



### Introduction

Coccyx pain is very common in patients with abnormalities of the sacro-coccygeal junction, either due to congenital hyperangulation, injury-related dislocation, fracture, degeneration or pregnancy.

### Methods

18 consecutive patients, presenting with variable periods of coccydynia, were examined. They all had long durations of coccydynia, often along with sacro-iliac pain and/or sciatica. X-rays, MRI of the sacrococcyx and laboratory investigations were performed in all of those patients.

The patients were offered a combination of analgesia, anti-inflammatory, physiotherapy, regular lumbar and pelvic extension exercises and correction of their low levels of vitamin D levels and daily oral calcium over a period of 6 weeks.

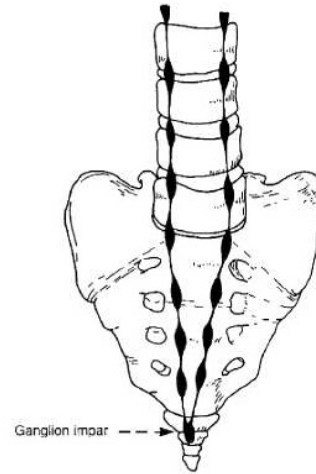
Those patients had up to 3 sessions of steroid injections into the ganglion impar. In case of non-response or partial response, 1 to 3 ml of 90% ethanol was injected into the ganglion impar. The patients were followed-up for periods of up to 3-12 months.

### Results

The 80% of the patients were females with an average age of 45.9 (25-58) years of age. They all presented with coccydynia. The imaging of their sacro-coccygeal spine showed kyphosis with disc degeneration in the sacro-coccygeal region. There was an associated vitamin D deficiency with an average of 29.42 (10-66) nmol/L (normal 75-250 nmol /L)

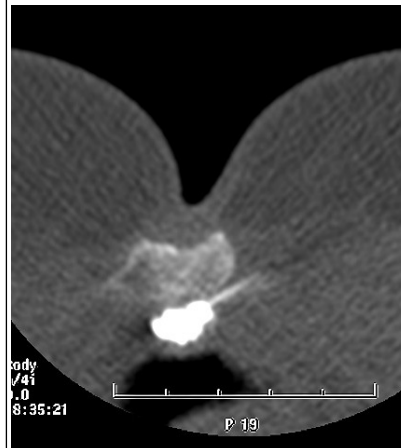
After one steroid(40mg triamcinalone) injection only, the 16 out of those 18 patients did fully (9) or partially respond (7). In case of full response, the treatment plan was finished. In case of partial response, the patients underwent a second session. After 3 sessions, one patient remained with partial response, and was subsequently injected with 3ml of 90% ethanol, which finally resulted in a full response also in this patient. There was significant improvement of their symptoms using the above mentioned treatment strategy in addition to ganglion impar injections with a drop in their average Oswestry Disability Index from 37.25 (30-58) to 22.57 (8-62) .

### The Ganglion impar location.



It is mostly located around the front of the first coccygeal segment in 90% of cases.

### CT-guided injection of the ganglion impar



Lateral approach to the front of the upper coccyx where the ganglion impar mostly resides.

### Discussion

Coccyx pain is a relatively uncommon condition accounting for fewer than 1% of all back pain conditions. Causes are variable including hypermobility, dislocation, rigid coccyx with a spur. Less common reasons are tumours, infections and nearby pathologies with pain radiating to the coccyx.

The ganglion impar is a common pathway for all pain originating from that region. Hence, blocking it would produce a good relief from the pain, while the irritation subsides.

This is confirmed by the results obtained in our series. We had one case that was resistant to treatment but refused to have a surgical coccygectomy.

### Learning Objectives

Good understanding of the etiology and treatment modalities of coccyx pain can result in good clinical outcomes in this common condition that is often treated inadequately.

### Conclusions

However, independent of the etiology, injection to block the signals of the ganglion impar may provide significant long term pain relief to the patient with coccyx pain. The multidisciplinary approach may preserve the patient from coccygectomy in most of the cases.

### References

- Foye PM. Ganglion impar injection techniques for coccydynia (coccyx pain) and pelvic pain. *Anesthesiology*. 2007 May. 106(5):1062-3; author reply 1063.
- Oh CS, Chung IH, Ji HJ, et al. Clinical implications of topographic anatomy on the ganglion impar. *Anesthesiology*. Jul 2004. 101(1):249-50.
- Pennekamp PH, Kraft CN, Stütz A, Wallny T, Schmitt O, Diedrich O. Coccygectomy for coccygodynia: does pathogenesis matter?. *J Trauma*. 2005 Dec. 59(6):1414-9.
- THIELE GH. COCCYGODYNIA: CAUSE AND TREATMENT. *Dis Colon Rectum*. 1963 Nov-Dec. 6:422-36.
- Peyton FW. Coccygodynia in women. *Indiana Med*. 1988 Aug. 81(8):697-8.