



Review Article

ANATOMICAL ASPECT OF MOOLA BANDHA AND ITS BENEFITS

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ABSTRACT

The word *Bandha* means 'binding', 'tying a bond', 'to catch' or 'damming of a river', 'building a bridge'. These are the specific positions of body by which energy of body is restored. Anatomically *Bandha* is the contraction of specific muscles of body. *Mool Bandha* is the principle, key and primary *Bandha* of the *Yogic* tradition. *Moola* means 'Root', 'Base', or 'Source' and *Bandha* denotes 'Lock', 'posture', 'bondage' or 'catching hold of'. *Moola Bandha* results from the contraction of muscles surrounding the perineal body, which lies between the anus and genitals *Moola Bandha* is associated with the centre of perineum i.e., site of *Mooladhar chakra*. This consists of a contraction, a muscular lifting-up in the pelvic floor. Pelvic floor consists of Levator ani and coccygeus muscles. Overstretching of pelvic floor muscles and fascia during childbirth and pregnancy, trauma or congenital defect in pelvic floor musculature or some surgical procedures can damage pelvic musculature or can cause pelvic organs prolapse. *Moola Bandha* specially contracts the levator ani muscles. This strengthens the pelvic floor and tones the pelvic organs, thus prevents pelvic organs prolapse, calms the autonomic nervous system, improves blood supply to pelvic organs, prevents flow of energy from body and restrains energy at perineum. Contraction of pelvic diaphragm muscles and anal sphincters tones and strengthens the urogenital muscles, improves digestion and is also beneficial in conditions like haemorrhoids, constipation, hypertension, menstrual problems and anxiety.

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INTRODUCTION

Bandha are part of *Yoga* and used in *Pranayama* and *Nadi* arousal. The Sanskrit word *Bandha* means 'to hold', 'tighten' or 'Lock' [1]. The *Bandha* aims to lock the *Pranas* in particular areas and redirect their flow into *Sushumna Nadi* for the spiritual awakening. There are four *Bandha* described in *Gherand Samhita*- *Moola Bandha* (Pose of Root Lock), *Uddiyana Bandha* (Flying upward), *Jalandhar Bandha* (Chin Lock), *Maha Bandha* (Great Lock). The word *Moola* means 'Root', 'Foundation' or 'Bottom' and *Bandha* means 'Binding', 'tying', 'a bond' [2]. *Moola* also means *Mooladhar Chakra*, the seat of *Kundilini*. *Moola* is the region between anus and genitals (Perineum) or root of spine or centre of pelvic floor. The downward action of *Apana* should be directed upwards and there is union of *Prana* and *Apana* [3]. Muscles of Perineum especially anal sphincters and Levator ani are contracted and retained in contracted state for sometimes and then relaxed. Contraction of *Mooladhar* prevents the flow of energy from body. This increases the strength of muscles in perineum and pelvic floor and improves circulation in pelvic region. This also stimulates the nerves in the pelvic region and improves functioning of endocrine glands of reproductive and digestive system. So this is useful in various reproductive, excretory and digestive system disorders.

Technique of Moola Bandh

Moola Bandha is ideally performed in conjugation with *Mudras*, *Bandhas* and *Pranayamas*. If practised on its own, it should be performed after *Asanas* and *Pranayamas* and before meditation. *Moola Bandha* should be attempted first in *Antara Kumbhaka* (retention after inhalation). The region of the lower abdomen between the navel and anus is contracted towards the spine and pulled up to the diaphragm [4]. Following instructions [5] should be given to the subject to practice this *Bandha*:

- Sit in a comfortable meditative asana preferably *Siddha/Siddha yoni asana*, so that pressure is applied to the perineal region.
- Continue to breathe normally; do not hold the breath. Slowly contract the perineal region and hold the contraction.
- Be totally aware of the physical sensation.
- Contract a little tighter, but keep the rest of the body relaxed.
- Contract only those muscles related to the *Mooladhara/Perineum* region. In the beginning the anal and urinary sphincters will also contract, but as greater awareness and control is developed, this will

minimise and eventually cease. Ultimately one point of contraction will be felt.

- Relax the muscles slowly and evenly.
- Adjust the tension in the spine to help focus on the point of contraction.

Repeat 10 times with maximum contraction and total relaxation.

Anatomical aspect of *Moola Bandha*

Anatomy of Perineum

Moola Bandha is the contraction of the muscles of perineum. The Perineum is an approximately diamond-shaped region which lies below the pelvic floor, between the inner aspect of thighs and anterior to the sacrum and coccyx.

Its Superficial Boundaries are

- Anteriorly: the scrotum in males and the mons pubis in females.
- Posteriorly: the buttocks.
- On each side: the upper part of medial side of the thigh.

Its Deep boundaries are

- Anteriorly: pubic symphysis and its arcuate ligament or inferior pubic ligament.
- Posteriorly: tip of coccyx.
- On each side: Anterolaterally by ischiopubic rami and ischial tuberosities, posterolaterally by Sacrotuberous ligament.

The deep limit of perineum is the inferior surface of pelvic diaphragm and its superficial limit is the skin which is continuous with that over the medial aspect of the thighs and the lower abdominal wall. An arbitrary line joining the ischial tuberosities (the interischial line) divides the perineum into an anterior Urogenital triangle and posterior anal triangle [6]. Internal pudendal artery and vein, pudendal nerve (S2, S3, S4) are the chief neurovascular structure of perineum which lies in Pudendal canal (Alcock's canal).

