Physiotherapy modality.

There is a common myth that *abhyanga* (oil massage) would induce spasticity and hence no oil massage should be done since it would only hamper the progress. This is a pure myth created due lack of understanding of the action of the modalities. Especially in neurological conditions like BPP, initially patient would have muscles with zero muscle power. Hence arm seems to drop and the muscles seem to be loose without tone. With sessions the muscle power improves and the real picture of neurological deficit of spastic paralysis will be elicited. Spasticity hinders the patient to move the limb even when done passively by Therapist. However continuing with treatments would improve the situation gradually. Hence *abhyanga* shall not be considered as wrong or bad treatment that should not be adopted; it is just a myth. In fact when used depending on condition it is the most effective simple Ayurveda treatment adopted for *Vata dosha niyantrana* (control of *vata*).

Other advantage of integrated treatments is that in all three conditions patient's musculo-skeletal system is strengthened to support shoulder joint. Minimization of splint/brace support was easily achieved with few days' treatment. With integrated treatments muscle strength is gained that is required to maintain joint in position. Hence splint could be removed and continue with home program exercises in between sessions. By the end of sessions patient could be more independent carrying out unhindered daily activities. The treatment modalities selected were *dhatu poshaka* (tissue strengthening). Hence joint, bone and nerve tissues repair is enhanced with Ayurveda and Physiotherapy treatments thus making rehabilitation regime easier. Any complications like pain, muscle weakness and wasting, subluxation/dislocation, joint stiffness and limb discrepancy especially in children with BPP were also effectively prevented with integrated treatments. Thus proper selection of integrated treatment modalities that enhance action and not hinder with each other is key for the successful integrated management.

CONCLUSION:

Cumulative effects of integrative treatments facilitate quick recovery. Hence early intervention of integrated treatments within 6 months to1 year of incidence yields appreciable results preventing long term complications. Thus the ultimate goal to carry out unhindered daily activities would be successfully accomplished with integrated treatments.

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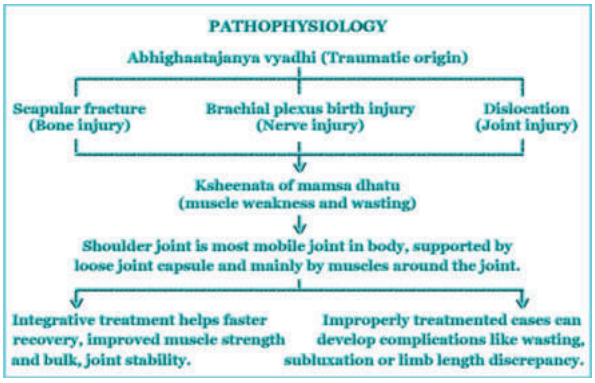
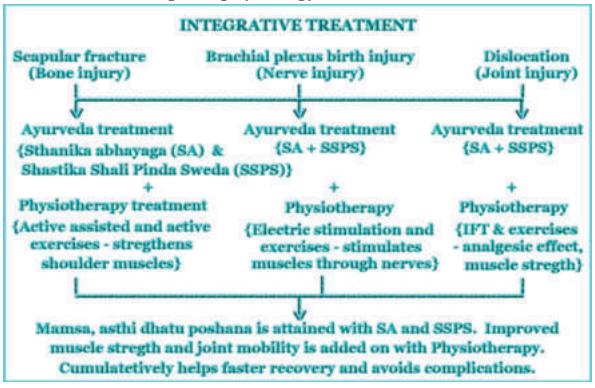


Plate–1: Common pathophysiology in all the three cases



Plate–2: Common integrative treatment in all the three cases

Table-1: Shoulder muscles responsible for support and movement of shoulder joint.[1]

Movement	Muscles
Scapular retraction/ adduction	Rhomboideus major, Rhomboideus minor, and Trapezius.
Scapular protraction/ abduction	Serratus anterior (prime mover), Pectoralis minor and Pectoralis major.
Scapular elevation	Levator scapulae, upper fibers Trapezius.
Scapular depression	Pectoralis minor, lower fibers Trapezius, Subclavius, Latissimus dorsi.
Arm abduction	Supraspinatus (first 15o), Deltoid and Scapular protractor muscles
Arm adduction	Scapular depressors, Latissimus dorsi, Subscapularis, Teres major and minor, Infraspinatus, Pectoralis major, long head of Triceps, Coracobrachialis.
Arm flexion	Pectoralis major, Coracobrachialis, Biceps brachii, anterior fibers of Deltoid.
Arm extension	Latissimus dorsi and teres major, long head of Triceps, posterior fibers of Deltoid.
Arm circumduction	Pectoralis major, Subscapularis, Coracobrachialis, Biceps brachii, Supraspinatus, Deltoid, Latissimus dorsi, Teres major and minor, Infraspinatus, long head of Triceps.

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