

What can a pain specialist do to treat patients with intractable coccyx pain?

Anne Lassaux

Pain Assessment and Treatment Unit, Rothschild Hospital, APHP (State Hospitals), Paris, France

Cite: Lassaux, A. What can a pain specialist do to treat patients with intractable coccyx pain?. In: Maigne JY and Doursounian L (eds) Coccyx Disorders. Proceedings of the First International Symposium on Coccyx Disorders, Paris, 2016. pp 168-175.

WHAT CAN A PAIN SPECIALIST DO TO TREAT PATIENTS WITH INTRACTABLE COCCYX PAIN?

Anne Lassaux

Pain Assessment and Treatment Unit,
Rothschild Hospital,
APHP (State Hospitals),
Paris, France

INTRODUCTION

When I was asked to speak about the management of intractable coccydynia in the chronic pain clinic, my first thoughts were that it was a difficult task as far as these patients are concerned.

In my practice as a clinician involved in the treatment of pelvic and perineal pain, these cases represent just a small part of my work – 4.6% of pain consultations – but they often present me with a few surprises.

MATERIALS AND METHOD

In 2014–2015, 20 patients attended the clinic for intractable coccydynia: 18 women and 2 men. These 20 patients may be divided into two groups: one group, with 15 patients (G15), came for at least two appointments over the course of these 2 years, and the other group of 5 patients (G5) came for a single appointment. What can be said retrospectively about these 20 patients? **[Table 1]**

There is a female predominance in both groups (G15, 93%; G5, 80%).[1]

Average age (G15, 47.9 years; G5, 45.4 years) is lower than that of the other patients followed for pelvic and perineal pain, whose mean age is 56–57 years, depending on year.

Their average body mass index (BMI) is normal: (G15, 23.72; G5, 21.48). Only 3 patients out of 15 have a BMI above 27, and for all of them it is below 30.[2]

Was recurrent coccydynia involved? In G15, there was one recurrence after 10 years, one after 1 year, and one other after 10 years that was associated with low back pain. In G5, there was one recurrence 10 years later, after a first episode that resolved in adolescence.

Were there specific trigger factors in these patients? In G5, there were four cases in which an event involving physical trauma[3] has been identified and is deemed responsible (cycling, long bus journey), and one emotional episode

(break-up of a relationship) was followed immediately by pain that had been experienced 10 years previously. Conversely, in G15, in 7 out of 15 patients – 46% – there is no physical or traumatic trigger factor. In 2 out of 15 patients there are psychological factors (a break-up, news about a loved one’s serious illness – a relapse 1 year later after being told that the disease was incurable).[4] For 1 female patient progression has been gradual over 10 years.

How long had the pain been present when the patients first attended the pain clinic? Patients presented after a similar time period: three and a half years.

Are there any specific radiological features? In G15 there is 1 dislocation, 1 consolidated fracture between S3 and S4, 1 consolidated fracture of a coccygeal segment and 1 spicule.[5]

Mobility of the coccyx is widely investigated and documented before attendance at the pain clinic, and was predominantly normal for the two groups: G15, 73%; G5, 80%.

As for injections, all the patients have had injections with varying degrees of success, in terms of both positive/negative results and duration of effect: G15 had more than 29 injections and G5 more than 14.

In relation to the 4 patients out of 20 (1 male and 3 female) who have had a coccygectomy, the percentage was the same in the two groups: 20%.

On the other hand, there are marked differences in pain intensity between the two groups. The G15 group includes those patients with the highest levels of pain: G15, average maximum on the Numerical Rating Scale (NRS) 6.76/10 (a single female patient has pain intensity of less than 5/10); G5, average maximum NRS 4.20/10.

