

Effectiveness of Static Dry Cupping Therapy on Increased Forward Head Posture: A Case Report

Reema Rasotra*

Assistant Professor, Department of Physiotherapy, Lovely Professional University, Phagwara, Punjab, India

***Corresponding Author:** Reema Rasotra, Assistant Professor, Department of Physiotherapy, Lovely Professional University, Phagwara, Punjab, India.

Received: November 14, 2022; **Published:** November 28, 2022

Abstract

Introduction: Cupping therapy is an ancient form of treatment in which cups of various size and shape are applied on the acupressure points. It is generally being practiced in many countries even in India. Basically cupping is of four type's i.e. Dry cupping, wet cupping, Fire cupping and dynamic cupping. Cupping therapy has certain benefits followed by side effects also. Cupping therapy is very helpful in decreasing pain, tight muscles spasm etc. As number of research has been done on cupping therapy but in this study our main focus was to see the effect of cupping therapy on forward head posture. So, we gave static dry cupping therapy to the patient having forward head posture along with other intervention therapy.

Case Description: A 45 years old woman reported to world care physiotherapy center with pain in head since last 5 days. Along with this patient was having nausea feeling and heaviness of upper body. According to patient she has been admitted in hospital with same problem 6 months back. On assessment patient posture was analyzed in anterior, posterior and lateral view to rule out the abnormalities. After this motor as well as sensory examination was done of the patient. In sensory examination we checked superficial, deep and cortical sensations. In motor examination we assessed the active, passive range of motion, manual muscle testing. After this forward head measurement was taken. Then patient was advised to go for digital x-ray of cervical spine. After x-ray the anterior translation angle of the head was measured from the Xray. Then patient was given physiotherapy intervention for 4 weeks and again assessment was taken to rule out the outcome measures.

Intervention: 4 weeks of Intervention program was set for the patient. In first week we gave hot fermentation with active range of motion exercises for cervical region. Along with this we gave isometric exercises for cervical region to strengthen up the cervical region. In 2nd, 3rd and 4th week we gave static dry cupping therapy on acupuncture points to the patient on neck and upper cervical region for about 10 minutes. After this patient was given icepacks for about 5 minutes to decrease post treatment muscle soreness. Again isometric exercises of cervical region were taught to the patient. After complete intervention program outcome measures was taken to rule out the significant improvement.

Outcome Measures: After the complete intervention programme outcome measures were taken. The active range of motion and passive range of motion of cervical spine was measured with the universal goniometer which showed significant improvement in the ranges of cervical region. Then MMT was done and it also shows the positive outcome measures. Then forward head posture was measured by two methods i.e. in standing and with the help of x-ray measurement. In both the measurements of forward head was decreased as compared to the normal.

Keywords: Cupping Therapy; Cervical Pain; Acupuncture Points; Strengthening Exercises; Health

Introduction

According to alternative medicine-Cupping therapy is an ancient form of alternative medicine in which a therapist puts special cups on your skin for a few minutes to create suction. Cupping therapy is used on acupoints. It works with Qi/Chi energy flow. It is one of the very ancient types of treatment. It is also used on triggers points usually practice in many countries like-China, Greece, America, Japan, India and Pakistan [1].

The purpose of cupping therapy is pain relief, inflammation reduction, increase blood flow, deep-tissue massage, myofascial release, relaxation release and to drain excess fluids and toxins from the body. There are 4 types of cupping therapy: a) Dry cupping, b) Fire cupping, c) Wet cupping/Hijama, d) Dynamic/moving cupping [2]. a) In dry cupping usually mechanical pressure through mechanical suction pump is used to create the vacuum. The cups are made up of fibers with different shapes and sizes which vary from 1 to 3 inches (25 to 76 mm) across the opening. Silicon/Rubber cups are also available that squeeze the air out and adapt to uneven or bony surfaces. b) Fire cupping involves soaking a cotton ball in almost pure alcohol. The cotton is clamped by a pair of forceps and lit via match or lighter, and, in one motion, placed into the cup and quickly removed, while the cup is placed on the skin. Fire heats the inside of the cup and a small amount of suction is created by the air cooling down again and contracting. This way vacuum is created for suction. c) Wet cupping is also known as Hijama or medicinal bleeding. This cupping requires proper sterilization technique. First dry cupping is applied for 2 - 3 minutes and then removed. In the cup area small surgical incisions are made with surgical blade in order to allow for the elimination of toxic blood and fluids. Then the cup is applied so that the blood is sucked out in the cup. Small skin incisions are made to open up the skin barrier. This helps to detoxify the body and also triggers auto immune response for a natural. This cupping technique is used mainly for myofascial release purpose or massage and relaxation purpose. It is one of the manual techniques used for muscle release and trigger point release in larger muscles especially -calf, back muscle, thigh muscles and trapezius. Massage oil are applied to create a better seal as well as allow the cups to glide over muscle groups (e.g. trapezius, erectors, latissimus dorsi, calf etc.) in an act called "moving cupping". Types of cup used in cupping therapy are of different types such as: 1. Glass cup (Fire cupping), 2. Bamboo cup (ancient times), 3. Silicon cup, 4. Fibers cup, 5. Horns and pottery (ancient times) [3].

