

A Rare Case of Partially Ossified Sacrospinous Ligament Causing Sciatic Nerve Compression

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Ossification of sacrospinous ligament induces a great risk for maintaining the stability of the pelvis. The sacrospinous ligament, along with the sacrotuberous ligament, plays a distinct role in the sacroiliac joint and pubic symphysis stability. The ossification may cause compression of neurovascular structure traversing through the greater and lesser sciatic foramen. Here we report a case of unilateral heterogenous ossification of the left sacrospinous ligament causing sciatic nerve compression and sciatic pain. A 22-year-old Bangladeshi woman, mother of one child, presented with complaints of pain in the lower back, left buttock and back of the upper thigh. Clinical examination and investigations revealed a diagnosis of the partially ossified sacrospinous ligament with sciatic nerve compression. Total excision of heterotrophic calcification and partial excision of left sacrospinous ligament through posterior approach by a left paramedian incision over the lower back was performed under general anaesthesia. On outpatient follow-up visits at 2 weeks and 6 weeks post-surgery, complete disappearance of pain was observed, and the patient was able to return to regular productive life activity. In this report, we presented a rare case of ossified sacrospinous ligament causing sciatic nerve compression with unknown etiology. The surgical approach performed, total excision of heterotrophic calcification and partial excision of left sacrospinous ligament through the posterior approach helped to preserve the pelvic stability with a good clinical outcome.

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Key words: Sciatic nerve, Compression, Sacrospinous ligament, Ossification

Introduction

Sacrospinous ligament (SSL) is a thin, triangular ligament extending from the ischial spine to the lateral margins of the sacrum and coccyx, anterior to the sacrotuberous ligament, with which it blends in part. The sacrospinous ligament, along with sacrotuberous ligament, converts the sciatic notches into the lesser sciatic foramen and greater sciatic foramen respectively¹. The sciatic nerve passes underneath the sacrospinous ligament when leaving the greater sciatic foramen. The sciatic nerve is crossed by the ligament at its distal two-thirds^{1,2}. The ossification of SSL may cause compression of neurovascular structure traversing through the greater and lesser sciatic foramen. The ossified sacrospinous ligament induces a great risk for maintaining the stability of the pelvis^{3,4}. Sacrospinous ligament along with sacrotuberous ligament prevent upward tilting of sacrum, and its damage or absence in female may cause prolapse of vagina or uterus¹. In addition, the ligament is the most convenient structure to treat uterine or vaginal prolapse. Total excision of heterotrophic calcification and partial excision of the left

sacrospinous ligament will help the patient in future.

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Case Report

A 22-year-old Bangladeshi woman, mother of one child, presented with complaints of pain in the lower back, left buttock and back of upper thigh for the last two years to the orthopedic outpatient department. Initially, she felt pain while kneeling down or bending forward or going up/down the stairs or walking long distance. For the past six months, back pain has intensified and restricted her movements.

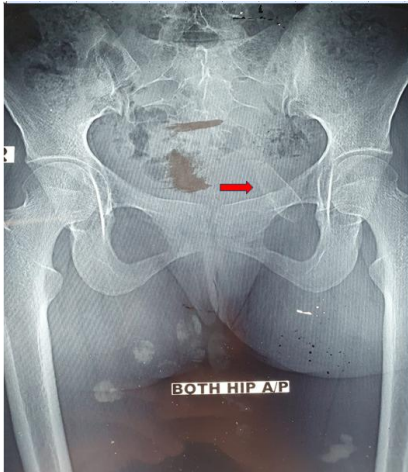


Figure 1: X-ray of the pelvis (A/P view) showing calcification of left sacrospinous ligament.

On examination, her blood pressure was normal (110/75 mm of Hg) and heart rate was 60 beats/minute. The patient denied any history of trauma. Clinical examination demonstrated a positive straight leg raise test (SLRT 30° in the left leg). A radiographic (X-ray) examination of the pelvis showed calcification of sacrospinous ligament on the left side (Figure 1).



Figure 2: CT scan of the pelvis showing an elongated bony structure along the sacrospinous ligament

A computed tomography (CT) scan of the pelvis demonstrated an elongated bone-like structure projecting along the sacrospinous ligament (Figure 2).