Table 1	G15	G5
Number of appointments at the pain clinic	≥ 2	1
Sex	14 females/1 male	4 females/1 male
Average age	47.9 years	45.4 years
Recurrence	3: 1 at 10 years 1 at 1 year 1 at 2 years associated with lower back pain	1 recurrence
Trigger factors	None: 7/15 – 46% Physical: 5/15 – 33% Psychological: 2/15 – 13% Other: 1/15 – 6%	0/5 – 0% 4/5 – 80% 1/5 – 20% 0/5 – 0%
Duration of progression at the first appointment at the pain clinic	Mean/total: 3.5 years Median: 2 years	Mean: 3.4 years Median: 3 years
Radiological features	4/15	0/5
Mobility of the coccyx	Normal: 11/15 – 73% Hypermobility: 1 Unknown: 1	Normal: 4/5 – 80% 1 dislocation of two coccygeal segments
Injections	≥29	≥14
Coccygectomies	3/15 – 20%	1/5 – 20%
Pain intensity	Average maximum NRS = 6.76/10	Average maximum NRS = 4.2/10

ATTENDANCE AT THE PAIN CLINIC

Chronic pain patients with intractable coccydynia require a long appointment, an hour minimum, and need to be approached with empathy. I try to put them at their ease by asking them to choose the most comfortable position in which to give me their medical history (sitting down, standing up, lying down), which they can change as the appointment progresses.

Their medical journey is recorded using **the semi-structured questionnaire from the National Agency for Health Accreditation and Evaluation (ANAES) for chronic pain**.^[6] Chronological analysis is very informative: the circumstances in which the pain had its onset; treatments: injections, medications, manipulation, ultrasounds; their efficacy or lack of it, durability, adverse or side effects (constipation), possible early termination,^[7] beliefs, treatment refusals, personal, family, professional circumstances

Further investigations are performed – plain and dynamic radiographs, CT, MRI – and are checked by radiologists if there is the slightest doubt, so as not to miss a rare pathological condition.^[8]^[9]

There follows a thorough and careful clinical examination including: weight, general statics, palpation of the entire spine, a search for associated myofascial syndromes, examination of the coccyx, perineum, mobility of the lower limbs

Clinical examination may also reveal associated pathologies such as:

- a levator syndrome: G15, 9/15; G5, 0/5^[10]
- a regional myofascial syndrome: G15, 8/15; G5, 1/5.

These factors aggravate coccydynia and indicate diffusion of the pain even when they do not perpetuate it.^[11]

This first appointment sometimes **produces an alternative** diagnosis: thus, in the G15 group, the diagnosis of pudendal neuralgia was reached for 2 female patients, 1 of whom underwent successful surgery for pudendal pain,^[12] ^[13] and a second who was not followed up. In a third female patient we leaned towards a piriformis syndrome,^[14] which was also treated successfully with physiotherapy, injections and finally with an injection of botulinum toxin into the muscle. In 2 female patients colonoscopy was performed.

WHAT SORT OF THERAPEUTIC MANAGEMENT IS OFFERED TO THESE PATIENTS?

Drug therapies:

Analgesics are represcribed (9 patients) since patients are no longer taking them, as is often the case with chronic pain.^[15] According to previous tolerance: WHO 1 (PARACETAMOL, NSAIDs, NEFOPAM*) or WHO 2 (TRAMADOL), which may be given with muscle relaxants (4 patients) including benzodiazepines (2 patients). Analgesics are prescribed at the effective dose,

paying attention to their pharmacokinetics (extended or immediate release).^[16]

Tricyclics (5 patients) are standard treatment and may be very effective in some.^[17] I prescribe them to be taken at night, in a single dose, to reduce the side effect of daytime somnolence. An SRI (serotonin reuptake inhibitor) (2 patients) has also proved effective.

An **antiepileptic**, pregabalin*, was given for more than 6 months.[17]

LIDOCAINE patches 5% are not very helpful in the immediate area of the coccyx because they do not stay in place, but they were applied (3 female patients) just to one side.[18]

In my approach to the treatment of intractable neuropathic pain, I am starting to offer (3 patients) topical application of **CAPSAICIN** gel, according to AMM (Autorisation de Mise sur le Marché – Medicine Licence) recommendations,[19] and also:

- **local oestrogens**, which were beneficial in one female
- **a course of KETAMINE IV**, which has been suggested as a means of reducing hypersensitivity to pain (a single female patient in G15, unsuccessful)[17][18]
- **treatment for any constipation** associated with coccydynia (twice).

