Coccydynia
Evaluation & Management

Bobby Nourani, DO
Disclosures

None
Coccydynia

- Coccyalgia, coccygodynia, tailbone pain
- Localized pain of the coccyx
- Unreported incidence
- Many causes
  - Trauma
  - Non-traumatic
- Clinical diagnosis
- Large differential diagnoses
Causes

- Fall
- Child delivery
- Local trauma
- Idiopathic
- Bone spur
- Arthritis
- Fracture
- Cancer
- Infection
DDX: Chordoma

- Primary bone tumor along the spine
- Most commonly in the cervical or sacral regions
- Slow growing sarcomas
- Account for 3% of bone tumors and 20% of all spinal tumors
- 1:1,000,000
- Metastasis in 30%-40%
- Most often diagnosed in 50s and 60s

www.chordomafoundation.org
Seated Devices

- Roho cushion
- Donut
Persistent Coccydynia

- 10% will not respond to conservative management
- Persistent cases are debilitating
- Coccyx as pelvic floor insertion site
- Soft tissue continuity with spinal and cranial structures
- Reports of anatomically-related pain following injury
Treatment Options for Persistent Coccydynia

- Limited
- Many non-invasive therapies being evaluated
- Pelvic floor PT
- Insufficient evidence to conclude superior interventions
- Coccygectomy as a “Last Resort”
- Absence of Safe, Effective Therapies
Indications for OMT

- Tenderness to palpation reproducing the patient’s pain
- Local pain to palpation out of proportion to patient’s or physician’s expectations with asymmetry or restricted range of motion
- Autonomic findings: emotionally labile, outbursts, crying, unusual anger, fidgety, fast talking, constipation, headaches associated with back or tailbone pain
- Traumatic injury – fall, skiing, snowboarding, horseback riding, kick to the tailbone, painful or traumatic birth
Physician palpates the following bony and soft tissue structures evaluating for tenderness, asymmetry, restrictions, and tissue texture changes:

- Lateral surface of the sacrum and coccyx. Attachments Levator ani muscle, sacrotuberous and sacrospinous ligaments: Thumb pads contact the soft tissue immediately lateral to sacrum and coccyx. Apply pressure from lateral to medial until appreciating firm bony resistance. Evaluate for rotation and sidebending at the sacrococcygeal junction or coccygeal segments.

- Midline sacrum from superior to inferior. Palpate for tenderness and/or joint laxity of the sacrococcygeal junction. Continue careful palpation down each segment of the coccyx inferiorly until the inferior surface of the coccyx is reached. Note tenderness or displacement in the coronal, sagittal, or vertical axis.

- Sacrococcygeal junction: Evaluate right and left sides simultaneously using thumb pads
  - Inferior sacrum between sacral ala and superior coccyx
  - Horizontal axis of sacrococcygeal junction
  - Lateral surface of 1st coccygeal segment
  - Inferior surface of 1st coccygeal segment
Case Reports: Purpose

- Describe two patients’ experiences with persistent coccydynia
- Illustrate the need for evaluation of coccydynia
- Report the effect of transrectal osteopathic manipulation therapy (OMT) for persistent coccydynia
- Report the effect of prolotherapy for persistent coccydynia
Methods

- Retrospective chart review of two patients
- In-person and phone interviews
- Consents obtained
Case #1 Results

● Before treatment: Coccydynia 9/10; 2-3 headaches per week

● Immediate improvement

● Short-term improvement at 1 week

● Lasting improving at 21 months: Coccydynia 0/10; 0-1 headaches per week
Case #1 Discussion & Conclusion

- Post-traumatic coccydynia unevaluated and untreated
- 4 years of low back and hip work-up, unresolved coccydynia
- Refractory pain eventually involved other areas
- Impacted QOL
- Coccyx should be considered in work-up for potentially-related pain
Anatomy

- Coccygeal - Sacrum connections:
  - Anterior and posterior sacrococcygeal ligaments
  - Sacrococcygeal ligaments progress proximally
    - Anterior and posterior longitudinal ligaments
    - Attach to the occipital bone
Thank you

Bill Kuchera, DO

Bobby Nourani, DO
Treatment Preparation

• Chaperone

• Informed consent

• Discussion with patient describing detailed procedure: setup, patient assistance, expected duration, goals of therapy, and endpoint

• Gloves

• Lubricant

• Gauze

• Waste basket
Treatment, Part 1

• Patient position, Part 1: Prone. Chest and head resting against the table

• Physician position: To the side of patient, facing the patient’s head. Physician’s dominant hand should be closest to the patient
Tx Part 1, Local Soft Tissue

• With internal index finger and external thumb contacting the soft tissue structures, evaluate for tenderness or restrictions of the following:
  • Anococcygeal ligament
  • Levator Ani
    • Pubococcygeus muscle
    • Iliococcygeus muscle
    • Ischiococcygeus muscle
  • Par Superficialis
• Treat if there is tenderness or restricted range of motion
• Soft tissue structures are more commonly treated with indirect methods, such as myofascial release, balance ligamentous tension, ligamentous articular strain, facilitated positional release, exaggerated method, or functional technique
Transition from part 1 to part 2 of treatment is seamless with physician’s finger remaining intrarectal.

