Coccydynia

Indexing Metadata/Description

- **Title/condition:** Coccydynia
- **Synonyms:** Coccygodynia; coccyalgia; coccygeal pain
- **Area(s) of specialty:** Orthopedic Rehabilitation, Women’s Health
- **Anatomical location/body part affected**
  - The most inferior portion of the vertebral column is the coccyx, commonly known as the tailbone. The coccyx is a triangular-shaped bone composed of 3 to 5 vestigial vertebral segments. Except for the most superior portion that articulates with the sacrum, the coccygeal segments typically are fused\(^1\)
  - The anatomy of the intercoccygeal segments will vary from the presence of an actual disc similar to those found in the lumbar spine to the absence of a disc and replacement with synovial cells\(^2\)
  - The coccyx serves as an attachment site for a network of ligaments, as well as for the gluteus maximus and pelvic floor musculature (i.e., levator ani and coccygeus muscles). Nerve roots, plexuses, and numerous peripheral nerves traverse through or near the coccyx\(^2\)
  - The anterior surface of the coccyx is concave, while the posterior surface is convex\(^1\)
  - Modified morphology classification of the coccyx\(^2\)
    - Type I: Curved gently forward
    - Type II: Has a marked curve with the apex pointing straight forward
    - Type III: Angled forward sharply between first and second or second and third segments
    - Type IV: Anteriorly subluxated at the level of the sacrococcygeal joint or first or second intercoccygeal joint
    - Type V: Coccygeal retroversion with spicule (i.e., bony outgrowth on the dorsal aspect)
    - Type VI: Scoliotic deformity
- **Description**
  - Historically, coccydynia was described as an injury to the coccyx or coccygeal joints. The subsequent inflammation and contraction of attached muscles was then theorized to be the cause of pain. A later explanation described coccygeal pain as originating from the coccyx, from referral to the area, or from irritation of one of the neurogenic structures adjacent to the coccyx. Most recently, the origin of pain in coccydynia has been attributed to pathoanatomy\(^2\)
  - Classification of coccydynia\(^2\)
    - Based on etiology
      - Idiopathic
      - Traumatic (i.e., landing on buttocks)
    - Based on pathology
      - Sacrococcygeal and intercoccygeal disc and joint degeneration
      - Predisposition due to morphology of coccyx (higher risk of developing coccydynia in individuals with a type II, III, or IV coccyx and presence of a bony spicule and coccygeal retroversion)
      - Referred pain (e.g., lumbar pathology, pelvic floor muscle spasms)
- Other: neoplasms, crystal deposits, infections
  – Somatization or neurotic

› ICD-9 codes
  • 724.79 other disorders of coccyx
  • 805.6 closed fracture of sacrum and coccyx without mention of spinal cord injury
  • 805.7 open fracture of sacrum and coccyx without mention of spinal cord injury
  • 847.4 sprain of coccyx

› ICD-10 codes
  • M53.3 sacrococcygeal disorders, not elsewhere classified
  • S32.2 fracture of coccyx
  • S33.2 dislocation of sacroiliac and sacrococcygeal joint
  • S33.7 sprain and strain of other and unspecified parts of lumbar spine and pelvis

(ICO codes are provided for the reader’s reference, not for billing purposes)

› G-Codes
  • Mobility G-code set
    – G8978, Mobility: walking & moving around functional limitation, current status, at therapy episode outset and at reporting intervals
    – G8979, Mobility: walking & moving around functional limitation; projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
    – G8980, Mobility: walking & moving around functional limitation, discharge status, at discharge from therapy or to end reporting
  • Changing & Maintaining Body Position G-code set
    – G8981, Changing & maintaining body position functional limitation, current status, at therapy episode outset and at reporting intervals
    – G8982, Changing & maintaining body position functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
    – G8983, Changing & maintaining body position functional limitation, discharge status, at discharge from therapy or to end reporting
  • Self-Care G-code set
    – G8987, Self-care functional limitation, current status, at therapy episode outset and at reporting intervals
    – G8988, Self-care functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
    – G8989, Self-care functional limitation, discharge status, at discharge from therapy or to end reporting
  • Other PT/OT Primary G-code set
    – G8990, Other physical or occupational primary functional limitation, current status, at therapy episode outset and at reporting intervals
    – G8991, Other physical or occupational primary functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
    – G8992, Other physical or occupational primary functional limitation, discharge status, at discharge from therapy or to end reporting
  • Other PT/OT Subsequent G-code set
    – G8993, Other physical or occupational subsequent functional limitation, current status, at therapy episode outset and at reporting intervals
    – G8994, Other physical or occupational subsequent functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
    – G8995, Other physical or occupational subsequent functional limitation, discharge status, at discharge from therapy or to end reporting

