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Effectiveness of nerve flossing and pelvic floor exercise strengthening in Coccydynia: A case study

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Abstract

Coccydynia is the term used to describe the symptom of field that occurs in the region of the coccyx. It is characterized by coccygeal pain which is typically provocated by pressure. The diagnosis is made based on the patient medical history, physical examination and lateral plane film radiograph taken while sitting and standing. **Clinical presentation**—patient had pain in coccygeal region for one year. The pain was exacerbated with sitting for more than few minute and walking. **Intervention:** nerve flossing technique, Transcutaneous Electrical Nerve Stimulation and Pelvic floor strengthening exercise were included. **Conclusion:** -Nerve flossing with pelvic floor exercise technique was found to be effective in patient with coccydynia having severe pain and reduced strength.

Keywords: Nerve flossing, pelvic floor exercise, coccydynia, TENS.

INTRODUCTION

Coccydynia is a term that describes pain in the coccyx region. The majority of instances are linked to aberrant coccyx mobility, which can lead to persistent inflammatory process and coccyx degenertation.⁽¹⁾ The exact incidence of coccydynia has not documented, neither obesity have been linked to an increased chance of acquiring coccydynia. Coccydynia is five times more common in women than in men. Coccydynia is more common in adolescents and adults than in children. External or internal trauma is the most common cause of coccydynia. A rearward fall is the most common cause of external trauma, which results in a bruised, dislocated or broken coccyx. Repetitive or prolonged sitting on hard narrow or unpleasant surfaces can potentially cause minor trauma. Degenerative joint or

disc disease, hypermobility or hypomobility of the sacrococcygeal joint, viral aetiology and coccygeal morphological variation are all possible causes of non-traumatic coccydynia.⁽²⁾ Concomitant low back pain is known to be more common in people with coccydynia than in the general population, especially in those with certain anatomic variants like a curved forward coccyx with a pointed caudal apex or a straight coccycx. This pain is traditionally connected with sitting and aggravated by rising from a seated position. Many individuals will also experience frequent faeces or faeces pain others may find that sitting on their legs or on one buttocks relieves their pain.⁽¹⁾

The principal of Nerve Flossing technique (NFT) is founded on the premise that the entire nervous system is continuous network that moves and slides

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throughout the body and that we move that movement is linked to essential physiological processes. NFT pushes the nerves as far as possible through the tissues, proximally and distally, by moving every joint and body part that nerve crosses. Its equivalent to stretching one end of the cord while the other is slack and then switching direction. ⁽³⁾

Patients information-A 62 year's old male who was a retired teacher by occupation presented to **OPD** with a fall history, complain of right side radiating pain since one year which was gradual in onset and progressive in nature. The pain aggravated with walking and prolong sitting.

Clinical Findings-

- Pain was 8 on Numerical Pain Rating Scale (NPRS)
- Tenderness was present on the coccyx end.
- Resisted isometric were weak and painful for lumber muscle
- Range of motion of lumbar spine was painful and incomplete.
- According to Manual Muscle Testing (MMT) grade 3 for flexors and grade 3 for extensors.

Diagnostic Assessment: -

- After evaluation with MRI and CT a coccygeal source of pain was highlighted.
- SLR and SLUMP test were positive.

DIAGNOSIS- diagnosis was done on the basis of subjective and objective examination.

Therapeutic Intervention: -

First day assessment was done and patient oriented treatment was started which included hot moist pack for 10 min followed by Transcutaneous Electrical Nerve Stimulation (TENS) for 20min covering the area of lower back. Pelvic floor exercise was performed in supine position. On second day strengthening exercises and nerve flossing technique was started for better effects. On third day the same protocol was continued followed by pelvic floor exercises. Patient was asked to flexed both knee then contract pelvic floor muscle and hold it for 2 seconds. This was repeated for 10 times. In nerve flossing patient was asked to lie supine with one knee bend and pull towards chest and hold with hands then extend the knee. This was done for 10 repetitions.

The same treatment was continued for two weeks.

Follow-Up and Outcomes: -

- Outcomes used were NPRS scale for pain as it showed high correlation with other pain assessment tools in several studies and also easy to administer verbally,⁴ manual muscle testing (MMT) for strength.
- Effect of nerve flossing technique was found to be effective in reducing pain and pelvic floor muscle strengthening was good in improving strength.
- After one week of treatment pain was 4 on NPRS and strength of lumbar flexors was grade 3 and grade 4 for lumbar extensors.

	Pre treatment		Post treatment	
	Active	Passive	Active	Passive
Lumber flexion	30°	35°	40°	50°
Lumber extension	10°	15°	20°	25°
Left side flexion	5°	10°	10°	15°
Right side flexion	5°	10°	10°	15°
Left rotation	8°	10°	10°	15°
Right rotation	60°	8°	10°	15°

Fig: - Table for Range of motion.

Discussion: -

This study assessed effectiveness of pelvic floor strengthening followed by nerve flossing technique in the management of coccydynia. Post treatment outcome measures were seen attributed to increase in lumbar range of motion and decrease in pain.

The patient's pretreatment NPRS score was 8 and post treatment got reduced to 2. The pretreatment MMT score grade 3 for lumbar flexion and extension and post treatment score changed to grade 4 respectively. Coccyx (tailbone) pain has a major impact on quality of life of those who suffer from it. Midline pain, situated below the sacrum and above the anus, is a common symptom. When sitting or transitioning from sitting to standing, symptom is more severe. According to Patrick M Foye,et.al treatment of coccydynia include pelvic floor strengthening with use of cushions, oral medications, topical, medications, local pain management injections. (5) Present study included pelvic floor strengthening with nerve flossing technique showed improvement in treatment of coccydynia.

The main treatment was pelvic floor physical therapy, which sought to relax the pelvic floor muscles. The treatment of chronic coccydynia and Postcoccygectomy Pain with pelvic floor physical Therapy. ⁽⁶⁾Neural mobilization approach assist in a lowering intra neural edema and circulatory compromise via varying effects on intraneural pressure.⁽⁷⁾It aids in the restorations of normal mobility and length relationship, blood flow and axonal transport dynamics in brain tissue that has been impaired. This method is particularly successful at dissolving adhesions.⁽⁸⁾ The pumping impact of nerve flossing technique, when applied dynamically, allows venous return, oedema distribution and reduction in the pressure inside the perineurium.⁽⁷⁾

Conclusion: -Nerve flossing with pelvic floor exercise technique was found to be effective in patient with coccydynia having severe pain and reduced strength.

Patient Perspective: -

The patient shared his perspective that compared to the day one his pain was reduced and showed improvement on NPRS along with the improvement in strength of lower back muscles.

Consent-As per international standard or university standard patients written and informed consent has been collected and preserved by the author.

Ethical Approval-As per the international standard or university standard written ethical approval has been collected and preserved by the author.

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