

Levator Syndrome: An Analysis of 316 Cases*

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THE LEVATOR SYNDROME is a symptom complex quite commonly seen in proctologic practice. It consists of pain, pressure, or discomfort in the region of the rectum, sacrum and coccyx that may be associated with the presence of pain in the gluteal region and thighs. The symptoms are often increased by sitting.

In the past, the term "coccygodynia" has been applied to this syndrome, but this would seem to be a misnomer, because in very few of our cases was pressure on the tip of the coccyx painful.

Although this symptom complex had been described in medical literature as early as 1859 by Simpson,¹ its relationship to muscle spasm was not pointed out until 1936, when Thiele³ presented a report on the case records of 12 patients treated by massage of the levator ani and coccygeus muscles. Since then, three papers have been published by Thiele.⁴⁻⁶ The last, in 1963, was a comprehensive review of medical literature and a study of 324 patients. Since then, no paper concerning this syndrome has appeared. In 1964, Wasserman,⁸ and in 1968, Wallace and Madden⁷ described a seemingly related disorder in which spasm and hypertrophy of the puborectalis muscle

caused angulation of the anorectal canal and anal stenosis, resulting in chronic constipation. Pain or pressure did not seem to be a significant factor. Relief of constipation was obtained by partial resection of the puborectalis muscle.

The case records of 316 patients seen during a 15-year period in a general proctologic practice constitute the basis of our current report.

A brief anatomic review should accompany any discussion of the levator syndrome. The levator ani muscle is composed of three parts: the ileococcygeus, the pubococcygeus, and the puborectalis muscles. The ileococcygeus arises from the white line of the pelvic fascia and the ischial spine and runs downward, backward and inward to insert into the sides of the coccyx and the anococcygeal raphe.

The pubococcygeus arises from the back of the pubis along a line that extends from the symphysis pubis to the obturator canal and from the anterior part of the obturator fascia. Its fibers join the pubococcygeus fibers from the opposite side and form a thick aponeurosis that inserts into the anterior aspect of the coccyx and lower border of the sacrum.

Most important in the consideration of the levator syndrome is the puborectalis portion of the levator sling. It arises from the back of the lowest part of the symphysis pubis and the superior fascia of the urogenital diaphragm. It then runs backward

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along the anorectal junction and joins its own fibers from the opposite side behind the rectum. This forms a strong loop that slings the rectum to the symphysis pubis. The lowermost part of this sling-like muscle band becomes intimately fused to the deep bundles of the external anal sphincter. This then contributes to the posterior half of the anorectal muscle ring. The levator muscles are innervated by the fourth sacral nerve.

The levator ani muscle can be palpated during digital examination of the rectum as the gloved finger is passed in an arc of 180 degrees from the tip of the coccyx posteriorly to the region of the symphysis pubis anteriorly when the patient is in the inverted position. The puborectalis is palpated laterally and anteriorly.

Most patients complain of vague, indefinite rectal discomfort or pain. The pain is described as being high in the rectum. The feeling of rectal pressure may accompany the pain or may be present alone. Some may complain of feeling a "ball" or other intrarectal object. In addition, some patients may experience severe pain awakening them from sleep. This has been called "proctalgia fugax." It occurred in 12 per cent of our patients. In 10 per cent of our cases pain in the gluteal region and thigh was an associated symptom. Thiele^{4, 6} reported that this occurred in 43.7 per cent of his patients and suggested that pain is caused by pressure exerted by a spastic piriformis muscle on the sciatic nerve as it passes through the sacrosiatic foramen and on the superior gluteal nerve as it passes between the upper border of this muscle and the lower border of the gluteus maximus.