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<thead>
<tr>
<th>G-code Modifier</th>
<th>Impairment Limitation Restriction</th>
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<tr>
<td>CH</td>
<td>0 percent impaired, limited or restricted</td>
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CI | At least 1 percent but less than 20 percent impaired, limited or restricted
CJ | At least 20 percent but less than 40 percent impaired, limited or restricted
CK | At least 40 percent but less than 60 percent impaired, limited or restricted
CL | At least 60 percent but less than 80 percent impaired, limited or restricted
CM | At least 80 percent but less than 100 percent impaired, limited or restricted
CN | 100 percent impaired, limited or restricted

Source: https://www.cms.gov

Reimbursement: No specific issues or information regarding reimbursement has been identified

Presentation/signs and symptoms
- The primary clinical manifestation is pain in the coccyx area that is worse when sitting, especially on hard surfaces.\(^1\) The patient will likely appear guarded in rising from the sitting position.\(^2\)
- Pelvic floor musculature that is considered overactive and tender.\(^23\)
- Increased frequency of feeling need to defecate or pain with defecation.\(^3\)
- Pain with sexual intercourse.\(^2\)
- Bending forward might be painful on occasion.\(^4\)
- Often associated with dysmenorrhea, constipation, and piriformis syndrome.\(^21\)

Causes, Pathogenesis, & Risk Factors

Causes
- The most common cause of coccydynia in adults usually involves a fall or other direct axial trauma to the coccyx.\(^2\)
- Cumulative coccygeal microtrauma can result from uncomfortable seating coupled with vibration, such as during bicycle, motorcycle, or horseback riding.\(^2\)
- The presence of a spicule can result in irritation of the coccyx in the sitting position. Spicules have been found in 18% of adult cases and 43% of adolescent cases.\(^5\) Coccygeal spicules are the most common cause of coccydynia in adolescents.\(^5\)
- Sacrococcygeal dislocation.\(^19\)
- Acute coccydynia related to preoccygeal calcific tendinitis has been reported.\(^2\)
- One third of cases are idiopathic.\(^8\)

Pathogenesis
- Coccygeal mobility
  - During dynamic radiographs (sitting to standing), normal coccygeal flexion mobility has been determined to be between 5° and 25° when an individual is sitting. Deviations from this normal range have been found in 70% of patients with coccydynia.\(^3\) and this deviation is now associated with condition.\(^1\)
    - Hypermobility: coccygeal flexion mobility exceeds 25° when sitting
    - Immobile: coccygeal flexion mobility is below 5° when sitting
  - Posterior subluxation is when the mobile portion of the coccyx displaces posteriorly when sitting. Anterior subluxation is more commonly seen in adolescents.\(^5\)
- Degeneration
  - Due of the presence of vertebral discs or disc-like structures in some coccygeal cadaver specimens, degeneration has been proposed as a possible cause of pain in patients with coccydynia.\(^2\)
• Coccygeal plexus
  – Nerve entrapment is a potential source of pain that has not been thoroughly investigated(8)

Risk factors
• Female gender(3)
  – Prevalence is 5 times higher among women
  – This gender difference is attributed to anatomy, as well as childbirth trauma. The female coccyx is more posterior in location and larger than the male coccyx, so the female pelvis protects the coccyx less
• Obesity(9)
  – Coccydynia is 3 times more frequent in obese women than in non-obese women(21)
  – Normally, the pelvis rotates in the sagittal plane when an individual sits, thus enabling the coccyx to absorb impact. However, when BMI increases, pelvic rotation becomes inadequate, resulting in an increased risk of injury to the coccyx(1)
  – Obesity is not a factor in the development of coccydynia in adolescents(5)
• Age
  – Patients typically develop coccydynia in their thirties or forties(6)
  – Coccydynia is rare in adolescents (only 6.9% of chronic cases) and has not been found to occur before the age of 12 years(3)
• Angulation of coccyx(8)
  – Patients with a sharp ventral angulation of the coccyx are considered to be at higher risk for developing coccydynia
• Spinal cord injury
  – Of patients with a spinal cord injury (SCI) who complain of low back, hip, gluteal, or thigh pain, 34.6% have been found to have a coccyx fracture(10)