The Pelvic floor is formed by the bowl- or funnel-shaped Pelvic diaphragm, which consists of the coccygeus and levator ani muscles and fascias covering the superior and inferior aspect of these muscles [7]. Levator ani is further subdivided into ischiococcygeus, iliococcygeus and Pubococcygeus according to their attachments and pelvic viscera to which they are related. Pubococcygeus is often subdivided into separate parts (Puboperinealis, Puboprostaticus or Pubovaginalis, Puboanal, puborectalis) [8].

The Perineal body, or the central point of the perineum, is a poorly defined aggregation of fibromuscular tissue located in the midline at the junction between the anal and urogenital triangles, about 1.25 cm in front of anal margin. Ten muscles of perineum converge and interlace in the perineal body. These are two unpaired external anal sphincter, and the unstriped fibres of the longitudinal muscle coat of rectal ampulla and anal canal; and four paired bulbospongiosus, superficial transverses perinei, deep transverses perinei and levator ani [9].

Functional Anatomy

Moola Bandha is the contraction of specific muscles in the pelvic floor (mainly Pubococcygeus), not the whole perineum. In the male body, the area of contraction is between the anus and the testes. In the female body, the point of contraction is behind the cervix, where the uterus projects into the vagina [10]. The muscle which mainly contract and strengthened in the practice of *Moola Bandha* is Puboperinealis muscle. The puboperinealis refers to the fibres that attach to the perineal body. *Moola Bandha* improves the contraction time of pelvic floor muscles and also their strength. Strength training of pelvic muscles will build muscle bulk and, thereby, provide structural support to pelvic floor by permanently elevating the muscle plate to a higher position in the pelvis. There is lifting and toning of organs of pelvis and lower abdomen. This increases the stability of pelvis and tones and supports the internal organs of lower abdominal cavity. It increases the peristaltic movements of intestine. When pubococcygeus muscle is contracted, it started making coccyx to move anteriorly. There is movement of Sacro-iliac joint and spine is falling backwards above the Sacro-iliac joint which initiates straightening of the lumbar spine. This helps in balancing the spine and stability of pelvic bowl. Attentiveness in the supportive musculature of pelvis increases the stability of the pelvis. Since the pelvis is the seat of spine, its stability creates a safe environment for spinal movement.

The pelvis contains the Lumbosacral nerve trunk, the sacral and coccygeus plexus and pelvic parts of sympathetic and parasympathetic systems. Collectively these nerves carry somatic and autonomic innervations to the perineum, majority of pelvic visceral organs, pelvic floor and gluteus region. Pudendal nerve (S2, S3, S4) is the chief nerve of perineum and external genitalia. Perineal contraction, stimulates both the sensory-motor and autonomic nervous system in the pelvic region, this pelvic stimulation activates the parasympathetic fibres emerging from the spinal cord.

As in *Moola Bandha*, there is contraction of perineal muscles. This momentarily stops the flow of blood in internal pudendal artery in and its branches. When *Bandha* is released and muscles are relaxed, there is an increase flow of fresh blood, which flushes away old, dead cells. In this way all the pelvic organs are strengthened, rejuvenated and circulation is improved.

Benefits: *Moola bandha* is a vehicle to traverse the ocean of *Samsara*, worldly existence, and to reach the other shore of enlightenment. Practice of this *Bandha* cause *siddhi* of *Vata* [11]. Its benefits are:

- *Moola Bandha* tones and strengthens the entire pelvic region including urinary, excretory, genitals organs and muscles of perineum and pelvic floor. So prevents the prolapse of pelvic organs.
- It stimulates the pelvic nerves so activates the sympathetic and parasympathetic system. It helps to reduce anxiety and depression.

- Improves the blood circulation in pelvis and lower abdomen. So increase the efficiency of pelvic and abdominal organs and efficiency of endocrine glands increases. Increase the peristaltic movement. So useful in disorders of reproductive, excretory and digestive system. e.g. Constipation, indigestion, piles, prolapse of pelvic organs.
- According to *Yoga* texts, *Kundalini Shakti* is aroused by this *Bandha*. It causes *Apana* to go upwards and meet with *Prana*. It awakes the *Mooladhara Chakra* and energy is restored in body.

Contraindications

- If there is injury in hamstring or groin region. (Blanket may be placed below knees and ankles to avoid any pain or discomfort)
- Bleeding piles
- Hypertension
- Fistula-in-ano^[12]
- During menstrual bleeding

CONCLUSION

Today's social life is becoming much busier and stressful than earlier times. People have not much time for their health concerns. Sedentary and stressful life of an individual can lead to psychological, reproductive and digestive system disorders. Medical facilities are becoming costlier and out of reach of poor and common man.

Moola Bandha is an important *Bandha* for Pelvic region. It does not consume much time without any cost. It has a physical as well as spiritual importance. It not only affects perineal muscles but also affects blood circulation and nerve activation of the pelvic and Lower abdominal region, so effective in disorders of reproductive, digestive and urinary system. It also activates and purifies *Mooladhara chakra* and *Kundalini Shakti* is awakened.

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