

Injections of the coccyx (discs and spicules). Technique and results

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INJECTIONS OF THE COCCYX (DISCS AND SPICULES). TECHNIQUE AND RESULTS

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INTRODUCTION

Our primary hypothesis regarding coccydynia was that the intervertebral coccygeal disc was a possible source of pain and that coccydynia was in fact discogenic pain. Consequently, as a diagnostic test, we injected these discs with a local anesthetic, which was followed by a complete disappearance of the pain in many cases, thus confirming our hypothesis. Then, we started to inject a steroid into the disc in case of dislocation, according to the technique we described in 1992 (1).

TECHNIQUE OF COCCYGEAL INTRADISCAL INJECTION UNDER FLUOROSCOPIC GUIDANCE

The patient lays in the left lateral decubitus, hips and knees flexed. The puncture point is localized with a metallic wire (an unfolded paper clip) stuck to the skin. Its extremity should correspond to the dorsal aspect of the disc to be injected [Fig 1]. After confirmation, a bar is drawn on the skin, and the paper clip removed. We use a 23 Gauge, 30 mm or a 23 Gauge, 50 mm needle, according to the depth of the coccyx. In some obese patients, a spinal needle (100 mm) is required.



Figure 1. The tip of the wire projects on the dorsal aspect of the disc to be injected.

The needle is introduced progressively toward the center of the disc while injecting a local anesthetic (lidocaine 0.5%). A film is taken, to confirm a correct positioning in the sagittal plane. Then, a contrast medium is injected to confirm, or not, the correct position of the needle in the center of the disc [Fig 3,4].

Once a correct positioning is confirmed, the steroid is injected. Our preference goes to acetate prednisolone, a short acting steroid. Long acting steroids carry the risk of calcifications [Fig 5] or skin atrophy, this latter being damageable in case of spicule. Due to the small capacity of the coccygeal disc, part of the liquid must be injected in front or behind the disc, in front for hypermobility, behind in case of dislocation. The patient should be warned about the possibility of an adverse painful reaction, more common after injection of the tip of the coccyx (1/3rd of the cases) than in a disc (1/10th). The therapeutic effect may appear only after three full weeks in some cases.



Figure 4. The needle projects on the center of the disc, but is actually too lateral.

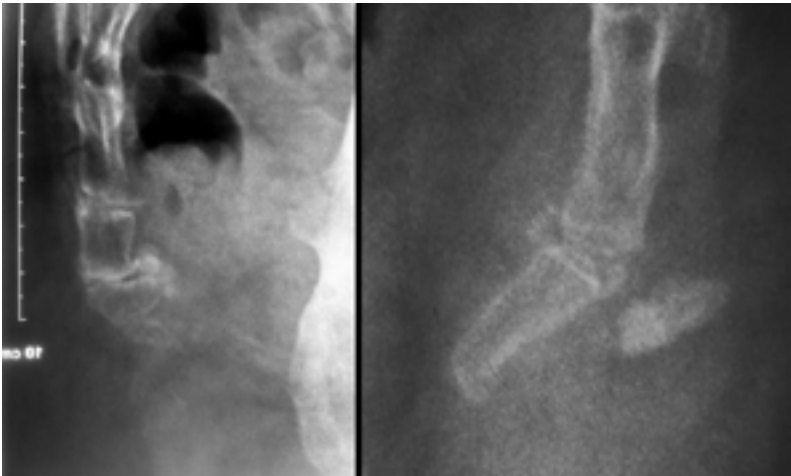


Figure 5. Two images of calcifications related to the use of a long acting steroid. On the left, after triamcinolone ; on the right after cortivazol.



Figure 2. The puncture point is between the two fingers indicating the border of the coccyx.

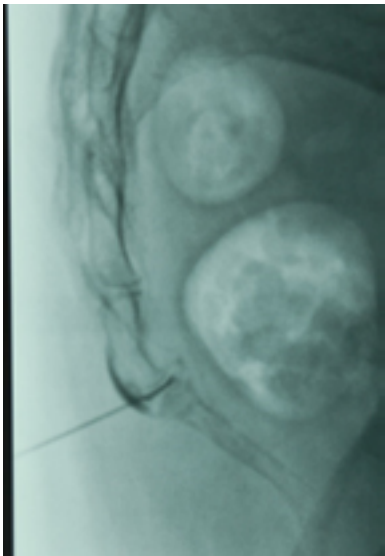


Figure 3. Coccygeal discography.