Injections:

At the surgery: at the site of pain (1 female patient).

Under CT guidance: into the pudendal nerves (4 female patients); into the piriformis muscle (twice); into the tip of the coccyx (once); and into the sacrococcygeal joint (once). Injections into the ganglion impar were offered (3 patients).[20]

Pulsed radiofrequency treatment was offered to 1 female patient.[21]

Physical therapies:

Physiotherapy to relax the perineum, in particular the levator ani muscles (8 patients), or its termination because it was not appropriate (1 female patient); in association with regional management, and management of the lumbar spine and the lower limbs (8 patients); and in association with techniques such as **INDIBA** (1 female patient). **Manipulation of the thoracolumbar junction** was required (1 patient).

TENS was beneficial for 2 patients for several months.

Other physical therapies were prescribed: mesotherapy, sophrology, reflexology, osteopathy, reiki, taking up a regular sport.

Treatment relating to the sitting position: prescription of cushions (3 patients) or an ergonomic seat (once).

Physiotherapy using heat or cold.

Psychological management:

Follow-up with a psychiatrist (once), a psychologist (twice) or relaxation sessions (once).

Treatment with cortical magnetic stimulation for a depressive syndrome was offered (once) and turned down.

All these therapies were prescribed as adjunctive ones over time, and each G15 patient had at least two treatments at the same time as being followed up at the pain clinic.

Multidisciplinary input:

This can take several forms. It may involve a case discussion between practitioners, which is often the initial stage. This first stage may be carried out by videoconference involving participants all over the world.

I take part in a monthly multidisciplinary videoconference set up by the team in Nantes. It can take various shapes and often brings together different approaches to care: pain specialists, urologists, neurosurgeons, functional therapists, physiotherapists, osteopaths, a psychologist It may be followed by a multidisciplinary medical appointment, in which those taking part revisit features from the preceding appointments in the patient's presence, the patient is re-examined and the possible therapeutic courses are discussed again with the patient. This multidisciplinary medical appointment is awaited but much dreaded by patients.

This multidisciplinary approach is very rewarding and allows knowledge to be pooled, each participant bringing their own experience to bear for the benefit of the patient.

Assessments, results:

We can assess only the G15 patients, as the G5 ones have been lost to follow-up. Optimistically, that may be because, at their only appointment, their pain was only slight in four cases and because their condition did not deteriorate.

I have classified the G15 patients into four categories: cured or much improved, improved, not improved, worse. By 'improved', I mean a decrease of at least two points on the Numerical Rating Scale for pain intensity.

Patients who were cured or much improved:

Five patients fall into this category: 4 cured and 1 much improved with very occasional pain. Here are their profiles (table 2) (M=Male, F=Female):

Patients	Age	BMI	Trigger factors at pain onset	X-rays	Mobility	Coccygectomy	N° of adjunctive treatments	Deciding factors?
M	59	27.7	0/2012	Dislocation	Hypermobility	Yes 2013	2	Spontaneous cure?
F	41	20	Emotional problems/2013	Normal	Normal	No	6	Emotional healing?
F	74	24.5	0/2011	Lumbar discopathy	Normal	No	7	Sport?
F	45	20.7	0/2013	Normal	Normal	No	5	Endovaginal manipulation
F	30	20.7	0/2006	Normal	Normal	No	>8	Diagnosis and treatment of piri-formis syndrome

Patients who improved (table 3):

Patients	Age	BMI	Trigger factors at pain onset	X-rays	Mobility	Coccygectomy	N° of adjunctive treatments	Deciding factors?
F	24	21	0/Jan. 2015	Normal	Subnormal	No	5	Physio?
F	39	25.5	0/2013	Consolidated fracture between S3 and S4	Normal	No	4	Injection at S3/S4
F	42	19	Bad news/2012	Normal	Normal	No	4	?
F	36	28	Fall at work/2012	Normal	Normal	No	3	Disappearance of myofascial syndrome
F	42	21	0/2010	Normal	Normal	No	4	Sacrococcygeal injection

