

INCIDENCE OF THE PIRIFORMIS SYNDROME IN PATIENTS WITH
SACROILIAC DYSFUNCTION

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Michael A. Amaral, MD, FACS (1), Alan B. Lippitt, MD (1), Vicki Sims, PT (2).

(1) Spine & Sacroiliac Specialists, LLC. Emory Crawford Long Hospital MOT, 550 Peachtree NE, Suite 1770, Atlanta, GA, 30308, USA

(2) Body Mechanics Physical Therapy, LLC. Emory Crawford Long Hospital MOT, 550 Peachtree NE, Suite 1760, Atlanta, GA, 30308, USA

BACKGROUND:

Sacroiliac dysfunction accounts for about 15% of low back pain patients. The pain is typically posterior, in the area of the sacroiliac joint. It may irradiate in the groin and toward the knee. A subset of patients also presents with sciatica-like pain which, to date, has remained unexplained. The diagnostic is usually made by a fluoroscopically guided sacroiliac intra-articular block. An improvement of 75% or better is considered diagnostic while an improvement of 50% to 74% is considered equivocal. Responses below 50% generally rule out this diagnostic.

The piriformis syndrome causes buttock pain and sciatica like leg pain which exacerbates when the leg is placed in a FAIR position (FAIR for Flexion Adduction Internal Rotation). The piriformis muscle has an intimate relationship with the sciatic nerve (figure 1). The FAIR position pulls the muscle against the nerve, causing a reversible neurapraxia. The diagnostic can be made electro-physiologically by comparing the H-reflex prolongation with the leg in neutral and in FAIR position (figure 2). Because of anatomical proximity, the pain of piriformis syndrome and of sacroiliac dysfunction may overlap. The piriformis is also a stabilizing muscle of the sacroiliac joint. There is therefore a theoretical consideration that the two conditions may have a relationship.

METHOD:

The charts of patients referred to our institution between January 2nd, 2005 and January 31st, 2006 for possible sacroiliac stabilization surgery were reviewed retrospectively. Patients were excluded only if they had incomplete data. All patients were felt to have a clinical diagnostic of sacroiliac dysfunction based on physical examination by physicians and physical therapists experienced with this condition.

All patients underwent a standard fluoroscopically guided sacroiliac intra-articular diagnostic injection with arthrogram, using Lidocaine or Marcaine (figure 3). Quantitative pain data on a numeric pain scale of 0 to 10 were obtained just prior and within one hour of the injection. The responses were divided in three groups:

- Group A: 75% to 100% improvement: Strong presumptive diagnostic of sacroiliac dysfunction.

- Group B: 50% to 74% improvement: Equivocal. Possible diagnostic of sacroiliac dysfunction.
- Group C: 0% to 49% improvement: Non-responders where the diagnostic of sacroiliac dysfunction is presumptively ruled out.

All patients also underwent a standard EMG FAIR sciatic neurapraxia test of both lower extremities. The test measures the difference in H-reflex prolongation when the leg is in neutral and in FAIR position (figure 2). It is usually accepted that a difference of 2 msec makes the diagnostic of piriformis syndrome.

RESULTS:

80 patients had sufficient data to be entered into the study. There were 57 females and 23 males, expressing the gender preponderance of sacroiliac dysfunction. The age range was from 25 to 75 years old with a mean age of 45.3. In 97.5% of the cases, the piriformis syndrome was ipsilateral to the sacroiliac dysfunction. The shortest H-reflex prolongation noted in this series was 0 msec, and the highest was 4.2 msec.

The incidence of piriformis syndrome was 39.3 % for group A (the best responder to SI block, with a strong presumptive diagnostic of sacroiliac dysfunction) and 42.8% for group B (the equivocal responders to SI block, with a possible diagnostic of sacroiliac dysfunction). For groups A and B combined, the incidence was 40.7%.

However, the incidence for group C was 61.5% (the non responders, with a presumptive failure of diagnostic for sacroiliac dysfunction). There was also a tendency for group C to have the highest incidence of the more severe form of the piriformis syndrome with 42.3% of H-reflex prolongations equal or above 2.5 msec and 19.2% of prolongations equal or above 3.0 msec (versus 23.8% and 14.2% respectively for group B and 24.2% and 9% respectively for group A).

As there is superposition of sacroiliac and piriformis symptoms, those results strongly suggest that the presence of a piriformis syndrome may be a source of false negatives for diagnostic sacroiliac injections, especially if it is severe. The incidence of false negatives may be as high as 20%.

CONCLUSIONS:

1/ The piriformis syndrome is frequently associated with sacroiliac dysfunction (with an incidence of at least 40%), explaining the presence of sciatica like symptoms in a subset of patients.

2/ When present, the piriformis syndrome is almost always ipsilateral to the sacroiliac dysfunction.

3/ The presence of a piriformis syndrome may cause a false negative sacroiliac diagnostic injection, especially if it is severe. It is therefore important to also obtain an EMG with standard FAIR neurapraxia test when a sacroiliac diagnostic block shows a negative response.

To our knowledge, this is the first time such a relation has been demonstrated and that a source of false negatives for sacroiliac blocks has been described.

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Spine & Sacroiliac Specialists, LLC
Emory Crawford Long Hospital MOT
550 Peachtree Street NE, Suite 1770
Atlanta, GA, 30308, USA
Phone: 404-577 5455
Fax: 404-681 4401
www.spineandsacroiliac.com