

## COCCYGECTOMY FOR CHRONIC, SYMPTOMATIC COCCYGEAL DISLOCATION: CASE REPORT

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### ABSTRACT

Most coccygeal dislocations are managed non-operatively and surgery is best reserved for protracted coccydynia unresponsive to conservative management. We report our first case of this condition in a 47 year old female who slipped and fell on her buttocks six years prior. She sought repeated medical treatment for the pain and discomfort she experienced with no resolution of her symptoms. Her condition was finally resolved by coccygectomy.

**Key words:** Coccydynia, Coccygeal dislocation, Coccygectomy

### INTRODUCTION

Dislocation of coccyx is a rare condition. The condition is markedly associated with intractable pain described as coccydynia, a term first coined by Simpson (1) in 1859. There are basically two types of dislocations: Anterior and posterior dislocations. We present a case of a 47 year-old female who experienced coccygeal trauma from a fall six years prior and subsequently degenerated into a state of coccydynia, an intractable pain around the coccygeal region of the spine, which couldn't be managed conservatively after many hospital visits. Radiographic evidence revealed anterior dislocation of terminal two coccygeal vertebrae, which were removed operatively.

### CASE REPORT

A 47- year-old female presented with chief complaint of longstanding low back pain for six consecutive

years following a fall on her buttocks. The pain had an acute onset but no associated symptoms such as fecal incontinence was reported. It radiated to both lower limbs in standing position. Aggravating factors included sitting position especially on hard seats, ambulating from a resting position, standing from a seated position, chores that involved bending as well as defecation. She reportedly sought medical attention in many hospitals prior to presentation and was chronically treated with analgesics. Physical examination revealed a well-nourished female in an apparent painful distress. Pertinent finding was profound tenderness in the anococcygeal region more pronounced on the distal coccyx. The tip of the coccyx could not be palpated. Per rectal examination revealed a prominent terminal coccygeal curvature.

The patient presented during her first visit with CT SCAN films of the sacrococcygeal region showing anterior dislocation of two distal coccygeal vertebrae.

**Figure 1**  
*CT scan films of the patient's sacrococcygeal region*



Intraoperatively, the patient was positioned in prone position with buttocks strapped apart. A midline incision was made on the skin overlying the sacrococcygeal articulation extending to the tip of the coccyx. After meticulous dissection, a subperiosteal plane was created. Levator ani muscles and sphincter ani externus were carefully separated from the coccyx and well as the gluteus maximus attachment. Special precaution was made not to extend the dissection to the rectum or the ganglion impar. Dissected coccyx was removed and the tip of the sacrum beveled.

Postoperatively, the patient was stable and immediately was started on parenteral analgesics and 24-hour intravenous antibiotics followed by daily change of dressings. She was discharged home on the fourth post-operative day to be followed up in outpatient clinic.

## DISCUSSION

Coccydynia is a painful syndrome affecting the coccygeal region of the spine. It's a rare condition though the exact prevalence rate is not reported in literature. This condition accounts for less than 1% of all low back pain conditions and five times more common in women than men (2). The typical patient is female with thin body habitus, anecdotally due to loss of mechanical cushioning. Although this condition can occur over a wide age range, the mean age of onset is around 40 years (2,3).

Due to unfamiliarity with this condition by many spine and general orthopaedic surgeons, many patients may suffer for years without proper treatment (4,5). In addition, most surgeons are uncomfortable treating this

condition due to lack of training in this particular area.

*Aetiology:* Anterior angulation of the coccyx may be a normal variant but poses diagnostic challenge for those with trauma.

Postacchini and Massobrio (6) described four types of anatomic coccyx:

*Type 1:* Slight anterior curvature with apex pointing caudally (about 70%)

*Type 2:* More anterior curvature with apex pointing straight forward (15%)

*Type 3:* Coccyx sharply angulated forwards between 1<sup>st</sup> and 2<sup>nd</sup> or 2<sup>nd</sup> and 3<sup>rd</sup> segments (5%)

*Type 4:* Coccyx subluxed anteriorly at the level of sacrococcygeal joint or level of 1<sup>st</sup> or 2<sup>nd</sup> intercoccygeal joints (10%)

Types 3 and 4 are more prone to develop idiopathic coccydynia than those with type 1.