Patients who did not improve (table 4):

Patients	Age	BMI	Trigger factors at pain onset	X-rays	Mobility	Coccygectomy	N° of adjunctive treatments	Deciding factors?
F	71	28	0/2014	Normal	Subnormal	No	2	Injection at ganglion impar
F	70	24.5	Journey sitting down/2011	Normal	Normal	Yes 2012	2	Capsaicin gel
F	39	28	Fall/2013	Fracture 1st segment of coccyx	Normal	No	4	Botulinum toxin in levators
F	47	17.7	0/2010	Spicule	Normal	Yes 2011	8	Wishes to stop
F	60	29.5	0/2003	Dislocation 2 segments of coccyx	Normal	Yes 2005 Stump reoperation 2006	4	Section of sacrospinous ligament

None of the patients got worse during follow-up.

Discussion:

A group of 15 patients is a rather small one and interpretation is very difficult. In addition, as this is a retrospective study, it is not possible to supply exhaustive information for some factors, such as scales for depression or quality of life. These assessment results are not at all evidence-based.

The subgroup of patients who were cured or much improved (5 out of 15 patients) represents one-third of G15. But if we look at the time factor, they got better after more than 3 years of intractable coccydynia and for each person that is very positive. So what can we learn from these 5 patients?

The first patient was cured 2 years after coccygectomy with few therapeutic interventions. We might think that it was a spontaneous cure that was a bit late after surgery.

For the second there was no context of physical trauma and cure was experienced at the same time as their emotional difficulties were resolved.

For the third, the adjunctive treatments for coccydynia allowed global management that also addressed the low back pain. Resumption of sporting hobbies was a determining factor in the cure.

For the fourth, MRI had showed a retroverted uterus that was compressing the laminated sigmoid in the uterosacral space. Endovaginal manipulation was an effective treatment, to which tramadol* and pregabalin* were added.

The fifth female patient also benefitted from a revised diagnosis that was proven on effective treatment of her piriformis syndrome.

The subgroup of female patients who improved (5 out of 15 female patients): one-third.

For 3 patients, improvement may be attributed to treatment with precise injections but no deciding factor was found for the other 2 patients.

The subgroup of female patients who did not improve (5 out of 15 female patients): one-third.

This group has a higher average age than the two others (57.4 years).

It is these patients in particular, in whom treatment has failed, who are most in need of multidisciplinary discussion or consultation. That was done for 3 of them.

This group includes 3 patients who had had a coccygectomy and who attended the pain clinic 3, 4 or 10 years post surgery, respectively. That is a really long time.

For the patient who underwent surgery in 2012, an area of fibrosis is easily seen on the latest MRI. Pressure over this area immediately triggers the pain experienced by the patient in a sitting position. Injection into the painful area was only effective for as long as the local anaesthetic lasted. Placement of a catheter for continuous drug administration over several days would expose the patient to a definite risk of sepsis and so the possibility should not be entertained. On the other hand, application of capsaicin gel may be offered.[19]

The patient who underwent surgery in 2011 wishes to stop her care.

The patient who underwent surgery in 2005 and 2006 attended the multidisciplinary meeting. Section of the sacrospinous ligament was offered but she did not take it up.

The two other patients were offered injection of the ganglion impar and of botulinum toxin into the levator ani muscles, and their therapeutic management will continue.

Throughout this assessment work, I came up against a major difficulty – the absence of a validated reference tool to evaluate these patients – whereas one exists for following cases of migraine or interstitial cystitis, for example

CONCLUSION

Management of intractable coccydynia in the chronic pain clinic is difficult because it involves complex clinical pictures. A good knowledge of regional pathologies is required, as the clinical pictures are often closely interlinked. The multiplicity of proposed therapies shows the difficulty of treating this pathological condition. However, very good results may be obtained: one-third cured and one-third improved, even after more than 3 years' progression. Of course, modesty is called for because medical treatment addresses only part of the problem.