The syndrome occurs more commonly in women than men. In our series 72 per cent were women and 28 per cent men. Smith² stated that 80 per cent of his cases were women, and Thiele⁶ reported a ratio of 5 women to 1 man. The youngest patient in our series was 6 years of age, and the oldest

90. Fifty-six per cent of the patients were evenly distributed throughout the fourth, fifth and sixth decades of life.

Usually, no etiologic factor can be found in the history to explain the symptoms. Only 2 per cent of our patients gave a history of acute trauma to the region. An even smaller percentage antedated their symptoms to childbirth. Seventeen per cent of patients had histories of previous anorectal surgery. Occasionally the syndrome is seen in acute form immediately following anorectal surgery, perineorrhaphy, or in the immediate postpartum state. Rarely, the condition is associated with pelvic endometriosis.

We believe that many patients with levator syndrome have a relationship of their symptoms to stressing situations and anxiety states, although no in-depth psychiatric review of our cases has been attempted.

Because the symptoms are vague, and the index of suspicion on the part of the physician is often low, the diagnosis is frequently missed, and the patient is usually seen by several physicians without relief. The diagnosis is made by the demonstration of tenderness and muscle spasm affecting the levator muscles. Often the levator muscle may be felt as a firm band beneath the examining finger as it is passed from a lateral to an anterior position within the rectum. During this examination the coccyx should also be palpated between the thumb and forefinger. Six per cent of our patients had tenderness on movement of the coccyx.

A striking finding is that in the great majority of cases muscle tenderness is unilateral and on the left. Only four of our patients had right-sided tenderness. Smith² also reported that in his patients tenderness was often on the left. The reason for this finding is not known.

Most investigators have stated that the etiology of the levator syndrome is trauma or anorectal infection. As has been stated,

very few of our patients gave a history of trauma. Seventeen patients were noted to have a fissure present. Seventy-seven per cent had hemorrhoids. Despite the high incidence of hemorrhoidal disease in our series, most patients were asymptomatic or minimally symptomatic and required no hemorrhoidal treatment to obtain relief of their symptoms.

Treatment of the levator syndrome in the past had been varied and has consisted of coccygectomy, injection of drugs into the muscles, rectal divulsion, massage, diathermy, hot sitz baths, and muscle relaxants such as diazepam. We have used massage, diathermy, sitz baths and muscle relaxants almost exclusively. Contrary to the beliefs of other investigators who state that massage should be given at daily intervals for five to six days, then decreasingly frequent intervals, we have found that often two to three massages two to three weeks apart in conjunction with heat and diazepam have brought about complete relief of symptoms.

Our results were defined as good if symptoms were relieved by three or fewer massage treatments. Moderate improvement was reported if relief occurred with repeated treatment. Results were poor if repeated treatment failed to bring about relief. Sixty-eight per cent of our patients had good results. Moderate improvement was obtained in 19 per cent, and in 13 per cent results were poor. Four patients who had poor results with repeated massage had quite good results when 5 ml of lidocaine and 40 mg of methylprednisolone were injected into the puborectalis sling. Four patients who failed to respond were later treated with rectal divulsion under anesthesia, with good results. Of those patients who had moderate to good results with massage and diathermy, only 12 per cent had recurrence of levator spasm symptoms necessitating repeat consultation or treatment.

Conclusions

The levator syndrome consists of the symptoms of pain, pressure or discomfort in the region of the rectum, sacrum, and coccyx. The patients often have gluteal discomfort and high rectal distress. Sitting may aggravate the disorder. Tenderness upon motion of the coccyx is not an important part of this syndrome. Therefore, the term "coccygodynia" should not be used. The syndrome affects women more frequently than men, and occurs most often in the fourth, fifth and sixth decades of life. Although the symptoms are at times vague, the diagnosis is easily made by those who suspect its presence. Tenderness of the levators is always present and most often unilateral and on the left. Its etiology is unclear. In a significant proportion of patients concomitant anorectal disease such as fissure and hemorrhoids is present. Massage with or without diathermy, hot sitz baths, and muscle relaxants such as diazepam have proven to provide effective treatment, and the recurrence rate after therapy is low.

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