

PERINEAL PAIN

Physical Therapy Treatment

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The various treatment options currently used for the treatment of perineal pain are primarily in the following three categories:

- Infiltrations, nerve blocks
- Surgical
- Reeducational

In this chapter we are only concerned with the reeducational treatment.

Clinical observations/facts/findings

On clinical examination of patients suffering with perineal pain, one frequently finds precise painful points which it is necessary to investigate.

Some authors think that specific factors can contribute to the development of myofascial syndromes, they are:

- Interstitial cystitis
- Vulvodynia
- Urethral syndrome (CHAIKEN; 1993, WEBSTER:1993, JONES: 1994, POMERANTZ: 1994)
- Rectal distension (RANGELLI: 1993)
- Prolapse, following childbirth for example (NORTON: 1993)

Muscular syndromes may follow direct trauma (a fall on buttocks), indirect trauma (such as a foot caught in a hole, forced splits, sagittal or antero-posterior). The psychogenic factor (stress, anxiety) is not necessarily etiological but certainly aggravating. It should not be forgotten that sexual abuse generates major muscle contraction in practically all cases.

Amongst the painful pathognomic muscle points, we could mention:

The piriformis

One traces mentally two diagonals on the buttock: pressure at the junction of these two diagonals releases a vivid pain, a spasm or piriformis syndrome. Another painful point may be looked for at the level of the great trochanter, but this localization tends to be a source of error between a piriformis spasm and an internal obturator muscle spasm; the insertion of the end of the two muscles make up a communal tendon at the great trochanter (superior surface for the piriformis and internal surface for the internal obturator muscle).

The internal obturator

Anatomically, the internal obturator muscle is only separated from the piriformis by its satellite muscle, the gemellus superior. It is necessary to look for obturator internal spasm at the central part of the buttock by following the finger below the piriformis . Pressure releases the pain , a sign of internal obturator syndrome.

The other pelvi-trochanteran muscles, more external (external obturator, Gemellus superior) or inferior (quadratus femoris), do not seem to be involved in the genesis of perineal pain, as they are at a distance/away from the pudendal nerve.

The rectus femoris

It is the front surface of the quadriceps and the only bi-articular part. Whilst passively bending the leg to the thigh, with the patient lying on their front, pain very frequently appears on the front surface of the thigh indicating a retraction of the rectus femoris (physiologically the heel should touch the buttock) which because of its origin in the iliac spine antero-inferiore (tendon direct) pulls the pelvis forwards increasing the lumbar lordosis and thereby aggravating the leaning action of the psoas muscle.

The psoas

This stretches from the lumbar column to the small trochanter. By pressing the fingers perpendicular to the skin, inside the internal iliac fossa and outside the sheath of the large femoral vessels (grands droits) in a medially posterior direction and lumbar , with the patient on their back, thigh flexed at 45 degrees, pressure exerted awakens violent pain which may be uni or bilateral , which is psoas syndrome.

The levator ani

This forms the pelvic floor together with the ischio-coccyx muscle. On rectal touch , the presence of a hard and painful cord at the level of the anal canal leads to the suspicion of levator ani syndrome. More simply, pressure on the front surface of the coccyx revealing a vivid pain will lead us to think of the same syndrome.

The deep transverse perineal (transversus perinei profundus)

This is inserted at the ischio-pubic branch, a little above the ischial tuberosity and ends behind the ureter on the central fibrous nucleus of the perineum where it joins its corresponding muscle of the opposite side. Pressure at the point of origin, uni or bilateral awakens a pain which makes us think of a deep transverse spasm. The transversus perinei superficialis cannot be implicated because it is a lot less important than the transversus perinei profundus and is often irrelevant according to some anatomists.

Myo-fascial hypothesis

The frequent observation of the painful points described above leads us to ask why and how the various muscular spasms can cause perineal pain. It is anatomical reflection that guide our path/steps.

The piriformis , as we have seen, is a pelvi-trochanteran muscle; it is at the front of the sacrum encompassing the 2nd and 3rd foramina sacralia, that is to say very close to the origin of the pudendal plexus originating from S3 and the auxiliary roots of S2 and S4. Yet the contraction of the piriformis (a muscle spasm which becomes very hard and thick) may irritate the plexus and thus release the pain in the territory innervated by the pudendal nerve (anus, N.F.C.P, scrotum, labia, penis, clitoris) But the pudendal plexus is not the only one to be implicated; in effect the sacral plexus directly applied to the anterior face and the inferior edge of the piriformis , may also be irritated, notably the posterior cutaneous nerve of the thigh (little sciatic nerve). The patient experiences pain in the buttock and the rear thigh which rarely goes below the knee from which the idea of atypical sciatica, called truncated sciatica, without spinal effect nor impulsiveness during coughing or defecation in a context which never evokes a discular pathology.

The internal obturator

This is inserted on the bony surrounding of the foramen obturator. In addition this muscle is covered by its own membrane : the membrane of the internal obturator:, in its inferior section this membrane duplicates itself to form the tunnel or pudendal Alcock's canal (traversed by the pudendal vessels and the pudendal nerve) which is known can be a source of conflict for the pudendal nerve. Yet the contraction of the internal obturator becomes thick and hard (as with the piriformis and in a way more generally with all muscle spasm) the membrane becomes stretched and compresses the Alcock's canal and its contents.

Hypertony (increased rigidity, tension of muscles) of the rectus femoris by an indirect mechanism which accentuates the lordosis/leaning action of the psoas. In an anatomical position, the shortening of the rectus femoris forces the pelvis to lean forward. (All the more so as there is an abdominal hypertony) due to its origin at the antero-inferior iliac spine.