Overall Contraindications/Precautions
› See specific Contraindications/precautions to examination and Contraindications/precautions under Assessment/Plan of Care

Examination
› Contraindications/precautions to examination
  • Perianal paresthesia, loss of bowel control, or bladder symptoms might indicate a medical emergency. Any of these might be indicative of a large herniation onto the cauda equina (i.e., cauda equina syndrome) below the termination of the spinal cord(21) (see Clinical Review...Cauda Equina Syndrome; Topic ID Number: T708499)
  • If during the course of evaluation/treatment the clinician suspects the cause of pain is nonmusculoskeletal in nature or there is coexisting serious pathology, the patient should be referred back to the treating physician
  • Only clinicians specifically trained in the evaluation/treatment of the pelvic floor should carry out portions of the examination related to this region
  – Prior to initiating an assessment of the pelvic floor or intrarectal manipulation, the clinician should receive orders from the physician and informed consent from the patient

History
• History of present illness/injury
  – Mechanism of injury or etiology of illness
    - Any falls to the sitting position?
    - Any direct trauma to the coccyx?
    - If the patient is a woman, has she recently given birth?
    - Does the patient ride a bicycle, motorcycle, or horse?
    - Does the patient associate pain onset with prolonged sitting?
  – Course of treatment
    - Medical management
      - Ask about patient’s past and current medical management for his or her symptoms
      - The treatment of coccydynia is not standardized(19)
- Nonsurgical options include analgesics, anti-inflammatory medications, intrarectal manipulation of the coccygeal vertebrae, and local injections of glucocorticoid-anesthetic mixture(19).
- How has the condition responded to treatment?
- Recent studies of interventional procedures such as ganglion nerve block or radiofrequency ablation have demonstrated pain relief in patients with chronic coccydynia(21).
- Patients with refractory coccydynia might have partial or total coccygectomy(21).

**Medications for current illness/injury**
- Determine what medications clinician has prescribed; are they being taken? Are they effective?
- Steroid injections, analgesics, and stool softeners are frequently prescribed.

**Diagnostic tests completed**
- Plain radiographs can help rule out fracture, dislocation, or subluxation of the coccyx at the sacrococcygeal junction or intercoccygeal segments(12).
- Dynamic radiographs might be obtained in the sitting and standing positions to determine the coccygeal angle and pelvic rotation during sitting(1,12).
- Dynamic imaging of the sacrum should be done routinely in patients with coccydynia to detect sacrococcygeal dislocation(19).
- In the absence of dislocation on these dynamic studies, MRI can be used(19).
- MRI might be utilized to detect inflammation as well as to rule out any underlying medical conditions such as malignancy(1,12).

**Home remedies/alternative therapies:** Document any use of home remedies (e.g., ice or heating pack) or alternative therapies (e.g., acupuncture) and whether or not they help.
- Patients might try sitz baths, muscle relaxants, acupuncture, iontophoresis, and biofeedback; however, the efficacy of these interventions has not been established in the literature(21).

**Previous therapy:** Document whether patient has had chiropractic or physical therapy for this or other conditions and what specific treatments were helpful or not helpful.

**Aggravating/easing factors**
- Document length of time each factor is performed before the symptoms come on or are eased.
- Coccydynia often is aggravated by sitting, bowel movement, and, in some patients, lying supine. Sit-to-stand transfers have also been known to increase symptoms(3,9).
- Sitting on legs or one buttock might alleviate symptoms or allow sitting without causing symptoms(1).
- What occupational or recreational activities aggravate the patient’s pain?
- How many minutes can the patient sit before pain requires changing positions?
- Have seating cushions been tried?
- Reports from women have indicated that more pain is experienced during the premenstrual period(2).