Side Effects of cupping therapy are: a) Redness of the skin and some amount of swelling when the blood and fluids accumulate under the skin, b) Bruises, c) Mild discomforts, d) Skin infection. Contraindications in case patient is suspected with any form of cancer, such as metastatic cancer, that has spread from one part of the body to another part of the body, b) Unresponsive or unconscious patient, c) Patient who are non-compliant [4].

Contraindications of cupping therapy is if there is fracture of bone in treatment area, ulcer or deep vein thrombosis, serious heart disease, heart failure, hemophilic patient or patients who are being treated with anticoagulant. If the patient has a pulse that is easily felt like in hyperpyrexia, infection etc. and also any undiagnosed condition where patient does not show any sign of improvement and if the patient is experiencing or may be suspected of having any form of cancer, such as metastatic cancer, that has spread from one part of the body to another part of the body. Unresponsive or unconscious patient. Patient who are non-compliant [5].

Case Description

A 45 years old women with height 5, 2" and weight 85 kg came to world care Physiotherapy center, Gurdaspur with chief complaint of pain in head since last 5 days. Patient also complains of feeling of heaviness in upper body with pain radiating to lower back. Along with this she is feeling difficulty in doing all the movements of cervical region. Sometimes in between she feels nausea and vertigo also with stiffness of shoulder region. History of past illness states that patient had same problem 6 months before also. So, she was being admitted to nearby multispecialty hospital for 6 days. As her headache was not relieved by medication. According to patient sometimes she has severe radiating pain from eyes to occiput region which continues for many days and affected her health. By occupation patient is a tailor.

She is daily using stitching machine for about 6 - 8 hours. Medical history states that patient is a hypertensive patient since last 3 years and is on medication for the same. Personal history reveals that she is vegetarian since by birth. Surgical history states that patient has 3 abdominal surgeries in which she had 2 caesarean section at age of 24 years and 27 years. Then she had cholecystectomy at age of 30 years. Drug History states that she is taking tablet of gramocef since last 3 years for high BP.

On observation it was noted that patient was obese. The lower cervical region from C5-C7 seems to be in flexion position along with upper thoracic region. There was rounding of shoulders with right shoulder elevated as compared to left shoulder. Occupational posture of patient is forward head posture with slouching posture. According to patient she is using 2 pillows below neck while sleeping. Posture analysis of the patient was done in 3 views i.e. anterior, posterior and lateral view.

In anterior view patient was standing in normal relaxed position. The plumb line was placed in the center of head to vertically downward bisecting the body into two equal halves i.e. right and left. In anterior view we noted that right shoulder was little elevated as compared to left shoulder. The ASIS of right side was slightly raised as compare to other side. The right ankle joint shows that foot is little everted. In posterior view again we analyzed the posture with the help of plumb line which divides the body again into two equal halves. We placed the plumb line at the occipital protuberance to vertically downward. The head was in extended position. The right shoulder was little elevated as compared to left shoulder. Right scapula seems to be raised as compared to left scapulae. The right side PSIS was raised as compare to left side. The gluteal fold of right side was little raised. The right seems to be in everted position. In lateral view we place plumb line vertically down from ears to acromion process. The head was in forward head position with chin in extended position. There was presence of lumbar lordosis also with protruded abdomen. Pelvis was not neutral it was in anteriorly tilted.

On palpation there was increased tenderness over cervical spinous process and upper thoracic region from C4-C8 level and T1-T5 level. The tone of the muscles of cervical region was increased. Temperature was raised on the upper thoracic region. The trigger points were also palpated over neck and shoulder region. There was presence of trigger point on sub occipital muscles of the neck, Erector spinae muscle group between the shoulder blades.

Pain assessment was done on cervical region. In which the type of pain was dull, nature intermittent, aggravating factors after doing stitching work for long duration in a neck flexed position, relieving factor on medication. During rest the NPRS score was 5 and during movement it was 8 according to the patient. The sensory examination i.e. superficial, deep and cortical all were Intact. After sensory examination, motor examination was done of the cervical spine and upper thoracic spine. Active and passive range of motion of cervical spine was decreased as compare to normal. It was measured by means of Universal Goniometer. The MMT of cervical spine was also decreased as compared to normal. Along with this cranial nerve examination was also done. In which we rule out that optic and accessory nerves were not fully intact as compared to other cranial nerves.