Magnetic resonance imaging (MRI) of lumbosacral spine was unremarkable. As the site of sciatic nerve compression was obvious, an electrophysiological study was not performed.

A diagnosis of the ossified sacrospinous ligament with sciatic nerve compression was made, and a surgical procedure was planned. Total excision of heterotrophic calcification and partial excision of left sacrospinous ligament was performed through posterior approach by a left paramedian incision over lower back under general anaesthesia (Figure 3).

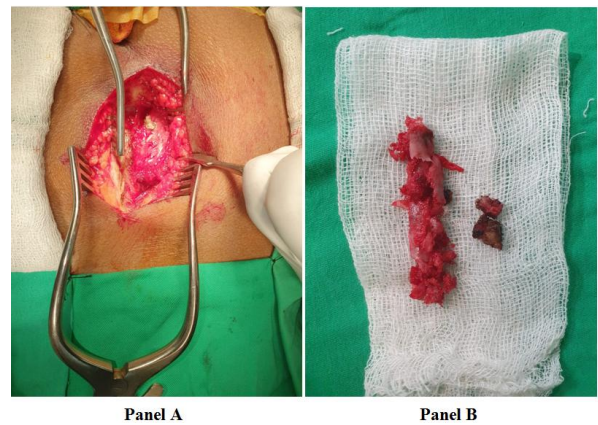


Figure 3: Panel A- Surgical approach; Panel B- Excision of hypertrophic calcification



Figure 4: Follow up X-ray of the pelvis (A/P view) - no calcification of left sacrospinous ligament

The patient was released from the hospital on the 3rd postoperative day with oral medication and advice of physiotherapy accordingly. On outpatient follow-up visits at 2 weeks and 6 weeks post-surgery, the complete disappearance of pain was observed (Figure 4). After one-month post-surgery, the patient was able to return to regular daily productive life activity.

Discussion

Our report presents a rare case of ossified sacrospinous ligament causing sciatic nerve compression in Bangladesh. The sciatic nerve passes underneath the sacrospinous ligament when leaving the greater sciatic foramen. Sacrospinous ligament, along with sacrotuberous ligament, prevents upward tilting of the sacrum, and its damage or absence in female may cause prolapse of vagina or uterus. Clinical presentations of this patient cause a dilemma for diagnosis and management. In this case, the X-ray of the pelvis showed calcification of sacrospinous ligament on the left side. The CT scan shows that the calcified structure projects towards the ischial spine, by which we could easily exclude myositis ossificans of the iliopsoas. The surgical approach we used is worth it as pelvic stability is mostly preserved. Through the posterior approach, we easily identified the calcification, where a pseudoarthrotic prominence is a better landmark. Calcification occurred underneath the ligament. Total excision of heterotrophic calcification and partial excision of left sacrospinous ligament were performed through posterior approach by a left paramedian incision over lower back under general anaesthesia. By this method, we can exclusively excise it by preserving the sacrospinous ligament. Reasonable precaution was taken during distal clearance to prevent injuries to the structures passes through sciatic notches, particularly to the sciatic nerve. Once complete clearance is ensured, partial excision of sacrospinous ligament removed the compression and reduced the chances of recurrence as well as the need for neurolysis itself. The etiology of ossification of the sacrospinous ligament is

unknown for this case because there was no history of trauma or any injury to the pelvis or pelvic organs.

Conclusion

We reported an atypical case of ossified sacrospinous ligament causing sciatic nerve compression with unknown etiology. Ossification of the sacrospinous ligament can be easily diagnosed by a radiographic (X-ray) of the pelvis. Computed tomography (CT) scan helps to exclude myositis ossificans of the iliopsoas and plan for surgery. The surgical approach performed is worthy as the pelvic stability is preserved with good clinical outcome. Further, follow-ups are required to reveal long-term clinical result.

Clinical message

When we see patients with sciatica, we should evaluate the pelvic region by x-ray besides investigating the spine. A CT-scan will help to exclude other pathologies and surgical planning. A posterior approach by a left paramedian incision over the lower back is a useful procedure to save the surrounding neuro-vasculature.

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