**Body chart:** Use a body chart to document location and nature of symptoms. Pain is located primarily in the coccyx, the lower sacrum, and adjacent muscles or soft tissues.

**Nature of symptoms**
- Document nature of symptoms (e.g., constant vs. intermittent, sharp, dull, aching, burning, numbness, tingling).
- The primary symptom will usually be a localized ache in the area of the coccyx coupled with tenderness(2).
- A “pulling” or “piercing” pain has also been described by patients(13).
- The pain might be insidious or sudden in onset(21).
- In general, are symptoms improving, worsening, or unchanging?

**Rating of symptoms**
- Use a visual analog scale (VAS) or 0–10 scale to assess symptoms at their best, at their worst, and at the moment (specifically address if pain is present now and how much).
- SCI patients with higher than normal pain in the hips, thighs, low back, or gluteals should have a coccyx fracture ruled out(10).
- Document sitting tolerance in number of minutes.
Pattern of symptoms: Document changes in symptoms throughout the day and night, if any (A.M., mid-day, P.M., night); also document changes in symptoms due to weather or other external variables.

Sleep disturbance: Document number of wakings/night, if any. In what position does patient sleep? Many patients find sleeping on side with pillows between legs or prone most comfortable.

Respiratory status: Any use of supplemental oxygen?

Other symptoms
- Document other symptoms patient might be experiencing that could exacerbate the condition and/or symptoms that could be indicative of a need to refer to physician
- Any other symptoms, such as painful intercourse (dyspareunia), headache, or backache?

Barriers to learning
- Are there any barriers to learning? Yes__ No__
  - If Yes, describe _______________________

Medical history
- Past medical history
  - Previous history of same/similar diagnosis
    - Other current or previous spinal disorders?
    - Any history of neuromuscular disorders?
    - Any other pertinent medical history?
  - Comorbid diagnoses
    - Ask patient about other problems, including obstetric history in females
    - Ask patient about other problems, including diabetes, cancer, heart disease, complications of pregnancy, psychiatric disorders, orthopedic disorders, etc.

- Medications previously prescribed: Obtain a comprehensive list of medications prescribed and/or being taken (including over-the-counter drugs)
- Other symptoms: Document other symptoms patient might be experiencing that could be indicative of a need to refer back to physician (e.g., bowel/bladder/sexual dysfunction, saddle anesthesia)

Social/occupational history
- Patient’s goals: Document what the patient hopes to accomplish with therapy and in general
- Vocation/avocation and associated repetitive behaviors, if any: Does the patient participate in recreational or competitive sports? Contact sports, equestrian activities, rowing, and cycling often are painful. Does the patient work?
  - What is the nature of the tasks? Does the patient’s work require continual sitting? Have the symptoms of coccydynia interfered with the patient’s ability to carry out his or her work duties?
  - Sedentary work involving prolonged sitting might be painful. Frequent breaks might be required
- Functional limitations/assistance with ADLs/adaptive equipment: Document any noted limitations, including those affecting transfers. Also document any assistance the patient receives with ADLs or the use of any adaptive equipment
  - Does the patient drive?
    - Coccydynia is often worsened while driving
- Living environment
  - Stairs, number of floors in home, with whom patient lives, caregivers, etc.
  - Identify any barriers to independence in the home
  - Any modifications necessary?

Relevant tests and measures: (While tests and measures are listed in alphabetical order, sequencing should be appropriate to patient medical condition, functional status, and setting)

• Anthropometric characteristics: Determine BMI. Assess for leg-length discrepancy
  - Obesity is considered a risk factor for coccydynia
• Assistive and adaptive devices: Document any use of assistive devices
• Balance: Evaluate balance reactions. Assess ability to maintain single limb stance as indicated; compare time and quality bilaterally
• Cranial/peripheral nerve integrity: See Special tests specific to diagnosis, below
• Ergonomics/body mechanics: Note any deviations in body mechanics; perform ergonomic assessment as appropriate
• Functional mobility (including transfers, etc.): Transfers might be impacted by pain
• Gait/locomotion: Perform general gait assessment, noting any deviations due to pain or that might be contributing to pain
• **Joint integrity and mobility**
  – Typically flexion occurs at the coccyx when sitting and extension in stance. Following trauma, the coccyx might have healed in an inflexible position of extension or flexion. Clinician should assess position as well as lumbar spine and sacral mobility.