The psoas muscle is inserted at the lumbar column at two levels (corporeal, the most important, and costoidal?) to terminate at the tip of the small trochanter. The hypertony of the psoas may come to irritate completely or partly all of the nerves which pass between these two levels (roots T12 to L 4), likewise the irradiations can be determined:

- from the thoracic lumbar (sensitive T12-L1), pain in the vulvar region, the labia, the proximal urethra.
- from the lumbar plexus, pain on the upper surface and the inside of the thigh.
- abdominal-genital (ilio-inguinal nerve and ilio-hypogastric), pain in the inguinal region, pubis, labia, testicles.
- genito-femoral pain in the Scarpa triangle, of the cremaster (Riolan's muscle).

The **levator ani** muscle together with the **ischio-coccyx** muscle form the pelvic floor, in addition it constitutes a solid floor to protect the intra –abdominal and intra-pelvic organs from which it absorbs all the pressure: finally, it constitutes the internal edge of the ischio-rectal fossa, which is limited outside by the obturator muscle and internally and its aponeurose : among other things the contents of the ischio-rectal fossa is made of the pudendal Alcock's canal. It is therefore legitimate to think that contraction of the levator ani can disturb the ischio-rectal fossa.

In addition, the fibres of the levator ani have a global antero-posterior direction (from the pubis to the coccyx). Along its course the most internal fibres of the muscle contain the uro-genital slit which can explain that the levator ani spasm leads partly or completely to disturbed defecatory function (terminal constipation), and/or urinary (dysuria, sensation of not completely emptying the bladder), and/or gynaecological (dysparunia described by patients as painful penetration at the beginning of intercourse in the external third of the vagina).

The **deep transverse perineal muscle (transversus perinei profundus)** and its equivalent on the opposite side is stretched transversally from one ischial tuberosity to the other . It should be noted that these fibres are perpendicular to those of the levator ani. It represents the inferior section or base of the triangle which forms the ischio-rectal fossa, the origin of its insertion being situated just below that of the extension of the falciform of the sacro-tuberal ligament , which itself is below the insertion of the origin of the internal obturator muscle.

The hypertony of the deep transverse/transversus perinei profundus may lead to an irritation of the pudendal nerve by compressing the Alcock's canal, likewise urinary and/or fecal dysfunction due to the proximity of the external sphincter of the urethra and the external sphincter of the anus.

Treatment of muscle hypertony

This consists essentially of releasing the existing muscle spasms.

It is necessary to research all these spasms, the contraction of a single muscle is rarely isolated. One of the currently used techniques is that of contract-release. A muscular contraction (gentle) is asked of the patient, not so much for the strengthening of the muscle, because this is already too much, but rather for a better awareness of the area to relax. The contraction is made on inhaling and the release on exhaling. The stretch is slow, progressive and not painful to avoid the appearance of the defense reflex (myotatic reflex); the return to the initial position is slow always to avoid the appearance of the same reflex. The validity of the technique relies on the correct position taken by the patient. This position is that of "anti-physiology" of the affected muscle.

Example:

The piriformis

Its muscular physiology is the external rotation and the hip movement to the side, the patient will be lying face down (or on their back), lower limb in normal position and internal rotation.

The internal obturator

Its physiology is only external rotation, the patient lying on their back, lower limb in internal rotation.

The psoas

Bending the thigh on the pelvis and rotating the hip, the patient is lying on their back, the patient maintains the opposite knee bent to avoid lumbar lordosis.

However, two muscles are exceptions to the rule: the levator ani and the deep transverse of the perineum/transversus perinei profundus for which it is not possible to carry out this stretch. The technique will be inverse and consists of a shortening of the affected muscle fibres. (C. PERSET- Y. POLAK)

The levator ani

Patient on their front, the proximal palms the sacrum and the coccyx, the distal hand presses on the proximal hand in the direction of the pubic symphysis, the table serves as counter pressure. The pressure is maintained for 30 seconds. Too strong pressure should be avoided as well as a too rapid return which encourages the appearance of the defense reflex and aggravates muscular spasm (myotatic reflex).

Patient lying on their back : follow with the fingers of the proximal hand the rectus femoris and stop on the pubic symphysis : the side of the distal hand presses on the pubic symphysis, the proximal hand pressing on the hand in the direction of the coccyx. The pressure is maintained for 30 seconds with a slow return of 30 seconds.

The deep transverse of the perineum (transversus perinei profundus)

The aim is to bring the ischial tuberosities closer. Patient lying on their side (left for the right transverse and vice versa). The part of the hand composed of the abductor pollicis brevis, flexor pollicis and opponens pollicis of the distal hand creates a pressure on the ischial tuberosity in the direction of that of the opposite side. The proximal hand tilts back en crocheting l'aile iliaque ?? . Pressure maintained for 30 seconds, slow return 30 seconds.

The two preceding manoeuvres , concerning the levator ani and the deep transverse /transversus profundus are carried out by amphiarthrosiques movements, that is to say semi-mobile which only generate weakly amplified movements , in the order of a few millimetres ; it is best to be careful and not force the movements.

It should be noted that the shortening may be used equally on all the other muscles previously mentioned.

Results

In our experience , 12 to 15 sessions are generally required, twice a week initially, then weekly, then fortnightly, depending on the result.

Our study was carried out on 36 patients:

23 women (64%), 13 men 36%)

average age: 51,4 years (28-74 years)

average pain level 17, right 9, left 10

time since onset: 30 months (3 months to 15 years)

14 sessions (10 to 20)

This study has provided the following results:

aggravation : 0%

no benefit : 8%

some improvement : 21%

good improvement : 11%

satisfying or very satisfying : 60%