For this reason it would seem useful to collate the files of patients with intractable coccydynia, in order to study them as a multidisciplinary group with the aim of improving our knowledge of the pathology and its cure rate. To do that, experts must strive to establish evaluation and monitoring criteria that can be used easily by practitioners to compare patient groups.

BIBLIOGRAPHY

1. Shao-wen, Chen Qing-yu, LIN Zhong-qin. Coccygectomy for stubborn coccydynia. Chinese Journal of Traumatology 2011; 14(1):25-8.
2. Maigne J, Doursounian L, Chatterlier G. Causes and mechanisms of common coccydynia: role of body mass index and coccygeal trauma. Spine 2000; 25(23):3072-9.
3. Kim NH, Suk KS, Lee HM. Comparison between idiopathic and traumatic coccygodynia. International Society for the Study of the Lumbar Spine Meeting, Hawaii, USA, 1999.
4. Maroy B: Spontaneous and evoked coccygeal pain in depression. Dis Colon Rectum 1988; 31:210-15.
5. Postacchini F, Massobrio M. Idiopathic coccygodynia: Analysis of fifty-one operative cases and a radiographic study of the normal coccyx. J Bone Joint Surg[Am] 1983; 65:1116-24.
6. ANAES/service des recommandations et références professionnelles/février 1999. Evaluation et suivi de la douleur chronique chez l'adulte en médecine ambulatoire. www.has-sante.fr
7. Kalso E et al. Opioids in chronic non-cancer pain: review of efficacy and safety. Pain 2004; 112(3):372-80.
8. Lath R, Rajshekhar V, Chacko G: Sacral haemangioma as a cause of coccydynia. Neuroradiology 1998; 40:524-6.
9. Sundaresan N, Galicich JH, Chu FCH, Huvos AG. Spinal chordomas. J Neurosurg 1979; 50: 312-19.
10. Fred A: Coccydynia/levator syndrome, a therapeutic test. Techniques in Coloproctology 1996; 4.
11. Basbaum et al. Cellular and molecular mechanisms of pain. Cell 2009; 139(2):267-84.
12. Amarenco G, Bensignor M, Guerineau M, Labat JJ, Robert R. Algies pelvi-périnéales: physiopathologie, diagnostic, prise en charge thérapeutique. KS. Janvier 1999. N385. 21
13. Robert R, Labat JJ, Bensignor M, Glemain P, Deschamps C, Raoul S et al. Decompression and transposition of the pudendal nerve in pudendal neuralgia: a randomized controlled trial and long-term evaluation. Eur Urol 2005;47(3):403-8.
14. Michel F, Decavel P, Toussirol et al. Piriformis muscle syndrome: diagnosis criteria and treatment of a monocentric series of 250 patients. Ann Phys Rehabil Med 2013;56(5):371-83.
15. Breivik et al. Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. Eur J Pain 2006; 10:287-333
16. Lussier D, Beaulieu P. Toward a rational taxonomy of analgesic treatments. In Pharmacology of Pain. IASP Press. 2010;27-40.
17. Gilron I et al. Neuropathic pain: a practical guide for the clinician. CMAJ 2006;175(3):265- 275.
18. Attal N, Bouhassira D, Traitement pharmacologique des douleurs neuropathiques. Neurologie 2005:44-54
19. Wallace M, Pappagallo M. Qutenza*: a capsaicin 8% patch for the management of post herpetic neuralgia. Expert Rev Neurother 2011;11(1):15-27.
20. Foye PM, Ganglion impar injection techniques for coccydynia (coccyx pain). Anesthesiology 2007;106(5):1062-3.
21. Cahana A, Van Zundert J, Macrea L, Van Kleef M, Sluijter M, Pulsed radiofrequency: current clinical and biological literature available. Pain Med 2006;7(5):411-23