• **Muscle strength**
  – Assess strength of pelvic floor musculature, if appropriate
    - The American Physical Therapy Association (APTA) offers certification in Pelvic Physical Therapy. Assessment and treatment should be performed by specifically trained therapists.
  – Manual muscle test trunk and extremities. Patient might have myotomal weakness
    - To check the lower extremity myotomes
      - Hip flexion (L1-L2)
      - Knee extension (L3-4)
      - Ankle dorsiflexion (L4-5)
      - First toe extension (L5)
      - Ankle plantarflexion (S1-2)

• **Observation/inspection/palpation** (including skin assessment)
  – Assess pain/tenderness while applying external pressure on the sacrococcygeal junction and coccyx. Some therapists palpate the coccyx using a gloved hand, with the index finger inserted into the rectum and the thumb placed externally posterior to the coccyx. This method also permits assessment of coccygeal mobility
    - Exquisite tenderness to direct palpation of the coccyx, sacrococcygeal ligaments, and pubococcygeal ligaments are classic findings in coccydynia.
  – If the coccyx is not tender, consider other potential causes, including lumbosacral radiculopathy, chronic pelvic pain, and levator ani syndrome. Assess for lumbosacral origin by palpating lumbosacral musculature
  – Inspect and palpate lumbosacral spine and sacroiliac joints to determine if patient’s symptoms are reproduced and if there is any malalignment

• **Posture**
  – Evaluate sitting posture to determine if weight is properly centered over the ischial tuberosities, as well as general assessment of overall standing and sitting posture

• **Range of motion**
  – Determine whether coccygeal pain is associated with lumbosacral or hip active ROM assessed in multiple planes. Assess flexibility of entire lower extremities

• **Reflex testing**
  – Assess for neurological abnormality. Patient might have hyporeflexia if there is peripheral nerve impingement or hyperreflexia if there is spinal cord impingement
    - To check the lower extremity reflexes
      - Patellar (L3-L4)
      - Achilles (S1-S2)

• **Self-care/activities of daily living** (objective testing): Assess safety and ability during performance of simulated work duties and leisure activities

• **Sensory testing**
  – Sensation testing should include light touch, deep pressure, temperature, two-point discrimination, and any other sensation testing deemed relevant based on the patient’s history
    - To check the lower extremity dermatomes
      - Inguinal area (L1)
      - Proximal anterior thigh (L2)
      - Distal anterior thigh (L3)
      - Medial lower leg (L4)
      - Lateral lower leg (L5)
      - Posterior calf (S1)

• **Special tests specific to diagnosis**
  – Assess cautiously and within the patient’s pain tolerance. The following tests place tension on the L5-S3 nerve roots and are used to detect neural tension.
    - Straight leg raise test
      - While the patient is supine and both knees are straight, the symptomatic leg is slowly raised (hip flexion) while maintaining knee extension until symptoms are experienced
- The leg is then lowered until symptoms subside
- If symptoms return when the ankle is dorsiflexed, the test is positive
  – Slump test (16)
- This test is a series of steps that are continued unless symptoms arise
- While sitting on the edge of an examination table, the patient slowly slumps forward while keeping the head in neutral
- The patient then slowly flexes the neck and the examiner holds the patient in this position
- The knee is then slowly extended
- If there are still no symptoms present, the ankle is dorsiflexed
- A positive test is the reproduction of symptoms with any of the steps; symptoms are then alleviated with cervical extension
  – Oswestry Disability Index (ODI)