Several possible aetiologies of coccydynia have been described by Nathan *et al* (7). The most common is a single axial direct trauma (2). Pennekamp *et al* (2) reported a 50% incidence of direct trauma. They also suggested that depending on the severity of trauma, patients may experience anything from strain to the pelvic floor muscles to severe dislocated fracture of the sacrococcygeal complex. Generally, causes can be grouped into traumatic and nontraumatic. Traumatic causes include sudden impact due to direct fall on the “tailbone”, pressure on the coccyx during childbirth, especially during a difficult and or instrumented delivery as well as repetitive trauma to ligaments and muscles during activities such as cycling or prolonged sitting on hard, narrow or uncomfortable surfaces resulting in inflammation of surrounding tissue. Nontraumatic causes include degenerative joint or disc disease involving the sacrococcygeal joint, hypo or hypermobility of the same joint, infections, undiagnosed sacrococcygeal teratoma and other regional tumors in the neighborhood of coccyx. Coccydynia can also be radicular or referred pain. It can also be associated with non-organic causes e.g. somatization disorders. Many other causes are idiopathic in nature (7).

*Management:* Management of coccydynia is usually nonsurgical and is successful in about 90% of cases (8,9). This includes simple measures such as use of laxatives, steroid injection in the joint, hot packs, ultrasound for physiotherapy, modified wedge-shaped coccygeal foam pads, analgesics, avoiding hard seats and nerve blocks by injecting the ganglion impar (8,9).

For the few cases that respond poorly to conservative management, more aggressive treatment may be instituted (7). This may include pelvic floor rehabilitation exercises in cases associated with pelvic floor muscle spasms, manual intrarectal manipulation and massage, transcutaneous electrical nerve stimulation as well as psychotherapy. Dean *et al* (8) have also described a procedure in which polymethylmethacrylate cement is injected to treat a coccyx fracture. They termed this procedure “coccygeoplasty”.

For those patients with unresolved intractable pain after conservative management, majority may require surgical intervention. This surgery is referred to as coccygectomy. The first coccygectomy was performed in 1726 by Jean Louise Petit (7). Several studies have reported good-to-excellent outcome in patients undergoing coccygectomy (7). Other studies have suggested that coccygectomy may provide relief in an appropriate subset of patients who have failed all other modalities of treatment (11-13). In an analytic review of 702 patients who underwent the procedure following failed nonsurgical management, Aarby *et al* (13) found success rate in 83% of cases. Some surgical series have reported success rates ranging from 60-100% after coccygectomy. Nevertheless, controversy exists. Some have even advised against this surgery because they found that it frequently failed to relieve symptoms (14).

Relative contraindications to this procedure would include absence of organic pathology, infection in the local region and significant improvement with conservative management.

*Complications:* The most common complication is surgical site infection. Infection rate have been reported to as high as 30% (7). Rectal Injury can occur if dissection plane strays from the subperiosteal region. Fecal Incontinence has also been reported due to inadvertent damage to external sphincter ani and ganglion impar.

*Post-operative care:* After surgery, patients are usually continued on two or more doses of intravenous antibiotics as recommended by Norden (15) and 4-6 days of broad spectrum oral antibiotics. It's advisable to nurse the patients in a lateral or supine position on a specialized sacral cutout cushion to avoid direct pressure on the surgical wound. Patients are discharged within 3-5 days provided there are no immediate complications. Dressings are changed every two to three days. Sutures are removed as appropriate in 2 weeks. Follow-up period of 12-36 months are used to assess clinical and functional outcome.

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## ERRATUM

In the article entitled “*Proximal Femur Geometry in the Adult Kenyan Femora and its Implications in Orthopaedic Surgery*” East Afr Orthop J. 2017 March; **11**(1):22-27 by Lakati CK, Ndeleva BM, Mouti N *et al*, there was an error in the figures given for the right femora. The neck shaft angle was given as 129.03° instead of 129.82° while the anteversion angle was given as 23.03° instead of 22.04°. The Neck width was given as 29.36mm instead of 30.13mm while the head diameter was given as 42.6mm instead of 44.18mm. These errors do not affect the overall findings and conclusions of the study.