INJECTION TECHNIQUE FOR A COCCYGEAL SPICULE

The technique of injection is similar to the intradiscal one. The needle should target the spicule. A bursa is sometimes opacified [Fig 6]. A painful reaction after injection is more frequent and more intense than after injection into a disc.



Figure 6. Opacification of a bursa.

BLIND INJECTION TECHNIQUE

In 1991, Wray et al described a technique of blind injection in the soft tissues around the coccyx (2). From our experience, we believe that it is possible to inject a disc, provided that it is mobile enough to be localized by the rectal examination, and that the patient is not obese.

A spicule can also be injected in a blind way, but it is sometimes unexpectedly difficult to get the contact with the bone, as it is thin and small.

This technique is recommended in adolescent (where spicules are a frequent cause of coccydynia) and pregnant women.

COMPLICATIONS

The classic complications are always possible. An allergic reaction can be avoided with a premedication in patients at risk. To prevent infection, besides the disinfection of the skin, we inject 3-5 cc of lidocaine 0.5% between the skin and the coccyx. In addition to its anesthetizing effect, there is an anti-infectious effect (3). In 26 years, we have performed more than 10.000 coccygeal injections and no case of infection. The only

specific complication is the accidental puncture of the rectum which translates in the presence of gas in the syringe after aspiration. It occurred twice in our experience. We abstained to inject the steroid and the course was uncomplicated.

RESULTS

Taking the opportunity of this symposium, we followed up during 6 months 132 patients having benefited of a first therapeutic injection between January and September 2015. The final evaluation consisted in a telephone interview, the Paris coccyx questionnaire and a visual analog scale (VAS). Four patients were lost for follow up, letting 128 in the study.

The results were split up according to the diagnosis given by the dynamic films (table 1).

	N = 128	Complete relief < 2 months N=46 (36%)	Complete relief 2 to 6 months N=34 (26%)	Complete or partial relief > 6 months N=50 (39%)
Spicule	20	7 (35%)	3 (15%)	11 (55%) 2 of which partial
Rigid coccyx without spicule	9	5 (56%)	3 (33%)	2 (22%) 1 of which partial
Normal mobility	23	8 (35%)	6 (26%)	9 (39%) 3 of which partial
Hypermobility	28	5 (18%)	6 (21%)	17 (61%) 7 of which partial
Dislocation	48	21 (44%)	16 (33%)	11 (23%) 1 of which partial

Tableau 1. Results of intradiscal or spicule injections according to the diagnosis in patients with chronic coccyx pain (more than 2 months).
Partial relief means a 50% improvement.

It takes three weeks to assess the effect of the injection, as some patients actually do better only after three full weeks. Generally speaking, the results were mediocre, as 36 (28.1%) of the patients were pain free and 14 (10.9%) partially relieved (with a significant improvement) at six months. These results match former results published in a university medical thesis supervised by ourselves (4).

It is of interest to take note that even when the relief is short, it remains a strong argument favoring the responsibility of the lesion (or of the disc if the dynamic films are normal) in the coccydynia. In case of subsequent surgical coccygectomy, patients who responded positively to injections, even for a short time (1 month) had better results than the ones who had no relief at all (4).

In case of relapse, it is logical to offer the possibility of a second injection. If the result is more prolonged than with the first injection, there are good chances to cure the patient with repeated injections. On the contrary, the result may be poorer and in this case, we advise manual therapy.

CONCLUSION

More research is needed in this field. We need a comparison of injections with a placebo. In a study comparing manual therapy to an external placebo, this latter exhibited a mere 12% of success at 6 months (5), indicating that coccydynia is a very chronic disease and that the result of injections seems to be acceptable, but at present, we have no direct evidence. We need to study the effect of a dual treatment combining injection and manual therapy, we need to better document the effect and indications of blocking the impar ganglion, maybe in combination with disc/spicule injections. These are some suggestions for future research...

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