**Assessment/Plan of Care**

› **Contraindications/precautions**
  - Surgeons have recommended conservative initial management of coccydynia because of a high rate of infection after coccygectomy (23). However, surgery might be recommended if patient does not respond to 6 months of conservative treatment (12).
  - Manual therapists should be aware that some patients might not be able to tolerate manipulation of the coccyx.
  - **Cryotherapy contraindications** (12)
    – Raynaud’s syndrome
    – Over an area of circulatory compromise
    – Over an area of peripheral vascular disease
    – Cold intolerance
    – Cryoglobulinemia
    – Cold urticaria
    – Paroxysmal cold hemoglobinuria
    – Avoid applying cold over superficial nerves
  - **Cryotherapy precautions** (12)
    – Hypertension
    – Thermoregulatory disorders
    – Over a superficial peripheral nerve
    – Over an open wound
    – Over an area of poor sensation
    – With individuals with poor cognition
    – In the very young or very old
    – Persons with aversion to cold
  - **Thermotherapy contraindications** (12)
    – Application over areas with a lack of intact thermal sensation
    – Application over areas of vascular insufficiency or vascular disease
    – Application over areas of recent hemorrhage or potential hemorrhage
    – Application over areas of known malignancy
    – Application over areas of acute inflammation
    – Application over infected areas where infection may spread or cross-contamination may occur
    – Application over areas where liniments or heat rubs have recently been applied
    – Application in any situation deemed unreliable by the practitioner
  - **Electrotherapy contraindications** (in some cases, when approved by the treating physician, electrotherapy may be used under some of the circumstances listed below when benefits outweigh the perceived risk) (12)
    – Electrodes should not be placed over:
      - The trunk or heart region in patients with demand-type pacemakers or implantable cardioverter defibrillators
      - The pelvic, abdominal, lumbar, or hip region in pregnant women
      - Carotid bodies
- Phrenic nerve or urinary bladder stimulators
- Areas of known peripheral vascular disease including arterial or venous thrombosis or thrombophlebitis
- The phrenic nerve, eyes, or gonads
- Areas of active osteomyelitis
- Areas of hemorrhage

**Precautions** for electrotherapy
- Electrotherapy should be used with caution
  - in patients without intact sensation
  - in patients who are unable to communicate
  - in patients with compromised mental status
  - in patients with cardiac dysfunction
  - in patients with epilepsy
- Electrodes should not be placed
  - over neoplasms
  - over compromised skin
  - over tissues vulnerable to hemorrhage or hematoma
  - over the cervical or craniofacial region

**Therapeutic ultrasound** contraindications for continuous US
- Pregnancy—over the abdomen or low back
- Active bone growth at the epiphysis
- Cancer—over a known or suspected area of malignancy
- Tuberculosis infection—infected tissue
- Hemorrhagic conditions
- Impaired circulation

**Therapeutic ultrasound** contraindications for pulsed US
- Pregnancy—over the abdomen or low back
- Cancer—over a known or suspected area of malignancy
- Hemorrhagic conditions

**Therapeutic ultrasound** precautions for pulsed US
- Active bone growth at the epiphysis
- Areas of infection
- Acute injury
- Impaired sensation
- Impaired cognition or communication
- Impaired circulation
- Skin disease, including damaged and at-risk skin
- Plastic or cemented implants
- Spinal cord and superficial or regenerating nerves

**Whirlpool** contraindications
- Severe epilepsy
- Dermatologic conditions exacerbated by loss of natural skin moisture (e.g., atopic eczema)
- Surface infections
- Uncontrolled bowels
- Acute rheumatoid arthritis
- Venous ulcers
- Tissues devitalized by radiation therapy
- Peripheral vascular disease
- Decreased thermal sensation
- Respiratory dysfunction
- Cardiac dysfunction
- Active bleeding
- Malignancy
- Acute fever
- Acute inflammatory conditions
- Whirlpool precautions (*some are relevant only if entire body is immersed)\(^{(17)}\)
  - Impaired sensation
  - Confusion or impaired cognition
  - Recent skin grafts
  - Medications that dampen the cardiovascular response
  - After alcohol consumption that appears to impair judgment*
  - Decreased strength/ROM/endurance/balance*
  - Urinary incontinence*
  - Fear of water*
  - Respiratory problems
  - Pregnancy*
  - Multiple sclerosis*
  - Poor thermal regulation*
  - Seasickness
  - Edema, when warm/hot water immersion

\(\textbf{Diagnosis/need for treatment:}\) Pain in the tailbone area that interferes with sitting and other daily activities