S. No.	Cervical Movements	AROM
1	Flexion	0*-30*
2	Extension	0*-20*
3	Lateral flexion (Right side)	0*-35*
4	Lateral flexion (Left side)	0*-35*
5	Rotation (Right side)	0*-40*
6	Rotation (Left side)	0*-40*

Table 1: Active range of motion of cervical spine.

S. No.	Cervical Movements	PROM
1	Flexion	0*-35*
2	Extension	0*-25*
3	Lateral flexion (Right side)	0*-40*
4	Lateral flexion (Left side)	0*-40*
5	Rotation (Right side)	0*-45*
6	Rotation (Left side)	0*-45*

Table 2: Passive range of motion of cervical spine.

S. No	Cervical movements	Grades
1	Flexion	3
2	Extension	3
3	Lateral flexion (Right side)	3
4	Lateral flexion (Left side)	3
5	Rotation (Right side)	3
6	Rotation (Left side)	3

Table 3: MMT of cervical spine.

S. No.	Names of cranial nerve	Status
1	Olfactory	Intact
2	Optic	Non-Intact
3	Oculomotor	Intact
4	Trochlear	Intact
5	Trigeminal	Intact
6	Abducens	Intact
7	Facial	Intact
8	Auditory	Intact
9	Glossopharyngeal	Intact
10	Vagus	Intact
11	Accessory	Non-Intact
12	Hypoglossal	Intact

Table 4: Cranial nerve examination.

The forward head measurement was done of the patient. In which we instruct the patient to stand along the wall by doing back against the wall [6]. We tell the patient to hold walker in front so that patient balance may not get affected while standing. Then we tell the patient to align full posterior side of body next to wall. From this we viewed that full body was in contact to the wall but there was huge distance between wall and head. After this we measure the amount of forward head posture by means of calibrate measuring scale. We place one end of scale against the wall and next end on the head of the patient from there we noted that there is 4 inches of distance between head and wall.

After this patient was advised to go for digital x-ray of cervical region i.e. PA view and lateral view. X-Ray scan of the patient reveals there is forward displacement of the head with increase in the c-shaped curve of cervical spine. There was osteophyte formation also at the edge of vertebrae of C5-C6 and C7. So, after x-ray we measured the anterior translation angle of forward head posture. In which we draw one straight line from C7 to occipital protuberance. The other line from C7 to vertically up towards the upper end of right eyebrow. Then two lines were drawn and at the angle at which they meet is known as angle of anterior translation. The angle was measured as 39.5 degree. After his Intervention plan was decided and explained to the patient.

Intervention

4 weeks of Intervention program was given to the patient. After Intervention again assessment of the patient was done to rule out the outcome measures. In this we choose dry cupping therapy, hot fermentation, cryotherapy, strengthening exercises as the intervention method. In a week 5 sessions of treatment was given in a month.

In first week we gave hot fermentation for relaxing the superficial fascia for 20 minutes on upper back region followed by active range of motion exercises (flexion, extension, side flexion (right side and left side), rotation (right side and left side) of cervical region with 15 repetitions each in prone lying position. Along with this we taught isometric exercises of cervical spine. In this we guided the patient to sit straight on a chair and place the hand in front of forehead and try to apply force towards the head and head force has to apply towards the hand. Secondly, we advise the patient to place both hands on the occipital region and apply force toward the occipital region and the head force towards the hands. Thirdly, we instruct the patient to place hand over the temporal region and apply inward force and opposite force will be applied by the head over the hand region. This could be repeated on both the sides i.e. right and left side.

In 2nd, 3rd and 4th week, we applied dry cupping therapy to relax the deep fascia by decreasing the tightness of the fascia inside. Site of application of cups were on neck and upper back according to the acupuncture points. In this patient lies prone and we apply normal little amount of mustard oil on the upper back and neck region of the patient. After applying mustard oil we used 12 glass cups of different sizes according to the part to be treated i.e. small size, normal size and medium size. Then we applied small sized cups on 8 acupuncture points i.e. 40, 41, 42, 39, 20, 21, 4 and 5 which are on the neck region. As the neck region is small. So, we chose small cups so that they can adhere to the skin completely. After this medium sized cups were applied on 1, 46, 45, 55 acupuncture points on upper back region. We filled the vacuum inside with a suction device till the skin drawn upward until the target area for about 10 minutes. After 10 minutes cups are being removed from neck and upper back region. At last we apply cryotherapy for 5 minutes on the part where cups were applied to decrease muscle soreness.