Patient position: Prone-propped, aka Sphinx position
Prone, lumbar hyperextension, resting on elbows
• Physician’s internal index finger and external thumb contact the inferior tip of the coccyx. Evaluate for tenderness or restrictions of the following:
  • Distal coccygeal tip
  • Each coccygeal segment including attachments at the transverse processes of the first coccygeal segment
  • Sacroccygeal junction
  • Lateral sacroccygeal ligaments
  • Inferior sacrum
  • Anterior and Posterior longitudinal sacroccygeal ligaments
• Treat if there is tenderness or restricted range of motion
• Patient actively assists in treatment by moving their head and neck slowly towards and away from the barrier in all three planes of motion - flexion/extension, sidebending, and rotation. Physician maintains balanced tension until improvement in sacroccygeal somatic dysfunction is appreciated.
• Patient in prone position. Chest and head resting against the table
• Physician’s internal index finger and external thumb contact the following soft tissue structures and evaluate for tenderness or restrictions:
  • Mid-substance and pelvic attachments of sacrotuberous and sacrospinous ligaments
  • Levator Ani muscle
  • Annococcygeal ligament
• Treat if there is tenderness or restricted range of motion
• Soft tissue structures are more commonly treated with indirect methods, such as myofascial release, balance ligamentous tension, ligamentous articular strain, facilitated positional release, exaggerated method, or functional technique
Post Tx Evaluation

• Reassess findings from earlier evaluation

• Compare for tissue texture changes, asymmetry, restrictions, and tenderness
Case #2 Results

- Before treatment: Coccydynia 7/10
- Immediate improvement
- Short-term improvement: one week following treatment
- Lasting improvement, four months following treatment: Coccydynia 0/10
Case #2 Discussion & Conclusion

- Hip, low back, buttock, and tailbone pain
- OMT alone did not work
- Prolotherapy shows promise for refractory coccyalgia
- Indication for further research
Intradiscal Injections

- Best responders: Luxation or hypermobility patients
- Results within one week
- 2-4 months of relief in 60%-70%
- 12 months of relief in 30%
Injections

• **Ganglion Impar block** for sympathetically maintained pain

• **Steroid** injections targeting bone spurs or hyper mobile segments

• **Diagnostic lidocaine** blocks
Coccygectomy

- Results are dependent on the surgeon, “learning curve”
- 93% success rate for luxation and hypermobility greater than 25 degrees
- 4-10 month recovery
Imaging

Standing vs seated lateral x-rays

1. Standing: 15 min

2. Seated
   • Sitting on hard stool
   • Back slightly extended
   • Posture in position where pain is most pronounced
   • Wait for pain

Pathologic if more than 25 degrees variability
Subluxation

Jean-Yves Maigne: Treatment strategies for coccydynia. 1998
Subluxation

Courtesy of Dr Jean-Yves Maigne, Paris, France
Subluxation

Courtesy of Dr Jean-Yves Maigne, Paris, France
Subluxation
Subluxation
Hypermobility

Pain often associated with more ventrally curved coccyx and lack of fusion of sacrococcygeal joint

Jean-Yves Maigne: Treatment strategies for coccydynia. 1998
Hypermobility

Courtesy of Dr Jean-Yves Maigne, Paris, France
Bone Spur

- Account for 15% of cases
- Seen on x-ray
- Best visualized with CT or MRI
- Coccyx is rigid
Bone Spur

Maigne. MRI findings in the painful adult coccyx. 2012 Eur Spine J
Quality Improvement Study
Novel Transrectal OMT

- University of Wisconsin outpatient clinics
- Case series
- Brief pre, post, and follow-up questionnaire
- IRB exempt
Evaluation Form

Coccyx Manipulation Follow-up Questionnaire

Pain level on 0-10 scale, 0 being no pain, 10 being worst pain you can imagine

<table>
<thead>
<tr>
<th>Activity</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laying down</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Circle statement you most agree with:
- I can sit for 2 hours without having to change position
- I can sit for 1 hour without having to change position
- I can sit for 30 minutes without having to change position
- I can sit for 15 minutes without having to change position
- I can sit for...
Informed Consent

1. Patient’s role in the decision making process

2. Clinical issue

3. Suggested treatment

4. Option for no treatment, alternatives
Informed Consent

5. Potential risks and benefits

6. Related uncertainties

7. Patient’s understanding

8. Patient’s preferences and consent
Additional Communication

- Detailed review of procedure and goals
- Verbal vs. written consent
Minors

Refer to individual state laws on informed consent

• Communication
• Documentation
• Legal Guardian
• Chaperone
Physician Documentation

- Informed consent obtained
- Review of intrarectal procedure
- Goals of therapy
- Alternatives
- Potential risks and benefits
Physician Documentation

- Medical necessity
- Subjective supports indications for exam and treatment
- Objective supports treatments
- Complications
Chaperone Documentation

1. Witnessed informed consent by the patient

2. Chaperoned the entire duration of the transrectal procedure
References

• Gray’s Anatomy - 36th, 39th, 40th, & 41st editions
• Complete Anatomy 2019
• Jean-Yvez Maigne, MD
• Patrick M. Foye, MD
• ChordomaFoundation.org
• William Kuchera, DO
• Susan Standring, PhD
References

References


References

References


• Khatri SM, Nitsure P, Jatti RS. Effectiveness of coccygeal manipulation in coccydynia: a randomized control trial. Indian J Physiother Occup Ther. 2011;5:110–2