\(\textbf{Rule out}\)
- Referred pain from
  - retroperitoneal structures
  - gynecological structures
  - lumbosacral spine
  - organ lesion (e.g., rectum, sigmoid colon, genitourinary tract)\(^{(19)}\)
- Sacroiliac joint dysfunction\(^{(4)}\)
- Perirectal abscess
- Pilonidal cyst
- Neoplasm
- Chronic pelvic pain\(^{(15)}\)
- Levator ani syndrome\(^{(15)}\)
- Pudendal nerve entrapment syndrome (Alcock syndrome)\(^{(19)}\)
- Coccygeal fracture\(^{(21)}\)
- Prostatitis\(^{(21)}\)
- Myofascial pain, fibromyalgia

\(\textbf{Prognosis}\)
- The natural history of coccydynia does not usually lead to deterioration\(^{(21)}\)
- Prognosis with conservative treatment has been mixed
  - Published short-term (1 to 6 months) success rates after manual therapy have been modest, ranging from 22% to 25.7%\(^{(18)}\)
  - In contrast, other researchers have reported that conservative treatment is successful in 90% of patients with coccydynia\(^{(13)}\)

\(\textbf{Referral to other disciplines}\)
- Clinician with experience in intrarectal manipulation for the treatment of coccydynia
  - Chiropractor
  - PT with pelvic manual therapy skills
  - Osteopathic physician
- Orthopedist for possible coccygectomy in patients who do not respond to conservative treatment\(^{(2)}\)
- Acupuncturist for recalcitrant pain
- Dietician/nutritionist to assist with weight loss, if indicated
Other considerations

- Coccygectomy might be performed when conservative treatment fails\(^8\)
  - Coccygectomy has been reported to completely relieve symptoms in 21–82% of patients\(^8\)
  - Higher success rates are reported among patients with trauma-related pain and patients with demonstrable coccygeal instability\(^8\)
  - The absence of sequelae after removal of the coccyx suggests that the structure has minimal function. It is often considered vestigial\(^8\)
  - When sitting, the ischial tuberosities bear most of one’s weight, but the coccyx appears to form part of a weight-bearing triad when a person leans backward. However, this is probably of little functional importance, since patients who have had coccygectomies are not reported to have impaired sitting balance\(^8\)

Treatment summary

- Initial treatment
  - The initial treatment for coccydynia that is less than 2 months from the onset of symptoms should include 8 weeks of\(^1\)
    - Rest
    - Stool softeners
    - Sitting posture adjustments
    - Nonsteroidal anti-inflammatory drugs (NSAIDs)

- Lack of evidence
  - To date, scientific evidence on patient-oriented coccydynia outcomes is lacking.\(^20\)