After the complete intervention program of 4 weeks we again advised the patient to go for digital x-ray of cervical region to rule out the positive or negative effect of the treatment.

Outcome measures

Pain assessment was done of cervical region after the complete intervention process. According to patient during rest the NPRS score was 2 and during movement it was 4. The sensory examination i.e. superficial, deep and cortical all were Intact. After sensory examination, motor examination was done of the cervical spine and upper thoracic spine. Active and passive range of motion of cervical spine was increased as compare to before. The MMT of cervical spine was also increased. Along with this cranial nerve examination was also done. In which we rule out that optic and accessory nerves which were not intact during the assessment examination were now intact after the intervention program.

S. No.	Cervical Movements	AROM
1	Flexion	0*-50*
2	Extension	0*-40*
3	Lateral flexion (Right side)	0*-40*
4	Lateral flexion (Left side)	0*-40*
5	Rotation (Right side)	0*-60*
6	Rotation (Left side)	0*-60*

Table 5: Active range of motion of cervical spine.

S. No.	Cervical Movements	PROM
1	Flexion	0*-55*
2	Extension	0*-45*
3	Lateral flexion (Right side)	0*-45*
4	Lateral flexion (Left side)	0*-45*
5	Rotation (Right side)	0*-60*
6	Rotation (Left side)	0*-60*

Table 6: Passive range of motion of cervical spine.

S. No	Cervical movements	Grades
1	Flexion	5
2	Extension	5
3	Lateral flexion (Right side)	4
4	Lateral flexion (Left side)	4
5	Rotation (Right side)	4
6	Rotation (Left side)	4

Table 7: MMT of cervical spine.

S. No.	Names of cranial nerve	Status
1	Olfactory	Intact
2	Optic	Non-Intact
3	Oculomotor	Intact
4	Trochlear	Intact
5	Trigeminal	Intact
6	Abducens	Intact
7	Facial	Intact
8	Auditory	Intact
9	Glossopharyngeal	Intact
10	Vagus	Intact
11	Accessory	Non-Intact
12	Hypoglossal	Intact

Table 8: Cranial nerve examination.

The forward head measurement was again assessed after the intervention in which we rule out that the distance between head and wall was left to be only 1 inch which was 4 inch before.

The anterior translation angle was again measured on the fresh digital x-ray taken after the intervention programme. The second x-ray reveals that the angle was decreased from 39.5 to 27 degree after the intervention programme.

Discussion

As there are numbers of studies being done on cervical pain management by various intervention measures. But this was the first trial study which was being done to see the effect of static dry cupping therapy on the forward head posture. As in first week we gave hot fermentation for relaxing the muscles of cervical spine along with upper back region. In second week, 3rd and 4th week we gave static dry cupping therapy on the various acupuncture points at neck and upper back region for about 10 minutes. As the patient had severe tight fascia so it was quiet painful for the patient to have cupping therapy for even 10 minutes. So, after the intervention we gave cryotherapy i.e. ice pack for about 5 minutes to decrease the post treatment muscle soreness.

After the intervention we checked the forward head by two measures i.e. while patient is standing along the wall and we are checking the distance by measuring scale. We noticed that there was decrease in the distance after the intervention programme. Second method was chosen in which we measure the anterior translation angle with the help of digital x-ray. From these two methods we proved that there was decrease in the forward head posture by our treatment method. Along with this there was increase in the strength of cervical muscles also which we increased after giving strengthening exercise to the patient. So, in this study we focused on many parameters like decreasing the pain, increasing the range of motion, decreasing the forward head posture and increasing the strength of the muscles. Though number of studies has been done for all there parameters but this was the first trial for decreasing the forward head posture by following static dry cupping therapy.

Conclusion

This case study depicts the significant outcome measures for the forward head posture. In this study we have significantly proved that there is increase in the active and passive range of motion of cervical region after the cupping therapy treatment. Along with this we saw outcome results in forward head measurements also. The score had decreased after the cupping therapy both in observational outcome and in x-ray measurement also. The cervical muscle strength also increased after the treatment as isometric exercises were taught to the patient. It was checked by manual muscle testing. During assessment MMT score was 3 and after the treatment MMT score was 5.

Bibliography

1. <https://www.webmd.com/balance/guide/cupping-therapy#1>
2. <https://www.healthline.com/health/cupping-therapy>
3. <https://www.medicinenet.com/cupping/article.htm>
4. <https://www.health.harvard.edu/blog/what-exactly-is-cupping-2016093010402>
5. https://www.physio-pedia.com/Forward_Head_Posture
6. <https://www.spine-health.com/conditions/neck-pain/forward-head-postures-effect-neck-muscles>

Volume 13 Issue 12 December 2022

©All rights reserved by Reema Rasotra.