- Manual therapy
  - Ideally, the treating PT will have expertise in pelvic floor rehabilitation in cases in which plain radiographs show a displaced coccyx or manual activation/stability work is tried for weak levator ani and coccygeal muscles. Intrarectal manipulation is indicated for hypomobility of the sacrococcygeal junction or dislocation of coccygeal vertebra\(^2\)
  - Intrarectal coccygeal manipulation might reduce coccygeal pain\(^9,18\)
    - Based on 2 randomized controlled trials
      - In a study conducted in India, 36 patients with coccydynia were randomized to transcutaneous electrical stimulation (TENS) and phonophoresis vs. coccygeal manipulation plus TENS and phonophoresis\(^9\)
        - Coccygeal manipulation resulted in greater improvement than TENS and phonophoresis in VAS pain scale and pain-free sitting time
      - In a study in France, 102 patients with chronic coccydynia were randomized to coccygeal manipulation vs. external physiotherapy\(^18\)
        - Coccygeal manipulation resulted in greater median improvements than physiotherapy at 1 month in VAS pain scale and 3 other pain questionnaires
        - Comparing coccygeal manipulation vs. external physiotherapy, respectively
          - 36% vs. 20% had good results at 1 month (p = 0.075)
          - 22% vs. 12% had good results at 6 months (not significant)
  - Pelvic floor physical therapy may be a safe and effective method for treating coccydynia\(^23\)
    - Based on a retrospective study conducted in the United States of 93 patients over age 18 whose chief complaint was coccydynia and who participated in pelvic floor PT with the main focus being on pelvic floor relaxation
      - Both a physiatrist and a pelvic PT specialist confirmed the presence of pelvic floor muscle hyperactivity and tenderness for inclusion in the study
      - Pelvic floor PT consisted of treatment with a therapist once per week and a home program for an average of 9 weeks
      - Outcome measure was numeric pain scale rating, with a 40% reduction from initial values being considered a “good” outcome and a 60% reduction being considered an “excellent” outcome. For the 79 who completed the pelvic floor PT program, the mean average pain decreased from 5.08 to 1.91
      - Predictors of worse outcomes were higher initial pain, injections prior to PT, history of trauma, and longer pain duration
• Manual therapy versus modalities
  – Researchers in India looked at the effectiveness of modalities in comparison to coccygeal manipulation in treating patients with coccydynia in a randomized controlled study\(^{(2)}\)
    - Thirty-six subjects (male and female) with coccydynia received 10 treatments of either
      - phonophoresis, TENS, and coccygeal pillow use (control)
      - coccygeal manipulation in addition to the intervention administered to the control group
    - Outcome scores used were a VAS and pain-free sitting duration
    - The control group had a pain reduction average of 1.4 versus an average of 5.3 in the experimental group
    - Improvements in sitting duration in the control and experimental groups were 23 minutes and 47 minutes, respectively
    - The experimental group had statistically significant improvements over the control group in both pain reduction and pain-free sitting duration
  – Researchers in Kuwait reported that extracorporeal shock wave therapy (ECSWT) relieved the pain of coccydynia in 2 patients who failed to respond to conservative treatment\(^{(22)}\)
    - ECSWT was provided for 4 weeks, and pain relief was maintained at 12-month follow-up
• Sitting interventions\(^{(4)}\)
  – Coccygeal pillow
  – Coccyx cushions/inflatable ring (doughnut, ring, roof rack)
  – Bottom-up sits
  – Chairs (with coccyx cut outs, collapsible wheelchairs, use two chairs without arms)
  – Stools (folding, tripod)
  – Sitting modifications (reclining, side sitting)
  – Work in standing position, if possible

<table>
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<th>Problem</th>
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</table>
| Tailbone pain that interferes with daily function | Reduce pain to enable performing transfers and ADLs without pain | **Physical agents and mechanical modalities**  
  Use ice or heat packs for reducing pain. Trial use of phonophoresis and TENS might be applied in an effort to reduce pain\(^{(4)}\)  
  **Therapeutic Exercise:**  
  The use of pelvic floor muscle PT using primarily relaxation techniques may be used if hyperactivity/tenderness is noted in pelvic floor muscles | Progress as indicated and appropriate for each unique patient | Educate patient on home use of ice and heat packs |
| Restricted coccyx mobility                   | Normalize coccyx mobility                 | **Manual therapy**                     | N/A                                   | Instruct patient in complementary exercises to perform at home |
### Decreased sitting duration
- Poor sitting posture

### Increase pain-free sitting duration
- Improve sitting posture

### Prescription, application of devices and equipment
Prescribe the use of coccygeal pillow, cushions, or chair variations that increase pain-free sitting duration\(^{(4)}\)

### Activity modification
Educate patient in performing activities in the standing position, if possible. If patient has to sit, educate patient on sitting strategies to increase sitting duration (e.g., reclined sitting or side sitting)\(^{(4)}\)

### Postural training
Review correct sitting posture education/training\(^{(15)}\)

### Instruct patient on use of coccygeal pillows or cushions when sitting

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**Desired Outcomes/Outcome Measures**
- Reduced pain to enable performing transfers and ADLs without pain
  - VAS
- Normalized coccyx mobility
  - Joint mobility testing
- Increased pain-free sitting duration
  - Sitting duration assessment
- Improved sitting posture
  - Postural assessment
- Improved functional ability
  - Functional testing
  - ODI
- Patient satisfaction
  - Patient satisfaction surveys

**Maintenance or Prevention**
- Utilize sitting strategies and external cushioning to manage symptoms
- Improve sitting posture and utilize proper seating ergonomics
- Reduce weight if BMI is high

**Patient Education**
- See “Coccydynia” at MedicineNet.com at [https://www.medicinenet.com/coccydynia/article.htm](https://www.medicinenet.com/coccydynia/article.htm)

**Note**
- Recent review of the literature has found no updated research evidence on this topic since previous publication on November 18, 2016
References